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THE PACIFIC RURAL PRESS

SAN FRANCISCO

JULY 1, 1916.

LOS ANGELES

New Fresh Fruit Standardization Law.

Enthusiastic, unanimous commendation of the new fresh fruit standardization law. You can't find a knocker among shippers or foresighted growers of pears, peaches, grapes, berries, apricots, cherries, plums, or cantaloupes.

[Written for Pacific Rural Press.]

THE law, which went into effect Aug. 9, last year, was thoroughly tried out last fall on grapes and some of the pears. Its effect so far this season, is good for manufacturers of farmers' automobiles and other farm conveniences. A large part of our present

season's exceptional prices, for the extra heavy early shipments, is due to the law. These early shipments are of such quality, uniformity, and maturity where the law is properly enforced, that the first sight and taste whets Eastern appetites for what we shall send them later. This season's fancy dependable "California fruit" will be remembered with gastronomic anticipation next season.

"How do you like the law?"

"Throwing out lots of our fruit, but it's good for us. The law has been accepted most favorably by growers and shippers alike, and is certainly a protection against the unscrupulous packer. It is probably the best defense we have of our reputation as packers and shippers of good fruit. We notice also that there are fewer rejections and requests for allowances by Eastern buyers, due in a great measure to the law."—J. L. Nagle, extensive grower, and manager of the growers' co-operative Calif. Fruit Exchange.

"So far as the standardization law has been observed and enforced, its effect has been most beneficial for growers. The necessary steps to enforce the law have not been taken in all localities; in these places, we still have to contend with the short-sighted and dishonest policy of some packers, who not only refuse to refrain from the shipment of green and immature fruit, but continue to "top" their packages, placing fine specimens in the top layer and much smaller fruit in the bottom and middle layers. The only way to enforce the law governing such matters is to have duly qualified and impartial inspectors. By far the greater percentage of fruit is honestly packed, but it should all be so; and all growers who are unwilling to obey the law should be compelled to do so.

"The effect of the law is more plainly seen in the grape shipments than elsewhere. It would be difficult to find a grape grower who will not freely admit that same has been most beneficial to him. Sweet California grapes, free from mildew, have the highest standing in Eastern markets. Sour, unpalatable grapes are unhealthful, disgusting and absolutely valueless. Early shipments of such stock in previous seasons, while frequently selling for high prices, have completely ruined the market, so that later shipments of really fine fruit have gone begging because the consumers have not had time to forget the swindle that had been previously perpetrated upon them.

"Grapes shipped last season, after the law went into effect, were sweet, and met favorable reception by the trade, readily selling at satisfactory prices. There was no break in the market as in previous years, and it is our belief that we can sell fifty per cent more grapes in the future than in the past, and at fair prices, as the immediate result of the enactment of this law. Here, then, is a very tangible result of standardization; and the benefit accrues to grower and consumer alike.

"Close grading, the rejection of all fruit not up to the standard of quality, might cut down the shipment of some varieties; but would result in higher prices and bring a better return per acre. It would compel the careless producer of trash to mend his ways, or be forced out of business, either result being of great benefit to the industry."—F. B. McKevitt, extensive grower, and president Cal. Fruit Distributors.

"I'm getting more and more enthusiastic about it. Practical and experienced growers and shippers all during discussion of the law, contended for honest pack based on uniform size, quality, and maturity throughout each package. Placer county was first to establish standards, similar to those now in the law; since 1911, the rules have been very generally observed. Results have been markedly favorable."—H. E. Butler, extensive grower and author of first draft of the law.

"El Dorado county has maintained the highest fruit standardization

law for about six years, of any county in the State," writes horticultural commissioner J. E. Hassler. "As a consequence, our fruits have gained an enviable reputation wherever sold, with corresponding good prices; and it is our intention still further to grade and improve our fruit pack."

"The law is one of the very few good laws passed by the last legislature. It raises the standard of California fruit and protects the honest grower against the fellow who would ship buckeyes and label them Winter Nelis pears."—D. F. Norton, Nevada county horticultural commissioner.

"This new law is certainly of great benefit to the industry. I think it should be enlarged to include all farm products handled in this State."—F. W. Waite, Imperial county horticultural commissioner.

Similar sentiments are multiplied by all from whom we have expressions.

The Fundamental Features of the Law are that before interstate or foreign shipment of the fruits named in our sub-heading, in packed boxes, crates, etc., they must be:

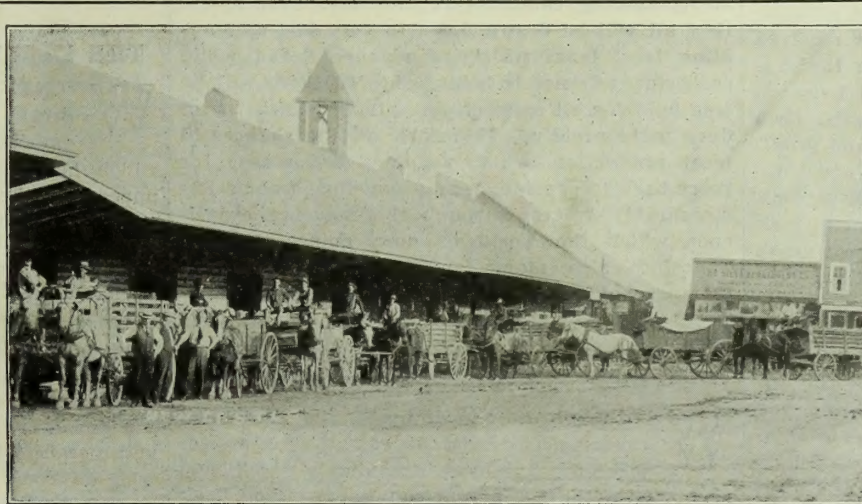
- (1) Practically free from insects and fungus diseases;
- (2) of practically uniform size, quality, and maturity;
- (3) grapes must contain 17 per cent sugar (16 per cent for Emperors);
- (4) on the outside of each container must be legibly stamped the name and location of grower and packer, the number, net weight, or "pack" of the contents, and the variety name;
- (5) wilful violation is punishable by fine or imprisonment;
- (6) enforcement is in the hands of inspectors, appointed by county horticultural commissioners; or in their absence, by county

supervisors upon petition by 25 resident fruit growers.

Growers' Co-operation Necessary.—Unanimous approval and co-operations of growers, packers, and shippers is needed; for inspection of every package is financially impossible. This year, as emphasized by F. C. Brosius, deputy county horticultural commissioner of Sacramento county, and C. K. Turner, Placer county horticultural commissioner, the great need is to show growers the advantages of universal standardization, and to show them that everybody's fruit is treated alike (the latter can't be done under the present law). To antagonize them by too strict enforcement would defeat the purpose of the law. The aim of inspectors is to get the fruit to market in an "eatable condition" with the least possible friction at this end.

Law Tried Out on Grapes.—With grapes last season, hydrometer tests of sugar content had to be taken in addition to the other inspection. San Joaquin county horticultural commissioner Wm. Garden worked up senti-

[Continued on page 4.]



Bringing fresh-packed fruit to shipping sheds at Newcastle for shipment to the East.



Bidding for California fruit in Boston fruit auction room. Each lot of fruit has been inspected, and notes have been made in the catalog as to condition of fruit and highest price each is willing to pay for each lot. It is an exciting pandemonium when the sale is on.

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EDITORIALS

THE WEEK.

WHY should we worry? Those of us who have stock in the big overlands will get a bigger dividend next week than we ever received before. In spite of the irregularities in the season, Eastern fruit shipments are about twice as large as last year, and great prices have been gained. The trade promises to be large and profitable all through and buyers for canning and shipment seem to have lost their pocket-buttons. There is one very good thing about these fruit canners and shippers. They will have the stuff to do business with, and if the grower will not play their way they will play his way. Take, for instance, that which comes from Visalia: "Every grower has disposed of his entire crop at prices that have never before been realized. The organization of the peach growers' association and the canning peach growers' association brought good prices to the growers and left the packers without their full crop. The packers then went into the field and offered big money and eventually were successful in securing the balance of the crop sufficient to operate the canneries in the county and ship away to other concerns."

But the growers should remember that they must stay in the game; if they are misled by this season's prices they will be playing the buyers' way again before long. Do not jump off the bridge which carries you over. But peaches are not doing better than other fruits. Shipping grapes have been selling 50 per cent higher than last year. Pears and other available fruits may be expected also to make good records. Meat prices are climbing, and it looks as though not only the cow, but all the rest of the flesh-formers would jump over the moon. Blessed is the farmer who has something to sell. Even the hemp growers of San Joaquin have secured such prices that it is claimed that no other island crop has yielded so much money. Uncle Sam may find it an expensive job to hang all the murderous bandits he may catch.

WARS AND PRICES.

ALTHOUGH we are rather inclined to hold with those who believe that, on the whole, war is not good for anybody, it is clear enough that it lifts prices, which may not be good for everybody. There is seldom found anything which is good for everybody, and the wonder is, how the hindmost manages to escape the devil—but that is philosophy. The fact is interesting, nevertheless, and it has a lesson for our people who have capital and idle lands. A large meat-dealer told the Oakland Tribune this:

"War shipments are responsible for the shortage of beef. South America is sending great shiploads of beef to Europe that formerly came to this country. Australian meats are no longer being shipped here in any quantity. American wholesalers are sending great quantities to the fighting men of Europe, with the result that meat is getting to be a scarce article. Meat prices are considerably higher than they were at the corresponding period of 1915.

The greatest increase is being recorded in lamb. This is increasing in price a cent or more a pound every week or so. Beef is also increasing in price. Prices will continue to increase so long as the war lasts, as more and more meat is being shipped to Europe."

Some of them even say that beefsteak will retail at a dollar a pound before the turn comes. That may be so, for munition makers, army contractors and ship owners are coining money out of the war, both in this country and in Europe, and they must get rid of their surplus some way, but there will not be much steak eaten at the price of speckled brook trout. The significant lesson of the general fact is, however, that prices will go up and stay up for some time; perhaps, so far as we can see, they will always stay much higher than they have been. With all peaceful countries selling everything that can walk for meat, and with all warring countries killing all the animals they have, or can buy, for their armies, there is going to be an awful shortage of meat-making machinery. It is obvious that a meat supply cannot come back like a supply of potatoes. It takes two or three years to harvest any beef, even if you have the growing outfit; and when you are tempted by price, or forced by the war-office, to destroy the outfit, when can you get back? This will be the question, not only in this country, but in all competing countries in the beef supply, for they all will be drawn down to very low recuperating level from which to advance. And while such slow advance is being achieved there will be free field for all meats from animals which reproduce more rapidly. Therefore, all the chances in meat production, which we have had reason for years back to consider very promising, become immeasurably greater through the reducing experience which the world is now going through. Therefore, also, money and land now wisely put to meat-making has exceptional outlook for profitability.

RESTORATION OF BREEDING STOCK.

WE HAVE often mentioned the likelihood that America will be called upon to replace the fine breeding animals which have been lost in the belligerent countries; giving back to North Europe good specimens of breeds which were native to those scenes of desolation. It is sadly interesting to think of the American names and herd books which will figure in the rehabilitation of the world-famed breeding farms of North Germany, Belgium and North France. Probably much which may survive the war in those countries will have lost its identity. We deeply enjoyed converse with those people just before the war and were warmly welcomed to their homes, their stables and show rings, and could but admire their spirit and devotion to nobility in live stock. Now, probably many of the buildings are destroyed, the animals and their owners war-killed, and the fields desolate. It will take a whole generation of mankind to restore what two years of war has blotted out. We do not hear much about it, for the people patriotically cover their wounds, and yet we find a few very suggestive lines in the official economic weekly of North-west Germany, which, in reviewing the cattle-breeding situation, says this:

"Cattle, pigs and horses fetch fabulous prices, if obtainable at all, and inferior cattle are being introduced in many places. The wholesale supply of cattle to municipalities, now that private slaughtering is forbidden, constitutes a grave danger, because the number of breeding animals is greatly diminished. If this condition continues, there soon will be no more cows in calf, the consequences of which will be fatal to milk, butter, meat and fat supplies. Cattle, however, are generally healthy, although complaints of the great mortality of foals are rife. The lack of natural manure is very evident and the grain crop is only promising well where artificial manures are available. The lack of nitrates is sadly discernible. Vermin have created immense havoc to turnips, oats, summer wheat and fruit trees. Many fields had to be plowed over again. Labor is extremely scarce and only prisoners of war are available for farm work. If they are not supplied, which happens frequently, then farm work can only be done in part and under the greatest difficulties."

And this is about a district which we saw in the pink of breeders' prosperity about two years ago. It is sad beyond words.

LET THE WOMEN TAKE THE WORLD.

BUT one must have some relief from such a picture. The hope of the world is the women. Men have made such a wreck of homes and humanity that they ought to be dropped over the side of the whirling planet. Shall a few be saved? Perhaps so: just a few for policemen and preachers, for women seem to have a natural admiration for man thus functioning, but chuck the rest. We are quite willing to jump overboard, for we are ashamed of our murdering sex! But we speak as a man, forgetting that the Creator has implanted the force of gravitation to hold men to their disgraceful jobs. What then? Regeneration. And is regeneration possible? Yes; women can do it. It is cabled from the Hague, June 24, that the Zeitschrift. Fuer Frauenstimrecht, the German woman suffrage organ, has sent the following greeting to the women of France:

"We feel, think and suffer like you, and swear that after this catastrophic war the women of all nations shall work unitedly to prevent forever its recurrence."

This is really the way out; but remember, sisters, no more admiring glances at Mars; no more drooping lids for lieutenants—nothing left for you but frank, round-eyed worship for policemen, whose duty will be to world-jail all your old heroes! Can you do it? We shall see.

THE ETERNAL PETTICOAT QUESTION.

WHENEVER we think of something really great for women, the eternal petticoat question intrudes, for the same carrier which brings news of the everlasting peaceful purpose of the European women mocks us with a triviality from New York, stating that the common council of the town of New Providence, New Jersey, has passed resolutions requiring all women to wear skirts on the streets. The edict is aimed at a colony of rural dwellers, who claim that they have a right to wear "belted bloomers, soft shirts and sandals," the last at the lower ends of bare limbs, we presume. We cannot express any conviction as to the beauty of this outfit, having never seen it in operation, but the colony women who do wear it seem to have convictions, for, when arrested, one of them said: "We wear these costumes because they give us greater freedom in our work. They are not one-tenth as immodest as the suggestive costumes worn by the girls in New York. We are merely living close to nature and enjoying life."

As we are not an efficiency-expert we cannot figure out the relative percentages of immodesty which the costumes, described and hinted at, involve, but, roughly guessed at, it might appear that with the belted bloomers above, and, working downward as the descriptive artist seems to be doing, the soft shirt next, and the sandals below, it might be possible to produce all the suggestiveness which the New York girls are charged with. All of which ought to demonstrate that the New Providence colony women have a right to wear what they find good for their work, and the town council ought to keep out of the wardrobe.

THE RIGHT KIND OF A STOCK SHOW.

ONE of our associates brings to this issue an outline of a meeting of stock men held this week in San Francisco for the purpose of discussing the feasibility of holding a stock show this fall in San Francisco. Such an enterprise appeals to us as a very important incident in the general movement for greater live stock interests in California, which all friends of State advancement are doing what they can to promote. We have a very clear conviction that such a thing ought to be done, and that it ought to be done in a way to be acceptable and influential to people who like to have great thoughts for California, and to people also who are masters of ways and means to make great thoughts come through to realization. We are sure that A. W. Foster and others spoke truly, at the meeting to which we refer, that an ordinarily good rural stock show, which might be very influential in its district, would not cause a ripple in the deeper waters of San Francisco's customary action and interest. To do the stock interest and the State any good the show must be



great in the breadth and quality of its exhibits, great in its spirit, its environment and its social relations. In a word, it must be metropolitan in methods and motives. We believe that an event of such scope and requirements must be financed in the city. There are plenty of patriotic people in the city who would make liberal subscriptions or guaranties to carry a stock show to distinguished success if they had confidence that the trustees and executives who are chosen to accomplish it, know what great city events are, how to get them, and how to popularize them. Therefore, the first thing to do to get a great live stock show is to get a bunch of the right kind of men—creative, capable, compelling men, whom the city knows, follows and obeys in doing city-like things. The financing of such a great patriotic event is, in fact, only the city's proper share in it. It is to entertain, instruct and prosper the city by the drawing of great industrial lines of State development, which always must converge in the metropolis and invite the city's capital to profitable use. To do this it must cost enough to make the city feel that something is getting into its pocket and grab at it. It is the country's share to put on the exhibits and to spend its time and money to make those exhibits world-beaters in their way. To do this the breeders must buy stock, feed stock, massage stock and outfit an army of attendants, and have a try at dazzling premiums. In a word, the exhibitors must put on the show, and the city patrons must provide it everything needed to make it great, notable, popular and fashionable. We believe a really great thing can be done in this way if the right men will go to work at it. If it is undertaken in a small way the city will either never know of it, or laugh at it in a small individual way. Make the thing a thoroughbred or knock it in the head. We have had our say; if you think differently, break out with it!

Replanting Root-Knots.

To the Editor: Our peach trees, planted a year ago last winter, grew nicely last summer, with the exception of some which showed foliage reddish green this summer. By digging we find large knots on the roots and on the body of trees below the graft. The trees below the graft grow so much larger than they do above the graft. Will it do to put out new trees in the same places where these are taken out? Is there any remedy for trees infected this way?—L. W., Saugus.

This is a typical case of root knotting of young trees in which there is nothing to do but to dig them out. Where a knot has got such start of a young tree it is better to begin over. Dig them out now and leave the holes open to bake in the sun the rest of the season. Next winter dig the holes out larger and plant the new trees in the same places, to make your orchard lines right, but fill in around the trees with new soil.

Summer-Grazing Hogs in Old Orchard.

To the Editor: What would you advise me to plant in an orchard at this time of year for hog grazing? I have plenty of water available and figure on sowing as soon as each fruit crop is harvested. Would a combination of barley and vetch and barley and black eyes be first-class combinations? Would you consider raising and pasturing various crops of the legume family beneficial to an old orchard where the natural vegetation is practically a thing of the past?—W. D., Acampo.

Supposing you have some of the deep, well-drained loam which is abundant in your section, you can probably put on water rather freely without danger to the trees. If so the Black Eye or some other cow pea and barley ought to make you a good lot of green stuff for feeding. Cow peas are usually better summer growers than the vetches, which work well in a winter combination. We do not like pigs in an orchard which we care anything for, but some people do, and you can take your choice of these likings, but do not crowd in too many hogs and watch that they do not start in barking the trees. Surely growing green stuff and manuring an old orchard is good for it. Of course the hogs should be kept off when the ground is wet from irrigation.

Rape, Corn and Taffy.

To the Editor: What about rape? Can I drill it in the corn as they do in the East? You save us lots of loss and time in experimenting, by your advice. The Pacific Rural Press beats them all for reliability.—D. B. S., Santa Cruz.

Rape usually makes a measly summer growth in California, though it might do better with you right on the coast. The chances are, however, that drilling it in the corn would be more apt to spoil the corn, by interfering with proper summer cultivation than to get you anything worth while.

Twig Failure by "Brown Rot."

To the Editor: I send a few dead twigs of apricot trees. They are affected by some disease causing gum to exude. The twig then dies. The trees otherwise, for the present, do not seem to be infected.—J. E., Los Altos.

The gumming and death of the twigs is probably due to the work of the brown rot fungus which not only attacks the maturing fruit, but when conditions favor it, invades the tissues of the shoots and twigs, its work showing results the following season like those you send. The work of this fungus depends largely on the moisture conditions of the air; and dark days with damp air prevailing when the growth is starting, as was the case in February of this year, is very likely to bring out twig injury in vastly greater amount than in our normal years. The treatment would be lime-sulphur spraying after the leaves fall, followed by another lime-sulphur spraying just before the buds open for the new growth.

Crops for Alkali Sod Land.

To the Editor: What is a good crop to plant on Bermuda and salt grass sod land?—A. G. McC., Selma.

You probably have this kind of sod because these grasses will stand some alkali and unless you take steps to remove or keep down the alkali you will not get much else; because, though the salt grass can be cultivated out when other plants will take hold, Bermuda grass likes the soil all the better without the alkali and the more you work the land in ordinary ways the more Bermuda you will get. If the land is not too alkaline to carry a stand of alfalfa that plant will put up the best fight on the Bermuda we know of. For a cultivated crop, stock beets will stand most alkali and if winter grown will have the advantage of having the alkali down and the Bermuda inactive. You might also get a certain amount of winter-grown grain hay. There is little chance for summer crops: the Bermuda will be too busy.

On Ragged Edge of Alkali.

To the Editor: We have a seven-year prune orchard. Some places have more or less alkali, though not greatly perceptible amount. In the worst alkali places the foliage of the trees has turned yellow and they also have small dead branches such as may be seen through the whole orchard. It has not been irrigated for three years, though the water is within three or four feet of the top of the ground. Is this water too close to the surface, forcing up the alkali; and could we, by irrigating, force it down or wash it out, to a certain extent? The prunes are dropping heavily on these alkali places during these warm days.—C. M., Visalia.

Theoretically you could wash some alkali out of the surface soil by using plenty of sweet water on top—providing two things: first, that the ground water has a free out-flow at the present level so that adding more water would not raise it; second, that you could mulch, or otherwise treat the surface so that evaporation will be less than it has been hitherto. If you cannot be sure of these conditions, irrigation will perhaps cause the trees to die faster than they are now dying and will give you an alkali pond or an alkali flat—depending upon whether the water you add can get away below the surface or not.

Theoretically, again, if the area where the ground water is so near the surface is definite and adjacent land has ground water considerably lower, you can ditch through the rim of the basin which is holding the water up and draw it down to a

lower level and then irrigating with sweet water would be more likely to carry away alkali, if you reduced evaporation to a minimum by extra good surface cultivation between irrigations. If the ground water is high all around you there is no hope of working this way.

Theoretically, again, if you find by digging or boring a well that you have a gravel streak below, it is possible that such holes will draw down your present ground water and then irrigation might help to wash out some alkali and help the trees.

Practically, if you conclude that these subterranean researches would cost more than the prune trees are worth, we have to advise you that they will make a little better firewood now than if you leave them to be killed by alkali. The land would probably grow good date palms and possibly rather poor pears.

To Blast or Not to Blast.

To the Editor: We have a sandy loam soil about two and a half feet in depth, then comes gravel, that is a little hard to dig in. Would it be advisable to blast for trees in this soil?—L. W., Saugus.

Try an experiment to see how your gravel subsoil acts. Dig a hole in it, (after getting through the top soil,) deep enough to hold a pail of water and see how the gravel behaves towards it. If the water goes down into the gravel pretty soon, fill it up again and again and see if you can make it hold water. If not, you have no need to blast, the soil is probably too leaky already. If it does hold water after two or three fillings, it is probably somewhat cemented and a little shattering may help it. But do not decide too quickly; you are in a region of light rainfall and trees are apt to suffer from too much opening below, unless you are irrigating, and then you may need freer drainage than you do for rainfall. But do not shoot too soon. Sit down and study the Mexican situation. It is much like soil blasting in a dry country.

Bean Plants Going Singly.

To the Editor: My plants of pole beans are often dying one at a time in a hill at blooming time and thereafter. The root system of the dead vine parts from the ground easily. Bunch beans similarly located have the same leaf affliction. What is the cause and remedy?—G. M. S., Colusa.

The bean plants show some thrips' injury, but not enough to cause collapse, and this too is probably general through the patch. Going off singly as you describe and the loss of root-hold, indicate a root failure probably due to fungus invasion. This collapse is caused by the fusarium fungus with many plants including legumes. The actual detection of this fungus is not sure with dried specimens and is difficult under all conditions. There is no treatment sure to reach this trouble in the root. Removing and burning failing plants, as soon as they are seen, will make a garden patch look better and may do some good to other plants. The most rational thing to do for next year would be to rotate crops, bringing your beans on ground not recently occupied by their kind.

Standard Prune Pollenization.

To the Editor: Is the Burbank Standard prune a self-pollenizer or not; and, if not, what will it pollenize well with?—B. P., Grass Valley.

From what we understand to be its ancestry and from the general reports of its free bearing, we apprehend its self-pollination is all right. Has any grower had trouble with it?

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., June 27, 1916.

STATIONS	Past Week	Rainfall Data		Temperature Data	
		Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka	24	39.25	46.02	68	44
Red Bluff	0	20.21	25.02	90	56
Sacramento	0	18.28	20.09	90	54
San Francisco	0	27.12	22.27	74	50
San Jose	0	16.31	16.79	88	44
Fresno	0	11.72	9.68	92	56
Independence	0	10.34	9.53	92	—
San Luis Obispo	0	26.89	20.51	88	42
Los Angeles	0	19.92	15.64	76	54
San Diego	0	12.55	10.01	68	56

New Fresh Fruit Standardization Law.

[Continued from page 1.]

ment among growers before picking time, by holding meetings all over the district, at which co-operation was promised. In this way, it was hoped to relieve the inspectors and avoid having a large number of them. That this failed to work so well as in Fresno Co. where horticultural commissioner Fred P. Roullard had a larger number of inspectors and where packing was done in larger houses than in San Joaquin county, is emphasized by Mr. McKevitt. Mr. Roullard had seven local inspectors, and a chief inspector whose principal duty was to standardize the work of the others. Each of the local men was responsible for six to twelve packing houses, and they inspected about 3000 carloads last fall at a cost of a trifle over \$1 per carload. To get uniform inspection, weekly meetings of the inspectors were held during August.

"Two points were forcibly brought out," reports Mr. Roullard. "(1) Heretofore grapes have been shipped too green to be palatable when put on sale in the East. The result was lower prices and condemnation of California grapes. (2) It is also evident that in the past, grapes badly mildewed have been freely shipped. Last season, many growers could not ship a large percentage of their crops on account of mildew, and the result has been far more efficient sulphuring this season." Mildewed berries were excluded from shipment as nearly as possible, but stem mildew was permitted.

P. H. McGarry of Clovis examined California Malagas and Tokays during Sept. and Oct., 1915, at Ogden, Denver, Kansas City, Chicago, Detroit, Buffalo, Boston, N. Y., Philadelphia, Pittsburgh, Cleveland, Minneapolis, St. Paul, Seattle, and Portland. He reported to Mr. Roullard, "I regret that I was unable to find mildew on the berry; but saw much stem mildew. . . . If mildewed grapes are not edible when packed, they can scarcely improve on the continental journey. Stem mildew has invariably extended to the grapes, giving them a musty, moldy flavor and often causing them to decay." Grapes of early varieties testing 17 per cent were going forward from Imperial Valley in mid-June.

Big Job with Cantaloupes.—The twenty cantaloupe inspectors of Imperial county have handled as much as 218 cars in one day. The law provides the number of melons to be put into each sized crate, and that they shall be of uniform size and maturity. Horticultural commissioner F. W. Waite gained the co-operation of the shippers so that their inspectors were appointed county inspectors, besides two at large. The daily government reports from 20 markets indicate good prices and "Quality Good," largely due, according to Mr. Waite, to the melons being picked "on fullslip" (mature). In view of disastrous former seasons, the present high markets are remarkable, since 2078 cars had been shipped this season up to June 17, 1916, while only 1452 cars had been shipped to the same date last year.

Drastic Enforcement Avoided.—Not much fruit has been condemned in the State, and very few arrests made. Final inspection at shipping sheds is used principally to check up the results of earlier inspections and instruction at the ranch packing

sheds, where most of California deciduous fruit is packed. Where fruit has been turned down for eastern shipment, it has usually been sold in California markets, to which the law does not apply. But Mr. Waite destroyed seven crates of green cantaloupes May 7; and many crates have had to be condemned in the fields.

This season, Sacramento county pears sized up two weeks early, but not enough sugar was elaborated on account of cool weather. This was discovered in the early shipments, and further shipments were forbidden until June 24. Such green pears would have to be stored in the east and would shrivel, then come into competition with later picked fruit.

Last fall J. B. Wright, Newcastle inspector, rejected 300 or 400 boxes of pears which had been shipped there for consolidation with other fruits into a car lot. Attempts failed to sell the pears locally and they were finally shipped back to their starting point at considerable loss.

In Fresno county Mr. Roullard last fall ordered a grower to repack 294 crates of mildewed grapes, cutting out mildewed berries. The grower shipped them without repacking, and was convicted and fined by the lower court. Two carloads shipped from a neighboring county into Mr. Roullard's territory to be packed were so rankly mildewed that they were condemned outright.

D. F. Norton, Nevada county horticultural commissioner, had a case where unripe, diseased, and insect-infested fruit was persistently shipped. His appeal to the attorney-general brought the advice to have the shipper arrested as the law provides; but this is much to be avoided wherever possible.

Of the 180,000 crates of strawberries shipped from Sacramento county this spring, 6800 were condemned and sold locally. Many of these were simply too ripe to ship far.

Standardization Tried Before.—Placer county, which took the lead in putting the new law in force, ships more deciduous fruit out of the State than any other. Shippers here have for several years enforced standardization similar to that now required by law; but not all of the 12 or 15 companies operating there were proof against temptation. Thus it often happened that when the inspector would turn down fruit at one house, it would be accepted at another in order to get the grower's account. Mr. Wright inspected two years thus, at Newcastle, where there are about a dozen competing shippers. He says that the troubles of enforcing standardization were multiplied before the law went into effect. We have the secret also from other shippers and inspectors, that small fruits would habitually be rolled pell mell into bottom layers of packages where the top layers were packed carefully with beautiful uniform big fruit. It is also whispered that not uncommonly were buckeyes, oak balls, green apples, green peaches, and even pebbles hidden away in the under layers to damn

the sale of California fruit.

How Inspectors Work.—Now the inspectors go to the bottom of an occasional crate or box in every load of fruit that comes to any shipping house, unless the grower's pack has proved reliable. They still uncover fraud; but when fruit is condemned, a grower cannot get by with it at any other house.

A grower brought his first load of Burbank plums to a Newcastle shipping house, packed honestly, but absolutely no color. He promised not to pick any more until they had a considerable blush near the point, as Inspector John Soto instructed him.

In another load, three boxes of peaches were found marked "85" when they should have been "90" and were re-marked before passed. On a previous day, he had stirred up a man-sized row by requiring the repacking of a lot which he showed could be packed half a dozen more peaches per box. Mr. Wright had also found 60 boxes marked "85," when they should be "90" which averages 5 cents less per box.

"Never a day passes but what we reject fruit at 1-3 to 1/2 of the houses in town," said Mr. Wright. "This is mostly for lack of uniform size. We find fruit mismarked both as to size, variety, and sometimes name of grower. These we can correct by re-marking at the shed and cautioning against future offenses. Overmature or green fruit sometimes has to go back to the ranch or to local markets, because the packages usually lack uniform maturity."

Inspection is helped by each house having its own receiver, who inspects crates or boxes of every load and calls the inspector's attention particularly to any faults. A Hindu grower in the country was found by one of the shippers, almost stripping his plum trees at one picking. The inspector was notified to watch particularly for that fruit, which was likely to lack uniform size and maturity.

Country Inspection.—The most important part of all inspectors' work is at the ranch packing houses; for prevention of wrong packing or marking is far better than later rejection. Placer county's eight inspectors take care of their shipping sheds, and spend as much time as possible on the ranches. Mr. Turner acts as a supervisor and unifier of all of them.

In Sacramento county, just now, a man on horseback rides the American River and two men on motorcycles watch the packing on the Sacramento.

When the Sacramento inspectors find refractory packers, they telephone to horticultural commissioner H. G. Kercheval, and either he or Mr. Brosius interviews the grower and his packer, and then watches for his fruit at the next morning's regular inspection at Sacramento city docks. One or the other of these gentlemen always spends the day in the fruit districts. They have let some immature fruit go through this season, because packers were uninformed until detected.

Problems and suggestions for improvement of the law will be treated in another article.

Only three rejections of berries under the fruit standardization law are reported from Sonoma county.



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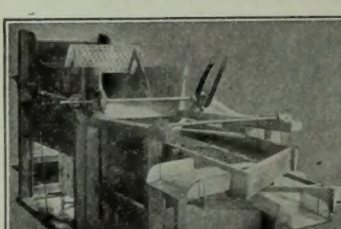
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Productive Value of Oranges.

[Written for Pacific Rural Press by Prof. R. S. Vaile, Citrus Experiment Station, University of California.]

Attention is constantly called by real estate agents, promotion companies, and enthusiastic growers, to the profits which may be realized from orange groves. On the other hand, there are a large number of growers who claim that the industry has passed its prime, or that the middle-man, or the marketing system in general is taking the profit. The writer has been gathering figures that might serve as a basis for an impartial analysis of the situation, in showing where between the extremes, the economic situation of the industry really stands.

AVERAGE ORANGE COSTS, VALUES AND PROFITS.

	Per acre yield	Yield above cost	Net value of crop	Interest on \$1000 per acre valuation.	Per acre value on which 6% be paid
State 5 yr average, 1910-11, to 14-15	127	17	\$21.25	\$2.125	\$355.00
4 year average (omitting freeze year)	145	35	43.75	4.375	725.00
1914-1915	142	32	40.00	4.00	665.00
High yielding section, 1914-15	196	86	107.50	10.75	1800.00
5 year average 1906-7, to 1910-11, 26000 acres	157	47	58.75	5.875	980.00

The factors which must be considered in determining the net value of any crop are (1) the per-acre production, (2) the per-acre cost of production, (3) the net value to the grove, for a unit of production.

(1) Calculations based on acreage figures gathered by the State Commissioner of Horticulture, and shipments actually made by the railroads, show that the average yield per acre of all oranges of bearing age, throughout California for the five years, 1910-11 to 1914-15 inclusive, was approximately 127 packed boxes. The highest seasonal yield during that period was 158 packed boxes in 1913-14. The 1914-15 crop averaged 142 packed boxes per acre. The highest yield for a district of any considerable size (foothill section of Los Angeles country from Claremont to Duarte) was 196 packed boxes per acre. The Citrus Protective League gives the average on 26,000 acres from 1906-7 to 1910-11 inclusive, as 157 packed boxes.

(2) The Citrus Protective League in figuring the cost of production for the 1910-11 crop, found that \$136.30 per acre was the average expenditure on orange groves without including the harvesting, packing, or marketing charges. This allows nothing for interest on the investment. The writer's investigations indicate that this figure is, if anything, too low, rather than too

high. This figure is an average one, the best producing groves cost somewhat more per acre in general, while many of the low producers cost somewhat less.

(3) Such figures as are available indicate that the average price, 1910-15, per packed box f. o. b. California, for all oranges has been not to exceed \$1.70. From this must be subtracted \$.0771 as cost of picking, \$.0287 for hauling, \$.3246 for packing, \$.07 for selling, or a total of \$.5004. This leaves a net value to the grove of approximately \$1.20 per packed box.

Costs Paid by 110 Boxes.—Assuming that the figures noted above are accurate for the per-acre cost of cultural operations (which costs remain fixed within fairly narrow limits, no matter what the yield), and assuming that the average selling price for the past five years gives a just indication of future prices, at least 110 packed boxes per acre are required to cover the actual costs. Interest on the investment commences when the yield goes above 110 packed boxes per acre.

The accompanying table shows the general economic condition of the orange industry. The single year figures are not entirely representative of a particular year because high yields are usually accompanied by low prices, and vice versa.

The 5-year average, 1910-11 to 1914-15, includes the year of the disastrous freeze. The average for the other four years has been 145 packed boxes.

Valencias Show Up Better.—These figures apply to all oranges. Valencia groves have probably averaged a little higher in per acre production and have certainly averaged higher in value per box, so that the net value of the crop has been greater. To offset this, however, there is a very large acreage of non-bearing Valencias which may make quite a change in the market conditions within the next few years.

State Average Value \$1000.—Such figures would indicate that the orange industry is showing reasonable returns on a valuation of \$1000.00 per acre as a state average. (This is as high or higher than any of the staple crops pay on fair valuations, as indicated by Federal surveys.) Groves which produce 1700 packed boxes per acre or which return \$1900.00 net per acre per year (such instances have recently been called to the attention of the writer), may be certainly taken as very exceptional; they do not represent a proper basis for study of the orange business. Further than that, one year's returns can never be a true criterion of any business. In an industry such as this, where the investment is large and the time before productivity is reached is considerable, a five- or ten-year average

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is the shortest interval that can give accurately the conditions.

The strongest lesson to be gained from the table submitted, in the judgment of the writer, is the relation between per-acre yield and net profit. The following tabulation shows the rate of increase in profit with increase in production, assuming as before the relatively fixed per-acre costs and average prices.

Yields Determine Value.		
Packed boxes per acre	Yield above fixed cost	Net value per acre
Low		
.....110	0	\$ 0.00
.....125	15	18.00
Usual		
.....150	40	48.00
.....175	65	78.00
.....200	90	108.00
.....225	115	138.00
.....250	140	168.00
.....300	190	228.00
Occasional	400	448.00
Exceptional	500	468.00

The net value as shown is doubtless somewhat too high in case of the higher yields, because as already pointed out the per-acre cost of production is generally greater on high yielding groves than on the low-yielding ones.

Profit depends on the combination

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of favorable location and cultural conditions with the proper personal equation in the owner. The latter is of utmost importance in the orange business because of the exceptional amount of industry, knowledge, and common sense required.

Prices for seedless raisins will be named in a week or two. Efforts have been made to keep prices down to stimulate consumption; but last year with such prices, San Francisco speculators bought much of the crop and advanced the price one to two cents a pound so this object was defeated. It is expected that the price will be higher this year.

Faster and Better Plum Packing.

[Written for Pacific Rural Press.]

The best system of plum packing we have heard of is that described as practiced by George Sykes, now working in Sacramento county.

Ordinarily, each packer picks fruit from one of several lug boxes or baskets, guessing as to the size he wants (this varies about 19 per cent in each layer in the usual plum baskets) and testing them out by squeezing or finding them too loose, then throwing them back and trying some more. It is hard on the plums, for it bruises and brushes their bloom off. It is hard on the packer because he works by the crate. It is hard on the grower and on the shipper, for poor packing results; and lowered prices follow.

In Mr. Sykes' system, a three-foot square bin four inches deep is covered with a canvas onto which plums are emptied from the field boxes ready for the grader. On one side of this bin is another of the same size with a bench for packers at its far side.

A bin just like the others is placed against them so it overlaps half of each. A similar one is put on the opposite side. If desired, another pair can be added, one directly on each side of the grader. Each of the bins except the first two, has two packer's benches.

The grader puts the biggest plums into the first bin added to his own, where one packer can usually handle all of that grade. The smallest fruit is put into one of those beside him. The medium sizes are rolled into one or another of the remaining bins by simply lifting the canvas and letting them roll.

There is sufficient variation in sizes even at that, to allow packing the sloping baskets, but there is much less of undesired sizes in the way of each packer; and it is far quicker. It encourages first-class packing and prevents repeated handling of fruit by the less experienced packers.

Reputation for Good Packing.—"Here is one of the best plum packs we inspected," said F. C. Brosius on the Sacramento docks recently. Jas. Elliot of Courtland allows the top layers to be handled only once, on account of the bloom. They are packed directly from the picking baskets or boxes. We don't often have to inspect his stuff, for it is standard from top to bottom. He pays a boss \$2.50 per day to do nothing but watch his packers. They get 6 cents a crate and can put up about 40 crates per day. All plums without stems are sold locally. They would be apt to leak on the long journey East, and smear the others. He doesn't permit loose packing, varied sizes, or lack of uniform maturity.

AVOCADO VARIETIES COMMITTEE.

A most important committee of the California Avocado association has been organized. It will deal with the classification and registration of varieties of the avocado. As there are over a hundred varieties, each of which at the present time has its advocates, the work before this committee is no light task. It is of course highly desirable, from a commercial standpoint especially, that the varieties of real importance and unquestioned value be selected

and their number reduced to a minimum, in order to avoid confusion and aid in standardization. Varieties of little value or having specific drawbacks, however admirable they may be from some one viewpoint, should be eliminated from the consideration of the prospective commercial grower. The committee appointed for this purpose is believed to be exceptionally qualified to exercise unbiased and authoritative judgment. A negative qualification necessary for eligibility to appointment upon it is that none of its members shall be commercially interested in avocado culture. It comprises the following; Dr. H. J. Webber, chairman; Prof. Ira J. Condit, William Hertrich, H. M. Haldeman. Dr. Webber is director of the University of California's citrus experimental station at Riverside. Prof. Condit is in the Agricultural department of the University at Berkeley and is especially charged with the investigation of the avocado. Mr. Hertrich is head of the extensive horticultural and farming interests of Henry E. Huntington. Mr. Haldeman, although manager of the Boynton Company, which deals in pumps and machinery, is an enthusiastic amateur grower of the fruit in question, and is particularly well informed on the subject. A fifth member will be appointed shortly.

The committee will register only varieties that have borne desirable fruit in reasonable quantities. It will act as judge for the association at its exhibitions, either of nursery stock or trees; and will decide upon a form of certificate to be awarded to the growers of varieties deemed worthy of recommendation. Thus, many of the objects sought to be attained by the organization will be achieved directly through the work of the above-named gentlemen.

CONVENIENT GRANARY.

[Written for Pacific Rural Press.]

Convenient granaries are not so common as they should be on California farms, especially where hogs or other livestock requiring grain are kept.

On the River Bend ranch at St. Helena a granary 14 feet square has been constructed which saves waste of grain and makes winter feeding a much pleasanter task.

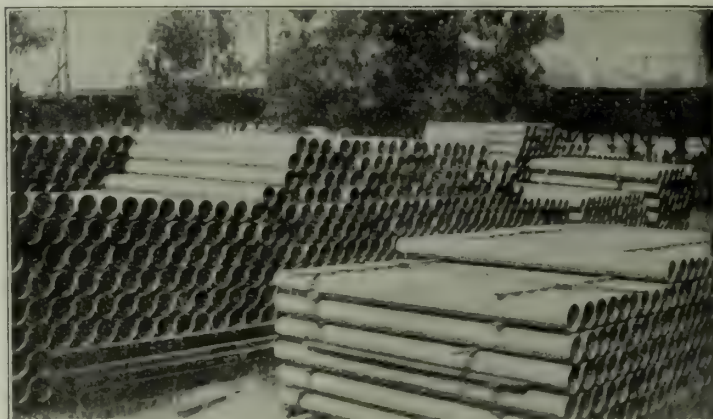
The walls of the building are studied and covered with rustic on the outside. Half-ton bins are built next to this wall on three sides, being built perpendicularly and raised from the floor 16 inches. They are made of tongue-and-grooved lumber, and have a bottom sloping toward the center of the building.

A small sliding window at the bottom is used in emptying the bin into buckets, the glass allowing the feeder to tell at a glance the amount of grain in the bin and also the kind.

These bins are filled from the outside, hinged windows being placed at the top of each bin and opening outward, near the top of the outside wall. By this arrangement the bins can be filled direct from the wagon by opening the window and pouring direct from the sack.

The building is situated close to the hog lots and allows exact measurement of all rations in winter or summer.

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Two Thousand Boys in Agricultural Clubs

[Written for Pacific Rural Press.]

The Boys' Agricultural Clubs are making good farmers out of farmers' boys and at the same time making better farmers out of the boys' fathers.

Such was the impression gained by the writer in a day's tour by auto with the supervisor of Northern California Agricultural Clubs.

In the county we were traveling, three kinds of clubs were in operation, a pig club, a corn club, and a poultry club. Our first visit was made to a pig club member, who has two registered Poland China gilts. Their appearance indicated that great care and judgment had been used, first in selecting them, and then in feeding them. Both pigs were of the most approved type, and were finished in a way that would make any old show man sit up and take notice. After the contest they will be used in founding a purebred herd on that ranch, where the father has heretofore grown grades.

As poultry was not included in the supervisor's work for that day, we next visited a corn club member. Owing to the dry season the boys in this club are working at a disadvantage for a large yield, but they are sticking to their guns nevertheless; and it is expected that their better methods will be equally convincing as in favorable years. While their yield will be small, the neighboring farmers are working under the same handicap. And so we went from member to member, each with his problem and each welcoming advice.

The most impressive thing about it all was the interest and personal acquaintance with his crop that each boy displayed. Many of them have been born and raised on the farm but

it has taken this competitive spirit to bring out the enthusiasm which can be best recognized in youth.

But our companion advised us that this movement is not simply a boy movement. It is a man movement as well and to illustrate his point he related the story of a Napa county boy who grew corn three years ago for the contest.

By carefully selecting his seed and pursuing good cultivation methods he was able to grow a hundred bushels of corn to the acre while the average for the State is between 34 and 35. He is a prize-winner. He also became a corn seed king in that county, for progressive farmers began buying seed from him; and the corn yield of the entire county has been increased.

Another result of seed selection was in Ventura county where a bean club is in operation. An enthusiastic member reported that he had been counting the number of pods on his vines; and found one vine that carried considerably more than the rest of his patch. This set other members to counting pods, with the result that a retired farmer's interest was aroused; and before the end of the season a count showed that the retired farmer topped the list with a vine carrying several hundred pods. Now everybody in the district who could secure them has planted selected bean seed and a great increase in the bean yield in the entire district is expected.

Some idea of the way this movement is taking root may be judged from the fact that there are somewhere near 2000 boys enrolled this year, which also means the same number of farmers. Thirty of these boys will be taken east this fall, in a private car, visiting the farms in various agricultural centers. About 600 of them will be taken to the University Farm for two days. Besides the desire to have the best, these trips are the driving wheels of progress in the work. And the work has really only commenced, having been in operation but three years.

ROTATING ALFALFA WITH CULTIVATED CROPS.

[Written for Pacific Rural Press.]

To insure continued good crops of alfalfa on his 40-acre ranch in Stanislaus county, J. A. Goodall started a rotation system two years ago. The land had been pastured by his herd of registered Jersey cattle. In 1915, a crop of oat hay was followed by Egyptian corn. This year the land was again planted to oats in the winter and will be planted to beans for a summer crop.

Mr. Goodall believes that with this two-year rotation system, his land will grow better crops of hay, and it will not only have had a rest, but will also be cleaned of foxtail by the cultivation.

He is a firm believer in the value of old alfalfa for pasture. His herd of Jerseys average, at this time, a pound and a quarter of fat, alfalfa hay and pasture being the ration fed to all except a few on official test, which are being fed a light grain ration.



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STATIONARY WORK FOR FARM TRACTORS.

A feature of farm work that is somewhat overshadowed by the tractive uses of a farm tractor is the extent to which the machine can be used for stationary work, such as pumping, threshing, filling silos, sawing, etc. The well-informed farmer nowadays inquires carefully into the belt horse-power rating of

the farmer uses his tractor for pumping to irrigate his land after having checked, plowed, harrowed, and seeded it with the same tractor. Then when the water is drawn off and the rice is ready to cut, he uses his tractor to pull a binder or two, after which he again uses the belt pulley to run his thresher or separator. This practically keeps the tractor busy all the year round.



Tractor Pumping Water for Irrigation.

the machines under his consideration.

Some of the small tractors have a high development of horse-power available for belt work. The advantage of a portable power plant is obvious. Some California orchardists having several wells, have saved the expense of separate power plants by using a tractor to run from one well to the other, pumping at each.

Rice growing provides a cycle of almost continuous work for a small tractor. In some of the rice districts of California not accessible to water laterals or irrigating canals,

Many owners keep their tractors going day and night.

The illustration shows a Big Bull Tractor on the ranch of the Moulton Irrigated Lands Co. at Colusa pulling a 12-inch centrifugal pump. The photo shows the manner in which many small tractors are employed on farms for irrigating. Attention is called to the volume of water being lifted and the distinct clearness of the tractor parts in the photo, showing the freedom from vibration while running. The above company is providing employment for three Big Bulls.

TRACTOR DEMONSTRATION AT STATE FAIR.

[Written for Pacific Rural Press.]

One of this year's new features of the California State Fair will probably be a big tractor demonstration. Secretary Paine says that the State Agricultural Society has secured 40 acres of land just outside the Fair Grounds which may be used as a field for such demonstration.

The tractor demonstration is an established institution in the Middle West States, and is doing much not only to show the farmers the advantage and economy of tractor power and the various uses for which tractors are adapted, but is also helping the manufacturers to improve their tractor and tractor implements to meet the farmers' requirements.

There are a large number of manufacturers of tractors and tractor implements in this State; and most of the Eastern manufacturers are represented here. Therefore a California demonstration need not be second to any in the country in size and educational value.

The tractor and tractor implement people will no doubt furnish the material and program for a big and educational show of tractors in action.

STEAM-CLEANED DAIRY.

[Written for Pacific Rural Press.]

Steam is better than boiling water to sterilize dairy utensils, and is not much harder to get. In these days when our butter must be improved by improvements all along the line including the production of clean practically sterile cream, people are casting about for economical means of cleaning dairy utensils.

A. J. McPherrin of Imperial has about 110 milk cows whose milk he separates in a No. 25 De Laval separator. He sells the cream, and feeds the milk to hogs. Geo. V. Rude manages the ranch.

Utensils are cleaned in the separator building. This is screened, has concrete floor, reinforced with woven wire fencing, and is furnished steam from a 2 h.p. De Laval Little Giant upright boiler nearby. The boiler rests on a concrete platform and burns distillate through a Siebert burner. A 100-gallon distillate tank is located on a high platform nearby. Steam runs the separator and will probably run the Babcock tester which is to be installed. A vitrified sewage pipe carries the utensil wash water 300 yards away.

Announcing THE SANDUSKY TRACTOR "THE LITTLE FELLOW WITH THE BIG PULL"

and Special Wheel for Beet Plowing

The illustration below proves another of the many points of the universal usefulness of The Sandusky Tractor. The picture below shows The Sandusky Tractor equipped with our "special beet wheel" for Beet Plowing and pulling a 2-Row Beet Plow. This "special wheel" has been thoroughly tried out in the San Fernando Valley for the edification of the Beet Growers of California.

Does the Work of Five Good Teams and Men

THE SANDUSKY TRACTOR is adapted to your needs. The first logical operation on undeveloped land is clearing; then comes breaking, discing, harrowing, seeding, harvesting, threshing, shelling, filling silos, hauling crops to market and fertilizers to the farm, probably wood cutting and a dozen other operations in and about the place.

The Sandusky Tractor

is manufactured throughout in our own shops by the highest grade mechanics obtainable and our aim is to produce for you a dependable machine, capable of standing up under the severe use to which equipment of this kind is subjected, ensuring you of its being a lasting and profitable investment.

BOOK, "POWER ON THE FARM," FREE.

Write for a copy of the new 40-page edition covering the latest refined 1916 Model E, its uses, and containing other valuable information. Tell us fully about your power problems and we'll gladly help you solve them WITHOUT OBLIGATING YOU IN ANY WAY.

The Dauch Manufacturing Co.

SANDUSKY, OHIO.

205 N. Los Angeles St.,

Los Angeles, Cal.



LAYNE & BOWLER PUMP

Mechanically Perfect

This pump is ruggedly constructed to meet successfully the requirements of the most severe service. All castings and fittings of iron, bronze, brass and steel are made by skilled workmen under the supervision of foremen of long experience—men who have been with this company for years and know every phase of pump construction from A to Z. Every part is thoroughly scrutinized, inspected, tested and fitted before the pump is assembled ready to leave the shops in order that every thing may be absolutely perfect.

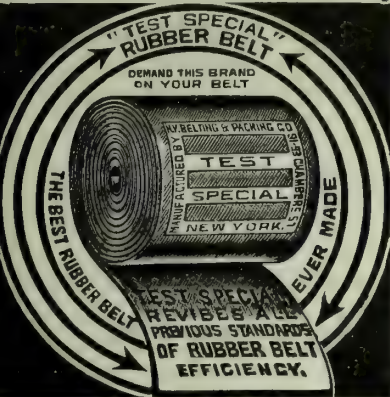
EVERY PROSPECTIVE WATER DEVELOPER SHOULD WRITE FOR OUR NEW, ELABORATELY ILLUSTRATED CATALOG NO. 25. IT DESCRIBES OVER TWENTY DIFFERENT STYLES OF LAYNE & BOWLER PUMPS. IT'S FREE.

LAYNE & BOWLER CORPORATION

900 SANTA FE AVE., LOS ANGELES.

Belting

That Must Make Good



When you buy a rubber belt you should know what service it will give you or have the belt service guaranteed by a responsible firm who will make good in case the belt falls down. Every belt-buyer should know how to judge a rubber belt, and we would like to send you a free sample of Test Special together with our folder that will tell you just how to judge a rubber belt so that you may know just what service you will get from any belt you buy.

Fill out the coupon and mail it to us and we will recommend a belt that we will unqualifiedly guarantee to do your work satisfactorily. We have had seventy years' manufacturing and selling experience.

NEW YORK BELTING & PACKING CO.

519 Mission St., San Francisco

Established 1846

FILL OUT THIS COUPON—MAIL IT TODAY

New York Belting & Packing Co.,
519 Mission St., San Francisco.
Send me samples of Belting that you will
guarantee to give satisfactory service on my
work and quote prices delivered at

Cal. _____

M.P. { Gasoline Engine _____
Steam Engine _____
Electric Motor _____

Diameter { Driving Pulley _____
in inches { Driven Pulley _____

Kind of { Cross _____
Drive { Straight _____
Perpendicular _____

Width of Belt _____ Ply _____

Distance Between { _____
Centers of Pulleys { _____

Revolutions per Min. { _____
of Driving Pulley { _____

Kind of Mach- { _____
inery Driven { _____

My Dealer's Name _____

My Name _____

Address _____

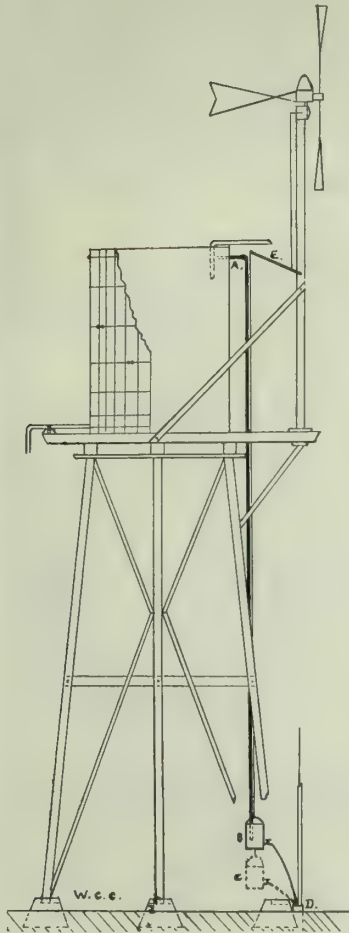
A pocket memo booklet giving speed and power tables will be sent FREE to all who mail this coupon.

HOME-MADE AUTOMATIC WIND-MILL CONTROLLER.

[Written for Pacific Rural Press by
Wm. Curtis Clark.]

Patented devices for controlling windmills generally release by tripping a dog or trigger, which allows the tail to swing back with a bang and jar so that mill men generally discourage their use.

The device described lets the mill



The windmill fills an old oil can with water, which shuts it off. The water drains out slowly, which releases the mill again. A is overflow pipe to can. B, can in position when empty. C, can when full. D, well casing. E, controlling lever.

on and off, even more gently than by hand. If the tail spring is stiff, it may be necessary to put a weight into the can as a partial counter balance.

The materials necessary to make the automatic controller are, one coal oil can, one common 3/4-inch hose bibb, two rubber washers and lock nut, short length of hose with bibb connection and 3/4-inch overflow pipe.

Rig a five-gallon coal oil can with wire bail handle and fasten a faucet (bibb) into the side near the bottom. Connect a short piece of hose to the faucet so it will reach into the well casing when the can hangs on the control wire.

Fasten the can on the control wire at a handy height so the hose will slip in and out of the casing freely; then put an overflow pipe into the top of the water tank; let it come out and extend straight down into the coal oil can.

When the tank is filled, the water runs down the overflow pipe and gradually fills up the can. The increasing weight on the control wire pulls the shut-off lever and stops the mill.

The faucet valve in the can may be turned as desired, to drain into the casing, thus timing the outflow of water in the can either fast or slow according to the consumption of wa-

ter in troughs or elsewhere.

The water from this faucet runs all the time, draining into the well casing to avoid mud. When the tank overflows, it fills the can much faster than the faucet empties it. When the weight of the can full of water has shut off the mill, the water runs out slowly and the tail spring makes the mill get busy again.

Tank Frame Construction.—Note that braces of tank house frame come only flush with outsides of timbers so they can be boarded over tight when desired. Note also that ends of 6x6 timbers under the 2x12 tank platform rest directly over the tops of legs. The centers of these 6x6's are further supported by a 6x8 cross-wise and it resting on the center legs of the other two sides of the frame.

Notice the corner braces to and under the windmill mast, which is set directly over the well but beside the tank with good clearance.

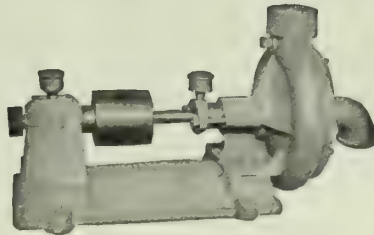
Self-Draining Pedestals.—The legs are set in concrete pedestals, but unlike the usual system, which is to set them in a hole in the concrete. Such a hole continually holds moisture and soon rots the legs.

Here the pedestal has a depressed corner on its upper surface so the leg would shove against raised concrete shoulders on the two outer sides. All moisture drains away from the other two sides of the leg. A center post would drain from only one side but would be set in the center of its pedestal.

Napa grapes are estimated at 35 per cent of normal.

THE WINSBY PUMP

Our
New
1916
Type
Pump



Best
Model
for Low
Lift
Pumping

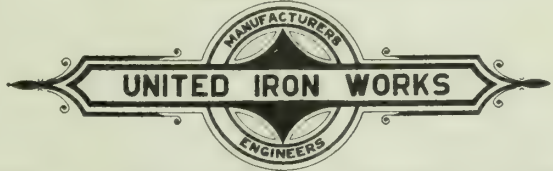
Size.....	1 in.	1 1/4 in.	1 1/2 in.	2 in.	F. O. B. CARS
Price	\$16.00	\$20.00	\$25.00	\$30.00	OAKLAND

WRITE FOR FOLDER 55.

Larger Sizes at Proportionate Prices.

Complete Pumping Plants of Any Size or Type Furnished and Installed.
WE MANUFACTURE—Pumping machinery of all kinds and for all purposes. Mining, Milling, Concentrating and Rock Crushing Machinery, Ice and Refrigerating Machinery, Cold Storage Rooms and Counters. Water Wheels, Dredges and Hydraulic Machinery. Fire Hydrants and Cast Iron Fittings.

Write for descriptive folders and prices.



GENERAL OFFICES AND WORKS: OAKLAND, CALIFORNIA.

ALWAYS ON TAP!

When You Want It, and Where You Want It

A CITY WATER SYSTEM in YOUR COUNTRY HOME

Giving Permanent and Real Satisfaction.

REAL satisfaction is having water where you want it and when you want it, available instantly at the turn of a faucet. Carrying water from the source of supply to the place of use is real drudgery.

Kewanee Water Supply Systems

give an unlimited supply of pure fresh water—any place—any time wanted. No overhead tank where the water becomes warm or stagnant in Summer. Kewanee Water Systems are the original air pressure systems.

A SYSTEM TO FIT ANY NEED

No matter what your water requirements—no matter what your problems of Supply, there is a Kewanee System that will meet them. They are made for hand, engine or electric power, for shallow or deep well—with pressure tanks of any capacity. Built with the same care and as dependable as the big city service station equipments.

Simple to operate—hard to put out of order—requiring a minimum of attention. Ready to run when uncared, easy to install.

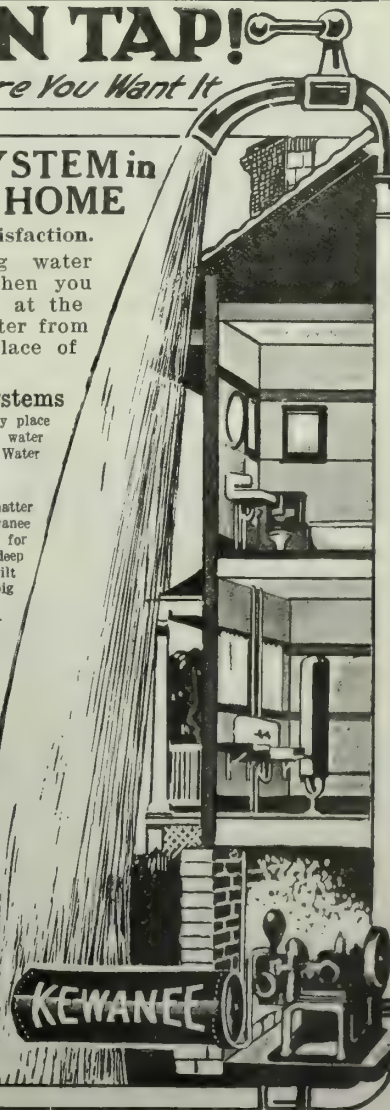
Write for Bulletin B—telling all about the Kewanee System.

Simonds Machinery Co.

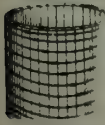
Sole Agents and Distributors.
117-119-121 NEW MONTGOMERY ST.,
San Francisco. Phone Kearny 1457.



Agts. also for Lullwater Deep Well Pumps, Hill Deep Well & Power Pump, Centrifugal Pumps, Deming Pumps.



REDWOOD TANKS—SILAS



Thirty-five years in this business in Stockton.—A 500-gallon tank, \$8.00. A tank 6 ft. x 2 1/2 ft., \$7.50. Other tanks equally cheap. You will save 10% to 25% by dealing with me. All sizes in stock. Clear dry redwood direct from the mill by vessel. Write for prices today. Latest improved machinery. Doors, Mouldings. Phone 2957. R. F. WILSON, STOCKTON, CAL.

General Agricultural Review.

DECIDUOUS FRUITS.

Sonoma prunes are better than expected, being of good size.

Sonoma walnuts have the biggest crop ever, according to O. E. Bremner.

Frost damaged Tuolumne walnuts somewhat, but apples promise a fair crop.

Most of the peaches on New York market June 23 were from Georgia and Arkansas.

Packers are reported buying old dried peaches at 5 1/4 cents and new crop at 6 cents.

Napa prunes and pears are estimated now at 40 and 50 per cent normal respectively.

Prune dropping in Santa Clara is reported not to have been so heavy this year as usual.

One company is said to have bought 50 cars Elbertas around Armona at \$20 per ton.

Gravensteins will be moving from Sonoma county next week. The biggest and best crop ever, is reported.

Prunes have been dropping heavily in the Chico district. Growers here are predicting a 7-cent basis.

The growers' cannery at Kingsburg has sold all of its last season's pack and expects to begin this season's run Jul. 15.

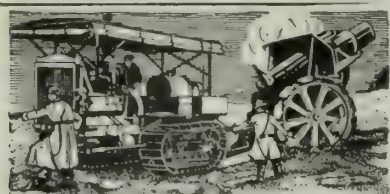
Many jobbers and retailers of canned fruits have short supplies as indicated by orders for shipment as soon as packed.

Business men of San Jose raised \$1000 in a few minutes for promotion work of the prune and apricot growers' organization.

It is reported that shipping companies have bought 100 cars fresh peaches in Visalia and Tulare districts at \$14 to \$17 a ton.

The new prune and apricot growers' organization is not committed to the policy of selling dried fruit at auction or any other way as yet.

A 6-cent prune basis was unanimously decided reasonable for growers to demand this year, at a meeting of perhaps 150 growers at San Jose June 23.



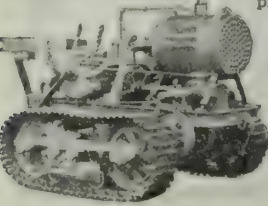
Pulling The Big Guns In Europe

weighing hundreds of tons, over almost impassable roads, are found only tractors of the "Creeping Grip" type. Round-wheel tractors are helpless before this gigantic task. *Your tractor should be a*

BULLOCK CREEPING-GRIP Tractor

Travels on its own track—lays it as it goes. No soil too loose or wet—no ground too rough for the Bullock. No slipping—no miring—no spinning wheels—no wasted fuel—every ounce of power is exerted at the drawbar in PULL.

Best for tilling—can't pack the soil—will plow that "soft field." Unequaled for road work—furnishes stationary power without blocking. Very easy to operate, the most economical to buy, results considered. Our 12-20 Creeping Grip is the ideal tractor for the orchardist, built low and narrow and turns in its own length, patterned exactly after our larger and higher priced machines.



Write for particulars and free "Creeping Grip" Book.

BULLOCK TRACTOR CO.

1805 Diversey Parkway
CHICAGO

Apples arriving in San Francisco infested with codling moth larvae will be confiscated or returned to original shipper according to San Francisco horticultural commissioner Dudley Moulton.

Santa Clara canning apricots have been bringing \$50 to \$55 per ton and there have been some sales of dried apricots at 13 1/2 cents with at least one at 14 cents, reports the Growers' Information Bureau.

Between June 8 and 20, \$1720 was subscribed to the Cal. Peach Growers, totaling \$765,000. It is believed that if the full \$1,000,000 of stock is secured before dried peach marketing, 6 cents can be secured.

For four years, Harry Adams of the Cal. Fruit Distributors has tried to get from railroads the privilege of stoppage in transit of carlots of fruit for partial unloading without extra charge. Several eastern railroads have recently agreed.

GRAPES AND SMALL FRUITS.

Blackcap raspberries are being grown on a 5-acre ranch in Los Angeles county.

Three hundred and fifty raspberry and Loganberry pickers are needed in Whatcom county, Wash.

Sonoma winegrape vineyards have been very extensively replanted with about 1/2 prunes and 1/2 apples.

On the A. B. Humphrey ranch in Sacramento county a 20,000-crate crop of Tokays is expected where the vines had been irrigated for six days before the frost.

The Associated Raisin Co. prices for foreign shipment, recently issued, are 10 per cent higher than a year ago. During May, 2600 tons of raisins were exported.

About 70 per cent of the Emperor crop is reported signed up at \$40 to \$50 per ton and about as much of the Malaga crop, at \$20 to \$25. This is better than last year.

Success of Sebastopol Berry Growers in extracting Loganberry juice from about 12 tons of berries per day, is stimulating interest in Humboldt in Loganberry culture.

A hundred and fifty carloads of strawberries have been sold for delivery to North Dakota by the Hood River Apple Growers' Ass'n and the White Salmon Fruit Growers' Union.

John D. Rockefeller recently won first prize for the largest strawberries at the spring exhibit of the Tarrytown Horticultural Society. Some of them were 7 inches in circumference.

Strawberry root weevil has killed hundreds of acres of plants in several counties of Washington. Two-thirds of an ounce of carbon bisulphide in a saucer every 5 feet over infested ground left 6 hours under a canvas made gas tight by painting with linseed oil, is recommended.

CITRUS, OLIVES, AND NUTS.

Thrips are responsible for the light almond crop in certain sections this year, according to H. B. McCoy of Arbuckle.

It is announced that the Associated Raisin Co. has offered the use of its selling force to help the olive growers.

A San Francisco orange dealer was recently caught grading culls and packing them in wrappers and boxes under a well-known first-class brand.

Citrus shipments from Southern California for the week ending June 23 were 1022 cars, totaling 28,174 cars for the season from this district.

Four hundred olive pickling tests were made during last season by W. T. Oglesby of the University of Cal. Lye of 2 to 4 per cent strength was found best to destroy bitterness.

Many oranges and lemons infested with red and purple scale have been



The BIG BULL Tractor

You see them everywhere

Last year we told you what the BIG BULL could do.

This year your neighbors will tell you what the BIG BULL has done for them, and is still doing.

Ask us for their names.

\$645 f.o.b. Minneapolis

Plows 7 to 9 acres in a ten-hour day. Self-Steering in Plowing. Subsoils the furrow, increasing crop yields.

20 H. P. on the belt.
Will run a 7-in. Centrifugal Pump.

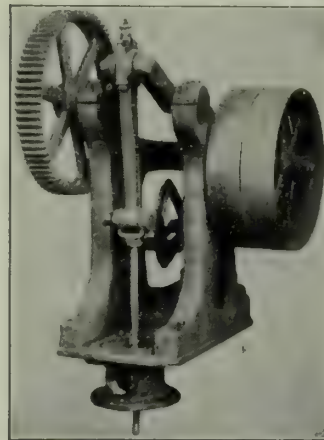
The BIG BULL will pull a 24-in. separator fully equipped.

Write Dept. A-8 for the monthly Bull Tractor Bulletin.

More Bull Tractors have been sold to farmers than all other makes of small tractors combined.

HUGHSON & MERTON, Inc.,

530 Golden Gate Ave., San Francisco. 329 Ankeny St., Portland. 823 Railroad Ave., Spokane. 1229 S. Olive St., Los Angeles. 806 E. Pike St., Seattle.



WILSON

Stroke, 12 inches.

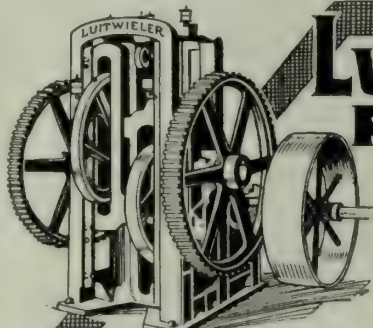
Single Acting Pump

This pump is constructed along the same lines as our **Uniflow Duplex** pumps. Cast Steel Crankshaft, Malleable Links and Connecting Rod, Single Piece Frame, Straight lift, device which avoids slides, guides, beams, etc. Will do all work up and including 3 horse power and this without breakage or unreasonable wear. So simple any one can install.

PRICE, \$75.00

WILSON & WILLARD MFG. COMPANY

15th and Santa Fe Ave.
Los Angeles, Cal.



LUITWIELER PUMP

SAVES 20% to 80% POWER over other deep well pumps. No method of lifting water is so cheap. No jar, no noise, no back lash on gears, no loose swinging joints, no pits. Note the simplicity. Everything compact and all working parts easily accessible. The mechanism is accurately balanced—no part subjected to any undue strain or excessive friction.

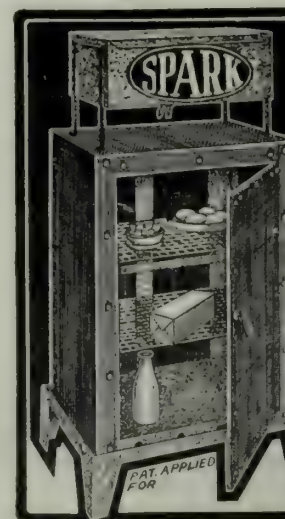
Write for our 2 Free Irrigation Booklets.

LUITWIELER NON-PULSATING PUMPS.

are in use all over the United States by the big railroads, manufacturing corporations, city and town water works, and up-to-date ranches. Four highest Gold Medals awarded Luitwieler Pumps at San Francisco and San Diego in 1915.

Luitwieler Pumping Engine Co

711-13 N. Main St., Los Angeles.
San Francisco Agts: Simonds Machinery Co., 117 New Montgomery.



NO MICE OR RATS EXPENSE MOULD OR DECAY

SPARK AUTOMATIC COOLER

A practical household necessity. No family should be without one. Will pay for itself in one season. Butter, Milk, Eggs, Fruit, Meat Vegetables, can be kept cool, wholesome, sanitary, in the hottest weather. Constructed of heavy galvanized iron—does not absorb moisture like wood and become foul lined with galvanized hardware cloth—keeps out mice and rats. Covered with heavy brown burp, easily replaced. Heavy retinned wire shelves—thoroughly sanitary. Made in 3 sizes. Send for Descriptive Circular.

Keeps food cool clean and wholesome

Manufactured by
HAMMER-BRAY CO
OAKLAND CALIFORNIA

received in San Francisco but will hereafter be condemned by the new horticultural commissioner, Dudley Moulton.

The Cal. Fruit Growers' Exchange sales agents of Boston, New York, Chicago, and Minneapolis recently told a meeting of Porterville orange growers that it is of utmost importance that they safeguard the markets against early shipments of immature fruit.

MISCELLANEOUS.

The fourth reader in elementary schools of Cal. is to have 50 extra pages dealing with modern farming.

Imperial county bees, imported to pollinize cantaloupes, permit export of scores of cars of honey every year.

The official sparrow destroyer of San Diego got 323 birds during his first month. He got 5 cents each. Later the price rose to 10 cents.

An attendance of about 4300 students, or three times as many as 5 years ago, was expected for the University summer school at Berkeley, June 26 to Aug. 5.

The California Highway Commission is mailing a bulletin including a 30-inch map showing proposed and completed State highways in Cal. Anyone may have a copy free by writing the commission at the Forum Bldg., Sacramento. Many picturesque scenes and descriptions are given, indicating the engineering triumphs of the Highway Commission and the usefulness of their work.

GRAINS AND FIELD CROPS.

Barley opened at \$22 a ton at Kings county shipping points.

Two hundred acres of wheat burned near Delano last week.

Stockton bean acreage is increased 50 per cent as now estimated.

Tuolumne grain hay is of finest quality well filled with plump grain.

Several hundred acres of grain in Yolo county were recently burned.

Sonoma lowland hay is fine, but the total crop is estimated at 50 per cent.

About 250 tons of stacked hay burned near Tulare recently. No insurance.

The Delta onion prices are the best in years and the onions of uniformly good size.

It is estimated that 3,000 cars of cantaloupes will move from Turlock this season.

California carlot cabbage shipments totaled 280 for this season up to June 20.

Napa lowland hay is the best seen this year by a Pacific Rural Press representative.

Forty to 50 cars of ice are used per day for shipment of Imperial Valley cantaloupes.

Wheat in the Huron region is estimated at 3 to 6 sacks per acre, with a few 8-sack crops.

Dinuba watermelon acreage is light, and the early arriving melons are bringing good prices.

Total vegetable shipments from southern Cal. for the season to June 23 amounted to 4,449 cars.

Blackeye beans were not so extensively planted this year as last on account of the large carryover.

Widespread acreage of hops in Sonoma and Mendocino counties has been interplanted with prunes.

A gasoline explosion started a fire in Merced county which swept about 2000 acres of grain and stubble.

Carload potato shipments in Cal. this season until June 20 totaled 473 as against 8308 or more for U. S.

Sudan grass makes hay equal to timothy and of much higher yield, as determined by the Arizona Expt. Sta.

The Growers' Committee of Fallon, Nevada, vicinity are campaigning for a maximum 1917 sugar beet acreage.

California has 14,935 acres of cantaloupes this year. The next

highest figure is 6,000 acres in Georgia.

The Manteca cannery started its run this week with beans. Orders for tomatoes already exceed last year's pack.

Florida had shipped 989 carloads of watermelons before June 20 as against 1 from Cal. according to U. S. Dept. Agr.

Aerial potatoes planted by J. A. Smith of Tulare county produced a quart of tubers which this summer produced 83 pounds.

Express shipments of Merced tomatoes totaled 70,160 pounds June 22, all to California points. Bell peppers also are moving strong.

The Biggs Rice Experiment Station is producing enough seed of the

new variety which ripens 3 weeks ahead of Waterbune, to seed 20,000 acres.

Pasture and grain land seven miles wide and 12 miles long in Glenn county was burned last week. About 20,000 sacks of grain was lost. One-third insured.

Goleta-Carpinteria lima bean growers hope that in the few places where they have a poor stand, the earliness of the season will permit runner pods to ripen.

Cantaloupe carlot shipments from California points totaled 2642 for this season until June 20 out of a total for U. S. of 2702. Florida and Ga. are the competing States.

The Southern Pacific Co. shipped out of the State about 400 carloads

per day of perishable farm products during the week June 11 to 17 besides about 75 cars per day within the State.

To prevent harvester and threshing machine fires, a fan has been invented by a Washington man to attach to the separator to remove dust and smut which have been found explosive. The smut can be destroyed instead of spread to infest the fields.

In the 15 principal melon producing States this year, the U. S. Dept. Agr. reports watermelon acreage at 100,965 this year and 98,508 last year; cantaloupes 41,273 this year and 41,981 last year. Texas and Florida each have about 4 times as many acres of watermelons as California.

1819 Miles in 24 Hours

As far as from New York to Denver

With a Hudson Super-Six

The Supreme Endurance Test

The Hudson Super-Six, in many a test, has proved itself the greatest car that's built.

No car has ever matched it in hill-climbing. No other stock car ever went so fast. None ever went so far at top speed. And no motor of its size ever showed such reserve power.

But here is a record which perhaps means most to farmers who buy cars.

Best Record by 52%

A Hudson Super-Six with stock chassis was driven 1819 miles in 24 hours on the Sheephead Bay track on May 2nd. The average speed was 75.8 miles per hour.

That car, in a single round of the sun, went the distance from New York to Denver. It went 52 per cent farther than any other stock car had ever gone in that time.

One man drove it all the way. No man could do that in a car which was not vibrationless.

That man went farther in 24 hours than a man ever traveled before.

50 Miles in One

Some engineers figure that one mile at racing speed equals 50 miles of ordinary driving, in wear and strain on motor.

This car had run 2,000 miles before that test, at average speed of 80 miles per hour. So this 24-hour run made 3,800 miles which the car had been run at top speed—as high as 102 miles per hour.

Yet no part or bearing, when the engine was inspected, showed any appreciable wear.

The Thing You Want

What you want in a car above all else is reliability. And that's what these tests are proving.

It would take ten years of road work, perhaps, to show what we prove in a few days of speed work.

In all our tests we use a stock chassis.

The motor is exactly the same as in every Hudson Super-Six. So every man who buys a Super-Six gets the same super-endurance.

A Patented Motor

The Super-Six motor is a Hudson invention, controlled by Hudson patents. The principle which gives its utter smoothness is entirely new. That is why it out-performs any other car that's built. Or any car that can be built.

It develops 76 horsepower from a small, light Six. That is 80 per cent more than old types.

You rarely use that power. In ordinary driving you run at half its capacity, so the motor is never strained.

But the owner of a Super-Six knows that he has the power. He knows that his car is a master. He knows that in speed, in hill-climbing, in quick pick-up, no car can do what his does.

He takes pride in those facts. But his chief satisfaction lies in the car's endurance. He knows that his car will last. That another car at half the price might cost more in the long run.

Don't buy a fine car until you know the Super-Six. You would surely face years of regret.



7-Passenger Phaeton, \$1475 at Detroit
Seven other styles of Bodies

Hudson Motor Car Company
Detroit, Michigan

Rape Pasture Makes Quick Pork.

[Written for Pacific Rural Press.]

The practice of putting rapid gains on a hog is increasing all over the State, through better feeding and better breeding.

Often, it is claimed that such gains may be profitable for the small grower who can give more individual attention to his hog lots, but that it is not economical for the large grower.

Experience on the Vina ranch of the Stanford University does not warrant this assumption, however; for while their swine number into the hundreds, they make both quick and economical gains.

An illustration of this was shown in April, this year, when a large number of October pigs were seen with an average weight of 170 pounds.

Drills Rape Sept. 1.—These hogs had been fed liberally a ration of shorts, skim milk, ground barley, and corn, and rape pasture. Manager Houseman states that excellent results have been obtained with rape as a winter pasture, drilling the seed in rows about September 1. This provides pasture for the fall pigs until June; and when supplemented with plenty of grain, makes quick and economical gains.

But good feeding is not all that makes the swine herd on this ranch a paying one. The housing system as diagrammed in our issue of April 15, reduced mortality to the minimum at farrowing time.

SIXTY-SEVEN PER CENT PROFIT IN 112 DAYS.

[By Harold Spaulding, Porterville, Cal.]

On February 19, 1916, the contest started. As each fellow had to weigh his pigs at the start, I got two little pigs into a small pen and weighed them in a barley sack.

I had chosen a registered Duroc-Jersey from a litter of eight and a Poland China grade from a litter of six. The Duroc-Jersey was four and one-half weeks old and weighed 39 pounds. The Poland-China was eight weeks old and weighed 54 pounds.

As the pigs were small, they did not require a great deal of feed, and I let them run awhile on alfalfa pasture. In addition to this, I gave them all the skim-milk they would drink. In a couple of weeks I took them off the alfalfa and penned them up. I made a self-feeder and fed rolled barley, dry. Besides the skim-milk now, I fed a great deal of green barley. When they became tired of this diet, I started feeding middlings and rolled wheat. The rice middlings were mixed with milk and the wheat was fed dry in the self-feeder. The rice middlings were mixed into the milk, one part of rice to four of milk. As time elapsed they grew

tired of rice middlings, milk, and rolled wheat, so I got some tankage. They gained perceptibly on this feed until the close of the contest. Following is my account with the pigs:

Original value	\$ 5.50
Cost of all foods given	10.50
Cost of pasture	10
Caring for pigs (15c. per hr.)	2.80

Total cost	\$18.99
Final wgt. 425 lbs. @ 7½c.	31.87

Net profit\$12.88
[Harold Spaulding will receive a registered bred sow for this work in the Porterville Boys' Pig Club.]

CORN AND HOGS ON FRUIT RANCH.

[Written for Pacific Rural Press.]

Among the orchardists of Napa who are growing purebred hogs as a by-product is the firm of H. E. Boudier & Son.

There are 30 acres in the ranch, ten in young orchard, and the balance in use for hay, pasture, and alfalfa.

Corn, pumpkins, and alfalfa are the principal crops grown on the ranch for hogs, both the corn and pumpkins being interplanted in the young orchard. Big yellow dent corn is planted and yields on the average one and a half tons to the acre. Last year pumpkins were planted in the corn but did not yield as well as expected, probably due to the shade of the corn, so this year they have been planted in a separate field.

Only two acres are in alfalfa, this being irrigated by large sprinklers on account of shortage of water. It is cut green to be fed during spring, and fall, with corn, ground barley, shorts, and either tankage or skim milk.

During winter when the green alfalfa is not available, pumpkins furnish succulent feed. By this system 40 to 50 purebred Durocs of all ages are kept.

SMUTTY WHEAT FOR HOGS.

To the Editor: Is wheat with smut in it safe for hogs if boiled?—J. P. T., Roseville.

[Answered by Prof. J. I. Thompson, University Farm, Davis.]

[Smut in corn is generally considered rather dangerous if animals get much of it. It is not uncommon for smut in the various grains, especially wheat, to contain ergot, and this is likely to cause abortion. However, where wheat is well mixed and particularly boiled, there should be no undesirable results from feeding it.]

GRAIN SORGHUM SILAGE.

[Written for Pacific Rural Press by D. L. Schrader.]

Feterita and Egyptian wheat, both badly frosted, were used by Claus Popp of Stanislaus county last fall to fill his silo. Cows cleaned up the feterita in good shape, but refused the Egyptian wheat, perhaps because it was frost bitten.

Barley was planted on the feterita land this season. There was no trouble plowing, for the feterita rows were three feet apart; and a 12-inch moldboard plow turned the roots completely under. The barley hay showed only an occasional bunch of roots. Mr. Popp planned to plant the piece to Indian corn to fill his silo this fall.

Grapewild Farm Berkshires



Grand Leader 2nd.

WORLD'S FAIR GRAND CHAMPION Berkshire Boar is bred in Champion lines—won championship honors in one of the greatest Berkshire shows ever held—sires champions, and we have championship material for sale. Our 75 brood sows have been selected through six years of careful breeding. Choice gilts bred to the Grand Champion for sale as well as boar pigs of Grand Leader breeding. Visitors welcome. Satisfaction guaranteed.

GRAPEWILD FARMS

A. B. HUMPHREY, PROP.,

Escalon,

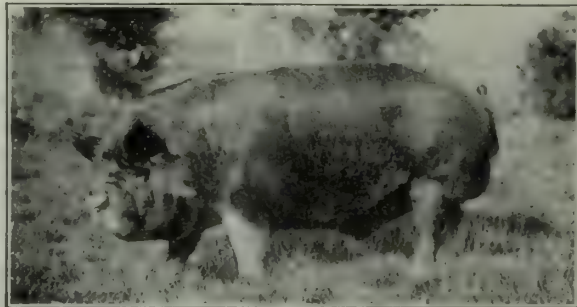
San Joaquin Co., Cal.

(Escalon is 22 miles east of Stockton on the Santa Fe and also on the Tidewater Southern Rys. Autos take paved Mariposa Road out of Stockton direct to Escalon.)

The Greatest Sale of RIVALS CHAMPION BEST BERKSHIRES

CARRUTHERS FARMS, MAYFIELD, SANTA CLARA CO., CAL., AUGUST 2, 1916.

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WORLD'S CHAMPION BEST, 127963, The World's Greatest Living Boar.

His sons have never been rivaled in the show ring. His daughter, Rival Lady 33rd, was for 3 years Grand Champion of America, and during her career produced two litters per year. At the Panama-Pacific International Exposition show the blood of this great boar won for Carruthers Farms the Premier Exhibitors' banner.

40 head of the 47 offered in the sale are either sons or grandsons, daughters or granddaughters of the Great Boar. One of the leading breeders of the Middle West has pronounced this sale the greatest Berkshire Sale made by one breeder in recent years.

A WONDERFUL OPPORTUNITY TO PURCHASE A FOUNDATION HERD.

Catalog ready next week. Ask for it now.

Col. W. H. Hord, Auctioneer,
704 Market Street,
San Francisco.

Wm. Carruthers, Prop.
513 Hearst Bldg.,
San Francisco.

BIG TYPE POLAND CHINAS

Gilts from Weanlings to one year old. Bred or open. Boars from weanlings to 8 months.

THE BROWNING STOCK FARM

W. H. BROWNING, PROP.

WOODLAND, CAL.

Digester Tankage

Send for sensible folder on feeding hogs

Western Meat Company

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Tamworths and Duroc-Jerseys

We can fill orders for mature stock and weanling pigs of both sexes. This is the largest herd of TAMWORTHS in the State. Our Stock is sure to please.

Write or call and see us.

SWINELAND FARM,

W. O. PEARSON, Prop.

Woodland, California

GET STARTED RIGHT

Registered DUROC JERSEYS

Service Boars from Prize-Winning Stock are money makers.

They grow faster. Send today.

NEW ENGLAND CALIFORNIA CORPORATION,

Ripon, California.

State Dairymen Invited to Humboldt.

[Written for Pacific Rural Press.]

A SUCCESSFUL DAIRYMEN'S ASSOCIATION.

If dairymen have any doubts as to the advantages of co-operative associations they should visit Humboldt county and get in touch with the work that has been done since 1912 by the Humboldt County Dairymen's Association.

The original objects of the association as set forth in the by-laws were: to increase the quantity and improve the quality of dairy products; to encourage the use of purebred sires; to co-operate in purchasing seed, feed, fertilizers, etc.; to study needs of soil and increase productivity; to protect health of stock; to promote sanitation in dairies; to hold regular meetings to discuss matters of interest to dairymen; to occasionally engage speakers from abroad and to promote in all possible ways the interests of the dairymen of Humboldt county.

R. H. Flowers, of Ferndale, secretary of the association, points out that the association has done its biggest work in the purchasing of seed for its members—better seed than they formerly bought locally, and at a price much lower.

Each month a meeting is held at which anything of importance to the dairymen of the community is considered; and at the annual meetings a banquet is given and new officers

elected. These frequent gatherings, with the annual picnic in the summer, in which speakers from other parts of the State participate, serve to keep the members in touch with both local and State-wide conditions, such as feed, markets, legislation, and breeding.

While originated by the creameries, the association has lent its support to the campaign against turnip feeding in order that Humboldt county butter might not gain a bad reputation in the large markets. Through their organization they have been able to instruct the members of the legislature from their district in regard to all State dairy legislation; and have played a prominent part in local dairy legislation.

Last year, members of the association, with the local creamerymen, were instrumental in getting the California Creamery Operators' Association to hold its 1916 convention at Ferndale. In order to further strengthen their own association, invitations have been extended to dairymen all over the State to be present at the September convention in order that plans may be discussed and action taken in the formation of a State Dairymen's Association. Doubtless leading dairymen from all dairy sections will be present, as an association of this kind would be very desirable.

Breeding 300 Pound Heifers.

[Written for Pacific Rural Press.]

Although he has been using registered bulls over 20 years, and now has a herd of dairy cows that he expects to average 400 pounds of fat this year, J. W. Coppini of Humboldt county is of the opinion that the "most remarkable improvement in a herd comes from the first cross of a purebred sire on mongrel cows."

The heifers from this cross often do better with their first calf than their dams. While he has been able to work a gradual improvement in his herd by use of registered Jersey bulls, he has never been able to make such large increases in succeeding crosses, partly because there is not so much room for improvement.

But registered bulls are not the only factors in building up a high producing herd of dairy cows, according to Mr. Coppini. For the last 12 years he has been weighing and testing his milk and by this means he has been able to keep boarders out of his herd. During the last three years he has been a member of the Ferndale Cow Testing Association, his highest average being 367.5 pounds of fat per cow.

Mr. Coppini makes two cullings in his foundation cows, the first one being made in the calf lots, when the heifers from the highest producing

cows are selected and the others disposed of.

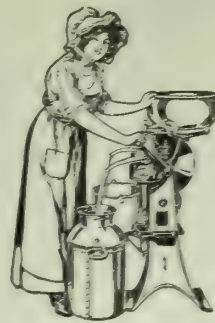
After selecting the most promising ones, they are fed whole milk for a time and gradually the ration is changed to skim milk and pasture. As soon as the carrot and beet crops are ready to harvest in the fall the calves are fed a liberal ration of those with hay and pasture, the object being to always keep them growing.

After freshening they are entered in the cow testing association; and unless some unfavorable condition arises, they are expected to produce 300 pounds or better during their first lactation period of ten and a half months. Mr. Coppini believes that a cow should have six weeks rest between calves. Those not coming up to this mark are disposed of, for Mr. Coppini says "I can't afford to feed a cow that won't make better than 300 pounds of fat a year."

A large portion of the present herd are purebreds, three registered cows having been secured in 1902 and their number gradually increased by breeding since then.

To demonstrate the practicability of his system with herds composed entirely of grade cows, he points to the results secured with another herd of 65 cows of which he is part owner.

This herd was established three years ago at which time the average was 280 pounds of fat. Since then they have been entered in the cow testing association and bred to purebred sires. Last year the average for the herd was 305 pounds of fat. This will be still further increased by breeding and selection.



You need a new DE LAVAL SEPARATOR NOW

1st If you are still using some gravity or settling process of creaming---

BECAUSE YOUR WASTE IS greatest and quality of product poorest in mid-summer when the milk supply is heaviest.

BECAUSE THE SKIM-MILK IS poorest without a separator in hot weather and often more harmful than helpful to calves.

BECAUSE TIME IS OF GREATEST value on the farm at this season and the time and labor saving of the good separator counts for most.

BECAUSE THE WORK OF AN improved De Laval Cream Separator is as perfect and its product as superior with one kind of weather as with another.

2nd If you have a very old De Laval or an inferior separator of any kind---

BECAUSE THE LOSSES OF THE poor separator from incomplete skimming and the tainted product of the hard-to-clean and insanitary separator are greatest at this season.

for than any other, and you cannot afford to waste time these busy days "fussing" with a machine that ought to have been thrown on the junk-pile long ago.

BECAUSE OF THE GREAT economy of time at this season in having a separator of ample capacity to do the work so much more quickly.

BECAUSE THE DE LAVAL Separator of today is just as superior to other separators as the best of other separators to gravity setting, and every feature of De Laval superiority counts for most during the hot summer months.

BECAUSE AN IMPROVED DE LAVAL is so much simpler and more easily handled and cared

These are all facts every De Laval local agent is glad of the opportunity to prove to any prospective buyer. If you don't know the nearest De Laval agency simply write the nearest main office, as below.

De Laval Dairy Supply Co.

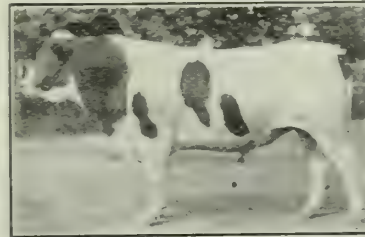
LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST. We specialize in Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Praying Outfits. Send for special catalog.

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50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER.

GRANDSONS OF TILLY ALCARTRA



Prince Alcartra Korndyke, Best bred son of Tilly Alcartra.

At prices within reach of every Breeder and Dairyman.

When you buy a son of our herd sire, Prince Alcartra Korndyke, you get more than a Holstein bull with registration papers—you get a grandson of the world's greatest milk cow out of a high-testing A. R. O. dam. Our herd of females has been developed into one of the best in the State.

Our supply of these young sires is always limited, but we have a few now which we are offering at very reasonable prices.

Write us at once, or call and see the herd.

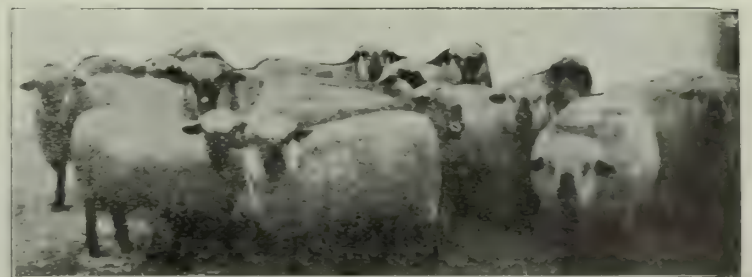
J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

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DAVIS, CAL.



SHROPSHIRE and MERINO SHEEP, and SHORTHORN CATTLE

Shropshires sired by rams imported by me from England. Yearling Rams and Ram Lambs. Individuals or carload lots.

A Few Shorthorn Bulls for Service.

Shorthorn Bulls

and

::: Heifers :::

On April 21st we arrived from Missouri with a carload of choice registered Bulls and Heifers.

INSPECTION INVITED.

H. L. & E. H. MURPHY, Perkins, Sacramento Co., Cal.

With the Livestock Men.

SWINE AND SWINE BREEDERS.

S. S. Southworth of Napa recently sold three registered Duroc gilts to H. V. Du Bois of Napa and a service boar to the State Reformatory at Yountville.

"Feeding and Management of Hogs" is the name of a new circular by Prof. J. I. Thompson. It may be had free by addressing him at University Farm, Davis.

J. P. Daggs of Modesto recently sold a Duroc boar and 12 sows to Mrs. Cliff Collins, Phoenix, Ariz., and a boar and 6 sows to Geo. Conkle, Imperial, Cal.

C. T. Lynn of Modesto writes that he has decided to devote all of his time to Poland China hogs and will therefore dispose of his choice foundation herd of Holstein cattle.

Pig club work has been carried on during the year by the U. S. Dept. Agr. in connection with agricultural colleges of Ala., Ark., Cal., Ga., Ind., Ky., La., Okla., Ore., and Texas.

The Hopland Stock Farm has recently imported a two-year-old Rival Champion boar from Iowa Farms that will be used as a herd sire at the Hopland ranch.

Carruthers Farms reports the sale of two Berkshire sows and a boar to H. H. Gable of Woodland, one boar to Willowmoor Farm, Redwood City, and one sow to A. Bache of Hollister.

Nate Hauck of Alton, Humboldt county, advises us that he will make his first showing at the State Fair this fall. Mr. Hauck is one of the oldest breeders of large-type Poles in the State but has been at a disadvantage heretofore in making the fairs on account of lack of transportation facilities.

Frank Brush of Santa Rosa has started to fit his Berkshire hogs for the State Fair. This is Mr. Brush's first show at Sacramento and he expects to have a good-sized herd entered. The P. P. I. E. grand champion sow, Riverby Princess, farrowed a litter of pigs, sired by Grand Leader 2nd last week.

A sale of registered Duroc hogs will be held at Mossdale Farm, near Stockton, July 15. J. E. Thorpe, on whose farm the sale will be held,

will act as manager, consignments having been made from the following named breeders in Stanislaus county: John Daggs, J. K. Frasier, Guy H. Miller, W. J. Hackett and L. D. Collins. The sale will not be held under the auspices of the Stanislaus Duroc Breeders' Association.

DAIRYING AND DAIRYMEN.

The Wallace dairy of Ukiah is a new one selling certified milk.

The Napa Valley Creamery Co. has leased the Winters creamery and will begin operations July 1. The ice plant will not be run.

The U. S. Navy will have Prof. O. M. Simpson of the Oregon Agr. College to inspect its butter receipts during the summer. Prof. Simpson's headquarters will be in San Francisco.

During summer months more children die of intestinal diseases than during the rest of the year. Most of these are caused by drinking dirty milk, says the Cal. State Board of Health, which calls attention to the fact that the new law does not go into operation until Oct., so individual care will be necessary this summer.

CATTLE AND CATTLEMEN.

Grass fires last week destroyed over 1800 acres of dry-feed cattle ranges in Merced county.

Beef cattle, 500 head, were shipped from Athlone district, Merced county, to San Francisco last week.

The cost of producing meat is unnecessarily high according to U. S. Dept. Agr. due to waste of feed, mostly of stover or by losing its full value because concentrates are not fed with stover.

HORSES, SHEEP, ETC.

Only 301 purebred horses were imported to U. S. in 1915 as against 1210 in 1914.

Faught & Meek recently shipped nine carloads of horses to Utah and returned to Tulare to get as many more. U. S., France, and Italy are buying horses in the big horse market recently opened in Ogden.

Frank Meacham's flocks and herds will not be dispersed on account of his recent decease. Mrs. Meacham and son Harrison have worked with Mr. Meacham many years; and having been fully acquainted with his aims and methods, will carry on his work. The flock contains 3000 ewes. Sixteen rams from among P. P. I. E. prize winners were added to the flocks last fall. Ten Shropshire rams from the East are coming. Recent sales include a carload of Shropshire Merino ewes to S. Williams, Lone Pine; carload Shropshire bucks to Stevens Bros., Woodland; a carload of Red Polled bulls to Wm. Russ, Eureka; two Red Polled bulls to T. M. Burns, Bridgeville. Five hundred prime wethers were recently sold at \$6.65 on the place.

A small girl was told by her mother that she must not be afraid to stay in the dark and go to sleep, as the angels would watch over her. She left the room, and as the window was open a few mosquitoes had made their way in. The mother was rather startled to hear a little while after leaving the room the little girl crying for her to come. "Come quick, mother, because the angels are up here, singing, and one bit me."—Sent by a Montreal Reader.

LIVESTOCK DIRECTORY.

Rates in this directory. 3c per word each issue; or if carried weekly for one year, 2½c per word.

SWINE.

JNO. P. DAGGS, Modesto, California.—Breeder of the leading strains Duroc Jersey Swine. The best blood that can be had in the world. None better in the Daggs herd today. Daggs gone out of business, because he did not show at Fair. I should say not. He was just taking a little layoff; just a little rest from the hard work of the show ring. But not a rest from raising prize-winning Durocs and buying the leading strains of the world to improve his herd. So don't fail to write or come and see the Daggs Durocs before buying elsewhere.

BILLIKEN HERD OF IMPROVED CHESTER WHITES—The kind that makes the money. Pure-bred—registered—cholera immune. An extra fine lot of weaned pigs—both sexes—representing the best and most popular blood lines this breed produces. Five different sires used. Can mate up not akin. Quality combined with size. Rapid growing—early maturing. A few nice fall gilts that will be bred and ready to ship in September. Write for prices and circular. C. B. Cunningham, Mills, Sacramento County, Calif.

REGISTERED DUROC-JERSEYS—Fall boars and gilts. Weanlings sired by an excellent son of the 1020-pound Royal Munde. We have pigs sired by this boar weighing 240 pounds at 7 months, and out of line bred Golden Model, Crimson Wonder, Orion, Chief, and Colonel sows. For information write Haden Smith, R. 1, Box 84D, Woodland, Cal.

YOUNG POLAND CHINAS, LARGE TYPE—Boar IBA Wonder won first and Reserve Championship P. F. I. E., weighing 730 pounds under 2 years and in breeding condition. 60-day special—fine young sows bred to IBA Wonder at very low prices; also weanling pigs, either sex. Satisfaction, or money refunded. W. A. Young, Lodi, Cal.

BIG TYPE POLAND CHINAS—The profitable money-making hog. The hog for the farmer. The real mortgage lifter. Large herd to select from. Bred sows, bred gilts, open gilts, weanlings of both sex. Boars ready for light service. Extra special prices. Geo. A. Smith, Corcoran, Cal.

REGISTERED DUROC-JERSEY—Weanlings, shoats gilts and boars. Unrelated. Many of our hogs are related to the several prize-winners at Panama Exposition. This herd is undoubtedly the finest in the State. Have had as many as 19 pigs to a litter. Grange Stock & Poultry Farm, Yountville, Napa Co., Cal.

HAMPSHIRE SWINE—Both males and females from Grand Champion 700-lb. boar and Grand and Junior Champion sow. Also Guernsey bull calves from Grand Champion bull. BELLA VISTA HERD, J. W. Henderson, 1st National Bank Bldg., Berkeley, Cal.

REGISTERED BERKSHIRES—World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapewild Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

BARGAINS IN CHESTER WHITES—Few excellent bred gilts, \$30; sows, \$35. Service boars, \$20 and up. Weanlings, \$10. Best blood lines. Only good individuals shipped. Dallas Bache, Hollister, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

DUROC-JERSEYS—Some great weanlings of both sexes by "RIVER BEND HIGH MODEL." Improve your herd by introducing this blood. RIVER BEND FARM, St. Helena, Cal.

FOR SALE—Fancy belted Hampshire hogs. Well belted young sows and boars registered. Prices reasonable. Ben F. Thorpe, Manager, Canfield Estate Ranches, Bonsall, California.

REGISTERED BERKSHIRES — BOARS — 5 and 6 months old \$15 and \$20 each. Also a few year-old ones. All pure-bred animals. G. A. Casey San Jose, Cal.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

LARGE, QUICK MATURING registered Berkshires—Both sexes, \$10 each for weanlings. Older ones at farmer's price. J. M. Bomberger, Modesto, Cal.

REGISTERED PUREBRED BERKSHIRE PIGS—Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

DEL DAYO FARM—(Old Haggin Bottom Ranch)—Breeders of registered Berkshires. Both sexes for sale. Stephen B. Day, Box 1140, Sacramento.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Milliss, Yolo, Cal.

IMPERIAL STOCK FARM BERKSHIRES—Registered stock of all ages. Prices and description on application. R. J. Merrill & Son, Morgan Hill.

LAKESIDE STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

LARGE TYPE POLAND-CHINAS—Now booking orders for Spring pigs from our Nebraska prize-winning sows. H. I. Marsh, Route A, 348, Modesto.

REGISTERED BERKSHIRES—For sale, bred sows. Boars ready for service and weanling pigs. C. E. Thompson, Novato, Cal.

POLAND CHINAS—Young stock; either sex. Write for pedigree. Reasonable prices. Edw. A. Hall, Watsonville, Cal.

FOR SALE—Two and three months old thoroughbred Poland China Boars. Mrs. M. A. Rodgers, R. 1, Box 34, Galt, Cal.

POLAND-CHINAS—250 lbs. in six months our aim. Imported sows. None better. Linn & Porter, Route A., Modesto, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

REGISTERED POLAND-CHINA SWINE — Prize-winners. Finest stock in the state. \$20 up. M. Bassett, Hanford.

REGISTERED DUROCS—Herd headed by Crimson Monarch 2nd. Write for prices. J. M. De Villasis, Paterson, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boudier & Son, Napa.

POLAND CHINA HOGS FOR SALE—Registration papers furnished free. C. A. Cooley, Durham, Cal.

REGISTERED IMPROVED CHESTER WHITES—Ortizly Bear Ranch, East Auburn, Cal.

REGISTERED BERKSHIRES—Old and young stock. Prolific strain. Labranza Ranch, Athlone, Merced Co., Cal.

REGISTERED DUROCS from best Eastern blood lines. Weanlings, \$10. No culls. S. S. Southworth, Napa, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

REGISTERED DUROCS—All ages. One yearling boar. Satisfaction guaranteed. Frederick J. Johnson, Napa.

REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. Mikesell, Manteca.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

HOPLAND STOCK FARM — Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRE PIGS — Write or call Greenwood Ranch, Brentwood, Cal.

KNOB HILL STOCK FARM — Registered Poland-China Swine. A. M. Henry, Farmington.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

POLAND CHINA HOGS—Registered. R. J. Miller, Llewellyn Ranch, Lathrop.

CHAS. GOODMAN — Breeder of high-class Berkshires Swine. Williams, Cal.

POLAND CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

READAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED POLAND-CHINAS and Duroc-Jerseys. H. P. Harrold, Orland.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROCS—All ages. Either sex. W. A. Pack, Hollister, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

REGISTERED O. I. C. SWINE — C. D. CONWAY, Ripon, Cal.

REGISTERED DUROCS—H. N. Leininger, R. D. 4, Chico, Cal.

REGISTERED POLAND-CHINA HOGS—J. W. Wakefield, Acampo.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

BERKSHIRES—Carruthers Farms, Mayfield, Cal.

SHEEP AND GOATS.

FRANK MEACHAM, Petaluma, California.—Breeder Shropshire, Rambouillets, American Merinos, both sexes. Take electric car at Santa Rosa or Petaluma for Live Oak.

THE BULLARD FLOCK RAMBOUILLETS — Founded 1870. Largest Merinos on Pacific Coast. The Bullard Company, Woodland, Cal.

FOR SALE—Shropshire bucks, yearlings and lambs. Individuals to car lots. Purebred but not registered. J. R. Bloom, Dixon.

KAUPKE BROS., WOODLAND, CAL.—Breeders and importers of Hampshire sheep.

BREEDER OF MERINO SHEEP—Rams for sale. J. Badegary, Fresno, Cal.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets, Hanford, Cal.

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REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Falcides Ranch Co., 320 Sharon Bldg., San Francisco.

HOPLAND STOCK FARM — Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond Ranch, Esparto, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

GEORGE WATTERSON—Breeder registered Herefords, Elkhop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

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REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamella Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

REGISTERED HOLSTEIN bull calves. Sired by Lorena Korodyke Alcaraz, whose dam made 29.75 pounds butter fat in seven days as a four-year-old. J. M. Campbell, Escalon, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs. butter as two-year-olds. A. A. Jenkins, Tulare.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

COWS—30 head. Good Grade Jersey Milk Cows at \$60 each. F. H. Webb, Escudido, Cal.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

NOTICE!

Having decided to deal exclusively in Registered Poland China Hogs, I am offering my entire herd of

REGISTERED HOLSTEIN COWS, HEIFERS, BULL AND CALVES.

Stock is excellent and my price is right.

Write or call and see me.

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Modesto, California

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We have purchased all the Drain Pipe in the Palaces and Courts at the Exposition. This is made of light galvanized iron in 10-foot lengths, and will slip together—can be used for surface irrigation.

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Main & Howard Sts., San Francisco, Cal.

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Bred for size, bone and quality. Pigs for sale, sired by Big Royalist 180837 and Breed's Model 165859, both winners of blue ribbons at State Fair.

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DAIRY CATTLE.

ON ACCOUNT OF FEED will sell 30 to 40 head high grade Jersey milk cows. All in milk except a few springers. Tested cows for quick sale. Will take \$60 per head. A. M. Tomasi, Kellogg, Sonoma Co., Cal.

VANDERA HERD OF JERSEYS is now offering the better calves from register of merit cows with official yearly record. Guy H. Miller, Route 1, Modesto, Cal.

FRANK MEACHAM, Petaluma, California—Breeder. Red Polled Cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

REGISTERED HOLSTEIN SERVICE BULLS—Ages 4 to 5 years. From excellent families. Prices on application. Miller and Lux, Colony Farm, Dos Palos, Cal.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3 lbs. cows. None better. Cheap for quality. N. H. Locke Co., Lockeford, Cal.

FAIR OAKS RANCH, WILLITS, Cal.—Young registered Shorthorn bulls for sale. Sired by Landseer 379318, grandson of Imported Villager 295884.

HOLSTEIN BULLS—Well marked, large, straight individuals. Tuberculin tested. \$100 up. Packwood Farm Herd. W. F. Mitchell, Visalia.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

THE McCloud RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

BULL CALVES from a grandson of Colantha Johanna Lad and from a son of King of the Pontiacs. J. W. Benoit, Route C, Modesto, Cal.

HOLSTEIN BULLS out of A. R. O. cows, sired by a son of King of the Pontiacs. Prices reasonable. J. H. Harlan Co., Woodland, Cal.

REGISTERED HOLSTEINS—32 high-grade Holstein heifers coming from this Fall for sale. E. E. Freeman, Route B, Modesto, Cal.

TWENTY-EIGHT high grade yearling and two-year-old Holstein heifers for sale; some bred. K. W. Abbott, Milpitas, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

WILLOWMOOR AYRSHIRES—Great records; economy. 300 head in herd. J. W. Clise, Redmond, Washington.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS, Corp., Importers and Breeders, Woodland, Cal.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

REGISTERED JERSEY BULLS from register of Merit cows. D. F. Conant, R. "B," Modesto.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

BREEDERS OF A. R. O. Holstein-Friesian cattle exclusively. Dirk Dairy Farm, Lemoore.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

YOUNG REGISTERED JERSEY BULL CALVES at reasonable prices. O. J. Ames, Oakdale.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAllister & Sons, Chico, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

A. R. O. REGISTERED HOLSTEIN BULLS for sale. Millbrae Dairy, Millbrae, Cal.

LINWOOD FARM—Registered Holsteins and Imported Guernseys. Santa Cruz, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes, McCoy, Oregon.

REGISTERED HOLSTEINS—Golden West Herd, D. & H. Bowles, Modesto.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Cal.

HORSES AND MULES.

HORSES—FOR SALE—30 head horses and colts: 11 head broken, 5 3-year-olds, 3 2-year-olds, 6 yearlings and 5 weanlings. Price \$2200, or will consider rolled barley to full amount in exchange for tractor (track layer type) to \$1,500; balance cash. Box 128, Lancaster, Cal.

REGISTERED SHIRES—Black Hawk Stock Farm Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

MISCELLANEOUS.

CROLEY'S CALF FEED with skim-milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc. 631-637 Brannan St., San Francisco.

D. O. LIVELY, 216 Hobart Building, San Francisco, buys and sells live stock—any kind—any quantity.

DUROCS AND GUERNSEY BULL CALVES—Gilts bred to 900-lb. boar. Ed. E. Johnson, Turlock, Cal.

1916 FAIR DATES.

Place.	Date.	Secretary.
Butte County Spring Exposition, Chico.	May 22-28.	E. J. Falk
Fresno	October 3-7	C. G. Eberhart
Hanford	October —	F. E. Newton
Kern County Fair	October 9-14	
Napa County Farm Bureau, Napa.	September 14-16	Dr. Ben Stetson
Pleasanton	September 13-17	E. E. Hall
Riverside	October 16-21	O. P. Sanders
State Fair, Sacramento	September 2-9	Chas. W. Paine
Santa Rosa	August 6-12	E. H. Brown
Solano County Fair, Dixon	August 14-19	
Woodland	August 21-26	H. S. Maddox
Arizona, Phoenix	November 13-18	T. D. Shaughnessy
Nevada, Reno	September 21-26	W. D. Phillips

UNUSUAL BERKSHIRE SALE.
[Written for Pacific Rural Press.]

The announcement of Carruthers Farms that a sale of Rival's Champion Berkshires will be held at Mayfield, Santa Clara county, early in August has created more than ordinary interest in swine circles, according to W. M. Carruthers, proprietor. This is largely attributed to the fact that it is the first large sale of Berkshires ever held in California by an individual breeder. While Mr. Carruthers realizes that he is apt to sacrifice some good hogs at this, his first annual sale, he is cataloging 40 head of Rival's Champion Best blood out of the total of 47 to be sold.

To Berkshire breeders in the West this will undoubtedly mean a great deal; as it is not only the first time that this breeding has been offered in such large quantities at public sale in the West, but in the East as well. The feature has been considered by Mr. Carruthers in making up his offering; and as a result he has included a choice lot of boars as well as sows, with the expectation that many California breeders will want to buy new herd sires.

For those who are in the market for foundation female herds, he will offer about 30 sows ranging from under year to senior yearlings. Some of them will be bred, but most of them will be open, this being a requirement breeders usually demand. As all of them will be entered at the California State Fair, the sale offers an unusual opportunity for strengthening show herds.

NAPA DUROC BREEDERS ORGANIZE.

In line with the progressive spirit of Napa county livestock men the Duroc breeders of that county met at Napa, June 24, and organized a county Duroc breeders' association. The meeting was called by Farm Adviser H. J. Baade, a fair delegation of the 17 breeders in the county being present.

After thoroughly discussing the need of such an organization in raising the standards of the Duroc breed in the county, and of advertising Napa county as Duroc breeding district, C. E. Durell was elected president and S. S. Southworth, secretary-treasurer. At a future meeting, a vice-president and board of directors will be elected and by-laws and constitution adopted.

PROGRESS OF SAN FRANCISCO SHOW.

A meeting of prominent livestock breeders and allied interests was held in San Francisco, June 26, to decide on the feasibility of holding a livestock show in that city next fall.

After a great deal of discussion, it was decided by those present that it would be possible to hold the show at the tentative date set, November 22-28, so far as fitting the stock was concerned, but it was thought advisable to have a larger working capital than the \$10,000 previously suggested.

To bring out an exhibit of stock worthy of San Francisco's patronage a fund of \$20,000 was deemed necessary. Ten thousand of this has already been promised by merchants of San Francisco, and an effort will be made to secure \$10,000 from the livestock and allied interests. Those in charge of raising this sum will report at another meeting July 6.

Sheep in U. S. numbered 2,500,000 in 1914 and 2,450,000 in 1915; but the average price of sheep of all ages increased from \$4.50 to \$5.17 per head according to U. S. Dept. Agr.

A BIG TWO-YEAR-OLD RECORD.

We have just received word from Mr. F. Stenzel of San Lorenzo that the junior two-year-old Holstein, Marie Clothilde Pontiac Creamelle, has just completed a seven-day record with 22.52 pounds of butter.

Although authentic confirmation has not yet been received, Mr. Stenzel states that Miss Hill, in charge of the official test work at the University of California, believes this to be the highest record ever made in the State by a two-year-old. That the heifer is well within the junior two-year-old division is shown by the fact that she is not quite two years and two months old.

AGE FOR BLACKLEG VACCINATION OF CALVES.

To the Editor: At what age should one use blackleg vaccine for calves? How long will germs of blackleg live where all dead animals are buried or burned and how long where the carcass is left exposed?—S. A. M., Gridley.

[The safest method, where blackleg has been or is in the neighborhood, is to vaccinate at 3 or 4 months old and again 6 months later, according to the Cutter Laboratory. About 21 per cent of deaths, where blackleg occurs at less than 5 months of age, are before 3 months of age, but the immunity gained by vaccination under 3 months is so questionable that a false sense of security often results. Spores, which are the "seeds" of the bacteria, live several years unless all of the bacteria are burned or otherwise destroyed.]

HOG CHOLERA PREVENTION



An ounce of prevention is worth ten thousand dead hogs, providing you vaccinate your hogs with Inter-State Vaccine Co.'s hog cholera serum, made under government supervision, licensed No. 25. We guarantee your hogs immune against cholera. Have your banker ascertain if our guarantee is good. We teach the farmers free, how to vaccinate their hogs. Write us for free book on "Hog Cholera." Costs you 22 cents per head to immune your pigs for their natural lives when three to ten days old. Address L. V. Green, Mgr., or Dr. W. E. Embree, V. S., 429-30 Bryson Bldg., Los Angeles, Cal. Inter-State Vaccine Company, Kansas City, Mo.

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1/2 Labor Cost
1/4 Power Cost
of Silo Filling

Grip Hook Feed Table puts feed into cutter automatically, saving day wages and board of at least two men on big outfits.

Blower built independent of the cutter. Fan speed can be increased or decreased without changing speed of knife shaft.

Patented, low-speed, one pulley, chain drive blower operates Smalley with one-fourth less fuel than other machines. Extension table on hopper prevents accumulation of litter.

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7 SIZES

Bevel-edge, whirling blades slice like a lawn mower, cutting feed fine and even. No chunks. Better feed and greater tonnage in your silo.

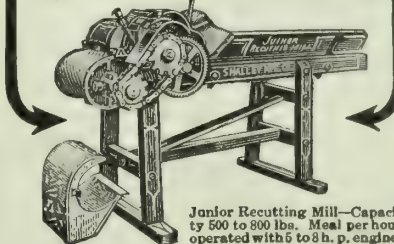
Patented recutting attachment makes dandy Alfalfa Chop for fattening cattle, sheep, hogs and poultry. Handles leaves, stems and all without waste or injuring color of the hay. Sell your No. 1 hay and mill off-grades for feeding. Make combination feeds from clover, rice straw, bean straw, pea vines, oats and rye, or dried cornstalks. Capacities 1200 to 2700 lbs. per hour. Recutting attachment on Junior Mill makes 500 to 800 pounds of meal per hour with 5 to 8 H. P. engine.

Powerfully built. Steel in castings. One-fourth heavier with a wonderful record for long service. Blue Ribbon Winner at Panama Pacific Exposition.

Send for illustrated FREE book and see how you can save labor and power cost and cut your feeding cost in half.

Write NOW!

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Dept. 11 Manitowoc, Wis.



Smalley's Silo Fillers Sold by Pacific Implement Co., San Francisco, Cal.

VACATION LAND

What section of California holds forth such inducement to the vacationist as that traversed by the Northwestern Pacific R. R.? Anglers will find the finest fishing; sportsmen an abundance of furred or feathered game; swimmers and bathers have a wide choice of ocean, river and bay; lovers of wild, primitive spots will find miles of great redwood and other forests; rugged mountains and elevations will appeal to trampers; cozy camping locations will entice the family; this wondrous collection of nature begins at Sausalito and extends to the world-old forests of Humboldt county.

A very interesting description of this territory is found in the booklet—Vacation—1916, free copies of which may be obtained at 874 Market Street, San Francisco, or on application to J. J. Geary, G. P. A., 808 Phelan Bldg., San Francisco.

Northwestern Pacific R. R.

Veterinary Queries and Replies.

[Answered by Dr. H. B. Wintringham, Petaluma, Cal.]

[Subscribers wishing an immediate reply should send money order for \$1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

DOG HAS TICKS.

To the Editor: My 6-months pup has woodticks which suck blood and swell up big as a grape.—T. B. D., San Francisco.

[A little coal oil applied to the ticks will cause them to release their hold. They breed in old wood and decaying vegetation of all kinds.]

PIGS COUGH.

To the Editor:—Month-old pigs have a bad cough.—Sub., Live Oak.

[Give these pigs 3 drops fluid extract belladonna 3 times a day. See that their surroundings are dry and sanitary.]

HEIFER TWIN STERILE.

To the Editor: Three weeks ago a cow had twin calves, a bull and a heifer. Will the heifer breed?—H. T. C., Campbell.

[This heifer is what is known as a "freemartin." Such a heifer twinned with a bull is almost certain to be sterile.]

MARE CANNOT GET UP.

To the Editor: Last February my 16-year mare became unable to get up when she was down. The veterinarian said it was kidney trouble. I changed feed from alfalfa hay to wheat hay with crushed barley. Her appetite is good, and she is sleek and fat. Gave her two doses of medicine which cost \$3, though the drug-store would put it up for 30 cents. Am 15 miles from a doctor.—A. A. K., Sanger, Fresno county.

[In this case follow the doctor's directions. Ask him for a prescription if you don't like the price he charged you for the drugs.]

TEAT STOPPED UP.

To the Editor: To get milk from a back teat of one of my cows, must insert a tube two inches, and then in a certain way. Sometimes blood comes with the milk.—H. P. S., Wasco.

[There is no drug or treatment which will give the effects you are after. An operation by a qualified man is the only remedy for the trouble.]

HENS STRAIN—BLOODY DROP-PINGS.

To the Editor: My best laying Leghorn hens are dying. Eggshells thin. I am now giving hard slaked lime and oyster shells. Feeding Sperry's Surelay reduced with one-third bran, wheat and Egyptian corn night and morning, a lot of sprouted barley and fresh skim-milk. Hens first have a soiled vent—seem to be straining all the time. Other hens notice the blood and nearly eat the affected hens alive if not removed. Many eggs streaked with blood.—T. H. H., Walnut Creek.

[Your trouble appears to be caused from a lack of lime salts for egg production. However, the blood mentioned leads the writer to suspect coccidial enteritis. A more complete description of symptoms and anatomical changes might lead to

discovery of the cause of your trouble.]

COLT NAVEL RUPTURE.

To the Editor: After I had lost two fine colts with navel rupture, I learned how to fix it, and cured two that I sold for \$500 when three and four years old.

Take a piece of leather or heavy canvas 6 or 8 inches wide and long enough to reach around the colt, put straps with buckles on it so it can be tightened or loosened. Take a round potato 3 inches or more in diameter, cut in half, fasten 1/2 of the potato to the canvas belt so the round side will fit over the rupture. It can be fastened to the belt by putting another piece of canvas around it and riveting it to the belt. Push the rupture in and fasten the belt around the colt with the potato over the rupture. To keep it from slipping back put a breast harness on the colt with straps and buckles to adjust it. Keep it on until well.

Sonora.

W. J. Davis.

CURING CALIFORNIA CHEESE.

To the Editor: In the issue of May 13 is an article about cheese-making by P. Domenigoni. We can make cheese, but do not know at what temperature to cure it, or how long it takes.—C. C., Brentwood.

[Answered by P. Domenigoni, Heber.]

[Keep the cheese at 65 to 70 degrees F. Must have no draft (in Imperial valley climate). It will take about a month to mature the California cheese and about two weeks for the Monterey kind. It must be turned upside down every day. If it leaks whey or water, it is because it was not cooked enough or not pressed tight enough. To cure the leaking cheese, it must be dried with a cloth twice a day. I have had 10 years' experience in cheese-making.]

MULBERRY LEAVES FOR STOCK FEEDING.

To the Editor: I have a large mulberry tree. The cattle, sheep, and hogs eat the leaves very readily as they fall, also green. Have they any feeding value?—Subscriber, Tuolumne County.

[Answered by Prof. F. W. Woll, University Farm, Davis, Cal.]

[Mulberry leaves are used to a limited extent for stock feeding in regions where there are large mulberry plantations which for some reason or other are not used for feeding the silkworm; for instance, in certain parts of Syria and Palestine. They are considered a valuable feed, especially for fattening sheep. The air-dried leaves contain, on the average, 12 per cent moisture, 16.3 per cent protein, 4.1 per cent fat, 49.6 per cent N-free extract, 6.9 per cent fiber, and 11 per cent ash. Chemical analyses showing the amounts of various groups of substances present in plant materials do not give any information as to the palatability of these; but when a feed is eaten readily by stock and analyzes high, it must possess a high feeding value, and practical feeding experience in foreign countries has shown this to hold true of mulberry leaves.]

60 Duroc Jerseys 60

Mossdale Farm, J. E. THORPE, Manager

FRENCH CAMP, JULY 15

Assisted by consignments from Rucker & Coppin, J. K. Fraser, L. D. Collins, J. P. Daggs, Ed. E. Johnson, Guy H. Miller, W. J. Hackett, and others. An exceptional opportunity to secure foundation stock of the best. Sale held at French Camp at the Grange Pavilion. Take Southern Pacific and Western Pacific to French Camp. Santa Fe, Tide Water, Southern, and California Traction to Stockton, met by appointment. Write for catalog.

COL. BEN. C. RHOADES, Auctioneer.



SANTA ANITA RANCHO
ANOAKIA BREEDING FARM



HOLSTEIN CATTLE The breeding herd of registered Holstein cattle at Santa Anita Rancho is made up of individuals selected strictly upon their merits as producers, high individual quality, and production and proven transmitting power of their ancestors. PRINCE GELSCHE WALKER, whose combination of breeding, individuality, and the production of his daughters stamp him as one of the greatest young sires of breed.

Females in the herd are making large official record as rapidly as they freshen; and the herd is being developed to become one of the largest groups of high producers in the West.

At present a few bull calves are offered for sale. These are straight, well-marked youngsters, bred right, and priced moderately.

BERKSHIRE HOGS The breeding herd of registered Berkshires has been carefully selected and represents the blood lines that are in the very first rank of the breed. The herd is headed by KINTYRE LAIRD, first prize junior yearling and reserve senior champion boar at Panama-Pacific Exposition. He is an unusually good type, and comes from a family noted for uniformity and prize-winning quality.

A few boar pigs are offered at this time.

POLAND-CHINA HOGS In founding the herd of registered Poland-Chinas at Santa Anita Rancho, the choicest individuals of the most noted prize-winning families in the West were drawn upon and for uniformity, desirable size and quality the herd is unexcelled in the West.

At the head of the herd is BANKER'S BOY, junior champion and reserve grand champion at

Anita M. Baldwin W. H. TAYLOR, Superintendent.
Santa Anita, Cal.



San Ramon Shropshires WINNINGS P. P. I. E., 1915.

Aged Ram, First and Second. Yearling Ram, First. Ram Lamb, First, Second and Third. Champion Ram. Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of Sire, first. Pen of three Lambs, bred by Exhibitor. First and Fourth. Pen of four Rams, bred by Exhibitor. First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor. Second. Flock, one year old, First. Flock, one year old, bred by Exhibitor. First. Flock under one year First. Flock under one year, bred by Exhibitor. First. Produce of Ewe, First, Second and Third. Premier Championship for Breeder. Premier Championship for Exhibitor. A total including American Shropshire Specials of 15 Firsts, 9 Seconds, and 6 Championships.

PUREBRED REGISTERED RAMS AND EWES.

Individuals or Carload Lots.

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Contra Costa County, California.

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REGISTERED BERKSHIRES (Boars, Bred Sows and Gilts)
HERD BOAR, ROYAL POINTER 2nd, 197092, First Prize
Senior Yearling, P. P. I. E.

3 REGISTERED HOLSTEIN BULLS from High-Testing Cows.

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BREEDERS OF PUREBRED

Holstein Cattle
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A safe, speedy and positive cure. The safest, most BLISTER ever used. Removes all bunnies from Horses. Impossible to produce scar or bluish. Send for descriptive circular.

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Circular containing 100 mechanical movements mailed free.

Mr. Dairyman or Breeder---

Do you want to improve the butter-fat output of your herd? If so, I have just the bull you want.

Pietertje Cornucopia Creamelle

His dam on her first test made a record of nearly

25 Pounds, Testing
4.7 per cent.

He is just ready for service and just the sire for your herd.

Write, or come and see him.

F. STENZEL

Breeder of Holsteins.

SAN LORENZO, CALIF.

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In Blake, Moffitt & Towne, Los Angeles
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850 one and two-year-old
SHROPSHIRE RAMS
By Imported Canadian Sires and
Pure-bred Ewes.

For further particulars
call or address:

C. E. Barnhart, Suisun, Cal.

Goats and Dogs in Tuolumne.

[Written for Pacific Rural Press by D. L. Schrader.]

When we were in Tuolumne county over three years ago, very few goats were being raised; but now, we notice that wherever a rancher has some rough pasture land covered with under brush, he generally has 20 to 100 goats. The Angora seems to be the most popular. Two of the requirements for successful goat raising are tight fence around the pasture and a well-trained dog. Ed Minners, who has a nice herd near Sonora, has trained two dogs very successfully. He has found the black shepherd the best breed.

Just after the pup is born and before his eyes are opened, he is taken away from his real mother and a nanny goat that has just kidded becomes his foster mother. Sometimes she objects very strenuously, and has to be thrown and held while the pup is allowed to get his first taste of goat milk. A comfortable box is fixed up in the corral where the goats sleep at night, and the kid and puppy sleep together. After a time the nanny adopts her foster son, and it is very interesting to see a beautiful kid on one side of the mother; and on the other, a little black-nosed pup. The pup grows up with the goats, and when they go out to pasture he goes with them.

It is particularly interesting to note the affection that the dog has for this adopted mother even after he has been weaned for months. He is ready to take her part in any scraps that she gets into; and if a coyote or other varmint appears, he is right there to put up an awful fight for his band.

The dog becomes inseparable from the band and will howl and mourn for days if taken away from them. As goats always come home at night, the dog has a chance to be fed well both night and morning. His feet are well looked after to see that no foxtails or bronco grass are allowed to cause them to fester.

One goat man told us that his dog was worth two men, as it was almost impossible to get a man to stay with stock. The dog keeps them together much better; and doesn't allow them to scatter off in different bunches.

SHEEP ON GRAIN FARM.

[Written for Pacific Rural Press.]

From a flock of 157 ewes and their lambs, N. L. Tomlinson of Stanislaus county marketed \$1,000 worth of wool and mutton two years ago, hav-

ing grown them largely on what would otherwise have been waste.

Mr. Tomlinson has a large acreage of grain land, through which laterals of the Turlock Irrigation District run. It is primarily to clean up the ditch banks that the sheep are kept.

During spring months the sheep are pastured on a small piece of alfalfa; and this is also headquarters for them at night during the balance of the year. Besides cleaning up the ditches they are pastured on grain stubble in summer and fall, taking care of themselves without a herder.

With this arrangement of feed the lambs mature rapidly, lambing usually being done in January though delayed till March this year. The local butchers always furnish an outlet for the lambs because Mr. Tomlinson has always kept good rams, mostly of the mutton breeds.

To begin with he had Merino ewes. These were bred to a Dorset buck, the ewes from this cross being bred back to a Merino buck. The next buck was a Shropshire and last year an Oxford Down buck shared honors with a Shropshire. Each buck is used on the flock two years. This cross-breeding has developed a fine band of ewes, it being Mr. Tomlinson's custom to select only the best ewe lambs for his breeding flock. While only a side line of his farming, sheep on this ranch are more than paying their way.

RESEARCH AND REMINISCENCE.

To the Editor: It is with much pleasure and interest that I have read your article in the "Pacific Rural Press" on "What Sheep Did for California." I had a more or less hazy notion of the sheep kept at the Missions and in early days, but your account of the matter, giving dates and other interesting facts, will be of great benefit to me in tracing the character of the forage which existed previous to that time and comparing it with the present condition of the ranges and pastures. Your study of agricultural conditions in early days makes your articles of great benefit to us newcomers who are trying to fathom the whys and wherefores of present conditions. Because of your long and broad experience in this state you are much better able to treat this subject interestingly than any one else.

P. B. Kennedy.

University of California.

[We are certainly very glad to interest Professor Kennedy. We get much pleasure from looking backward once in a while and in digging up things beyond our memory. That it may be useful is another and a higher consideration.—Eds.]

The cholera ordinance of Tulare county as passed last April provides for quarantine of sick or vaccinated hogs (if with virus) restraint of dogs, etc., where cholera exists, keeping quarantined hogs out of irrigation ditches or streams, cremation or burial of carcasses, and inspection and disinfection of all hogs imported to the county.



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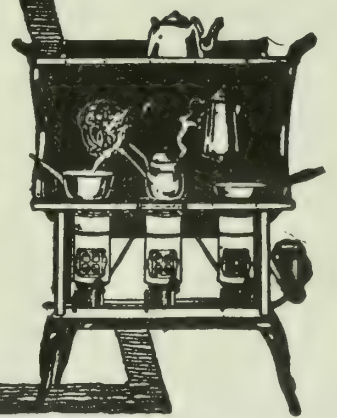
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LIMBERNECK AND OTHER TROUBLES.

[Written for Pacific Rural Press by Susan Swainsgood, Pomona.]

Limberneck is very largely a summer trouble, it is not a disease, but a symptom that must be recognized or the fowl will die. While the main cause of limberneck is ptomaine poisoning, I have known cases with all the symptoms of limberneck that came from sunstroke. One case especially was that of a pullet about 4 months old that had been accidentally shut out of her yard and had not sense enough to seek shelter from a blazing hot sun under nearby trees. I was away all afternoon and when I went to feed found this pullet at the gate with neck outstretched and as limber as possible. She got exactly the same treatment as though she had come by her trouble from poison except that she was held in a pan of cold water with the feet well covered while water as hot as could be borne was poured over her head. Then she was given a dose of medicine and put in a cool place. When morning came, she was scratching around as lively as ever.

But, the main cause of limberneck is poison caused by fowls eating decayed animal matter. It is usually supposed that if a fowl eats worms, bugs, and maggots that these things die immediately they are swallowed by the hen. This is not so, however, the hens' craw is just a hiding place for these things, it is warm and well supplied with moisture, air, and other requisites for continued life for certain things and if the maggots are old enough to contain poison as is the case when they come from decayed animals, the poison in them simply paralyzes the digestive tract in the fowl; and unless relief is soon given the fowls die.

To prevent limberneck then, all we have to do is to see that no dead or dying animals are left where fowls can have access to the remains. This is a big job when fowls are out on the range, but is easy when they are yarded. Still, on range it is in the rancher's power to keep track of everything except gophers and field

mice. There should be occasional days when the premises can be looked over for them. All dead animals should be buried deep, or better cremated, for no matter how deep they are buried, dogs will dig them up; and then the fowl are in danger. In cold or cool weather the danger from ptomaine poisoning is very little because the carcasses of animals do not decay rapidly enough to poison the maggots, so that even though a hen may eat numbers of them they would still be safe.

If a hen or several hens in a flock should be taken with limberneck it is well to put them in a pen by themselves, not because it is contagious, but because they are better kept on a very slim diet. Nothing at all except water is better, but anyway the feed must be easy of digestion.

For a bad case of limberneck give two teaspoonfuls of oil of turpentine and one teaspoonful of olive oil at one dose and no feed. Medicine, except just one dose, will do little good. What they need is to get the poison out of the system, and this is best accomplished by fasting.

For small chicks, give five to ten drops of the turpentine and oil according to age. If no turpentine is on hand give a pill made of lard, cayenne pepper, ginger or even mustard, anything that will act as a stimulant to hurry the condition away.

Broken Feathers.—My chickens look like they do in the fall when molting. The feathers are all split and broken. They are very dumpy, have almost stopped laying, and four have died. I feed wheat, green alfalfa, and onion tops, have not seen any lice. Mrs. H. P. A., Bieber.

[Your ration is too narrow, the feathers have no life in them because you do not feed any animal food to keep them wiry and elastic. Get them some beef scraps, fish meal, or some form of animal food, ground bone or anything you can; even a jack rabbit thrown to them after the good man has shot it, will be appreciated and used for feather making. All kinds of poultry are carnivorous and must have animal food; yet many treat them as vegetarians; and a few even as fruitarians, with the result that they lose money on their chickens.]

Chickens on Shares.—Would you please tell me what would be a fair lay out to give a person to raise chickens for you. I own the place. He is to board himself and chickens, I furnish housing for him and the chickens and range to run them on. What percent of chickens or income should I have?—A Subscriber, Oakdale.

[If I understand aright, the man owns the chickens, does all the work, furnishes all the feed, you simply furnish housing and bare range. You certainly cannot expect a large share, having nothing to lose. The land will be enriched by the poultry droppings and I should judge if you get ten per cent of the profit you would be all right, provided your range is bare. If it is alfalfa or any kind of green feed, you should be paid more. This kind of questions is hard to answer satisfactorily to all parties; and this is merely my own personal opinion so must not be considered as final.]

Fertility of Eggs.—How long after

a rooster is taken from the yards are the eggs fertile and how long before they are fertile after a rooster is put in with hens.

[I would not use eggs for hatching where the male had been more than two days away from them. While some of the eggs would be all right there would be quite a number of infertile ones. It depends on where the egg was when the male was removed and no one can tell these little things that happen in the passage of the egg from the place of starting until laid.

After putting a male into a yard it requires ten days for the eggs to be fertilized. I have tried them at all stages and found that a few would be fertile at eight days; but to make the hatch a success, ten days was required.]

Feather-Eating Ducks.—I have a pen of white Pekin ducks that have the habit of feather picking until their backs are bare. Do I put enough beef scrap in their feed or is it fresh meat they need? Is there something I can put on their back to break them of the habit? E. L. S.

[Feather picking can best be cured by turning the ducks out, or at least giving them more room. Mix black distillate and grease together and smear the bare places. That will help new feather growth and stop the picking. Put a teaspoonful of salt to one quart of water and give to drink just the one dose; no more for two weeks anyway.]

U. S. WOMAN WOULD USE LONDON PARKS FOR HENS.

London, May 25.—Give the hen a chance. With eggs at seven cents each, Mrs. Lionel Guest, daughter of the late John Bigelow, American

ambassador to Paris, is urging a plan here today to turn London's public parks into poultry farms. An enthusiast on poultry breeding, Mrs. Guest has started a crusade to give the hen a chance. She is telling the authorities that every public park should have its chicken farm with a woman expert in charge to show the public how to get the best out of biddy.

Green Park and St. James' Park, near Buckingham Palace; Hyde Park and other expanses of public green-sward have been selected by the American woman as the best locations upon which to try the poultry experiments.

Mrs. Guest declares she has proved her theories by successful poultry farming in Canada and emphasizes that British hens are equal to the task of providing sufficient eggs if enough people would become interested in hen culture.

She has expressed her willingness to keep poultry within the yards of her own house near the fashionable Marble Arch district, police regulations permitting.

Cleveland, May 25.—Mrs. S. T. Brixley put up an elaborate four-apartment bird house in her back yard in Euclid Heights a few weeks ago. She was puzzled when half a dozen or more birds loafed on the roof of the house but built no nests. She finally figured out the situation.

"While their wives were nesting elsewhere, the men birds have been using my birdhouse as a club," said Mrs. Brixley indignantly.

Self feeders for hogs are recommended by the University.

California Poultry Practice

Every poultry raiser of California should have this book. It is very practical and will help make your business profitable. In the preface of the book the author says:

"This book is not an accident; it is born of a desire to help others to avoid the stumbling-blocks in the poultry business, and at the request of many readers of The Pacific Rural Press, and other papers.

"With forty-two years of experience with poultry it is expected that I have learned a few things about it; it's a poor business that does not teach lessons in that length of time. Don't you think so?

"There are books, yes, books without number, on poultry matters, but many of them are mostly theory. This book tells you just what I have done and how I would do it.

"It is a book of action, and it is action that counts these days. We have to act in the living present if we want to live. I want to live and I want others to live, too, and as I have learned these things by experience it is fitting that I should tell others how to obtain results without paying such a big price for the experience.

"The things told you in this book are original, unorthodox, but strictly practical; and if you will read and then heed, you will be well satisfied that the author has given you your money's worth. California is an empire in itself, and I am sure there are enough men and women engaged in the poultry business, or wanting to get into it, to call for a million copies of this book, though its only claim is that it is needed."

The book contains 157 pages, besides illustrations. The 45 chapters cover every phase of poultry culture from eggs to hens, and from hens to market. Feeding, housing and parasites.

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FRESH EGGS STALE.

[Written for Pacific Rural Press by Geo. H. Croley.]

It is not such a very uncommon thing for hens to lay stale eggs, particularly if they are old hens and very fat. In that case many of them will retain the eggs in the egg sack for from 2 to 4 days after it is complete and, under ordinary circumstances, should be laid. The consequence is that the eggs have started to incubate.

There are a number of other reasons for classing absolutely fresh eggs as stale eggs; for instance, the careless use of disinfectants will sometimes taint the eggs and give them a stale flavor; sometimes they take up the odor from some certain nesting material, and sometimes it is caused by something that is eaten by the fowls. Your express agent may be careless and let the eggs stand all day in the sun, and then when they get shaken up on the cars they go to pieces.

RABBIT FEEDING AND EAR SCAB.

To the Editor: I would like to give you a slight call down on your extravagant method of fattening rabbits. In your issue of March 4, you recommend feeding oatmeal, which if followed would drive any rabbit raiser at the present prices of rabbit meat to the poor house. We are feeding between 3 and 4 hundred, and find that we get the best results for the least cash expended, in the following diet: Commencing at the cradle, we feed a doe with young a couple of handfuls of bran mash, just wet enough to hold together, and seasoned with condition powder, recommended by S. F. Streaner in a Sept. Press of last year. A slice of golden tankard beet, and hay complete the day's ration. The mash is fed in the morning. After the young are taken from the mother, we feed beets and hay until about three weeks before time to market them when corn is added to this diet—on the cob preferred. When fed that way about one large cob to 3 or 4 bunnies. If shelled, 6 or 7 lbs. to about 60 rabbits. Now if that won't make them fat, I'll eat them. We do feed some rolled barley by way of a change.

Also on your remedy for scab ear in this week's issue: 5 cents' worth of flour sulphur and a little sweet oil mixed very thin and poured into the ear will cure the worst case with two applications. Taken in the early stages will do the work over night. In either stage it will not be necessary to poke at it or sponge the ear out; the rabbit will attend to that part of it. J. F. Quant.

Sunnyvale.

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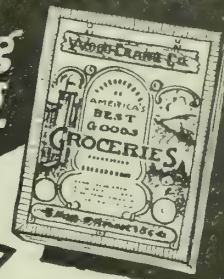
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The Home Circle Page of the Pacific Rural Press

FLORAL DEPARTMENT.

[By Geo. N. Tyler.]

Chrysanthemums that were planted out in early May should have stakes by this time. Singles and pompons that you are growing for the sprays, should have a mulch 1 to 1½ inches thick, of rotted manure or manure that most of the heat has gone out of. Exhibition varieties, and those that you are growing to a single flower, will make a bud this month. It is called the "June bud." This will not make a flower. As soon as the bud forms, side shoots will start from every joint. These should be rubbed off. Toward the top of the plant, select one shoot to make your flower and cut the others off. The sooner you do this after the bud has formed, so much the better, as the plant then makes very little waste wood.

Carnations.—Your benches being filled, give them a good watering, and meanwhile give the plants that are intended for moving into the house, a thorough watering. These should have been planted out in March, and kept headed so no flower shoots form. If there are any flower buds when you start to move them into the house, cut them off. I select a cloudy or cool day to do my transplanting. The greenhouse is thoroughly shaded with whitening. I move any time from August to middle of September; but the earlier the better.

In digging the plants I try to get all the roots. I shake off all the soil, dip the roots in water and the tops in the lime sulphur fungicide to kill all red spider, and the spores of any of the fungus diseases to which the carnation is heir. In planting in the benches I spread the roots out carefully and do not plant deeper than they have been growing in the field. Stem rot is caused by too deep planting. As soon as I have planted six or eight rows, I let the water run on them slowly and thoroughly soak them, so water runs through the bench. After the house is all planted I do not give much ventilation, but spray the tops two or three times a day—to prevent evaporation in the foliage. I also wet all absorbent surfaces, walks, etc., to give out a moist atmosphere. In about two weeks the plants will have made new feeding roots, and started into growth. I then wash all shading from the glass and open the ventilators wide, both top and sides. Leave them open night and day, but continue spraying the plants for another week or two, wetting the soil as little as possible. This causes the plants to make more root growth. When they are well established, I give a 2½ inch potful of hydrated lime across a four-foot bench, this is scratched in and the soil leveled on the benches. I water when the plants dry a little. I give a 12½ inch potful of bone meal across a four foot bench, and at the same time put on about an inch of thoroughly rotted manure, the soil in the benches having settled about an inch. I do not disturb the surface soil after this, as the feeding roots run up into the mulch. After middle of October do not wet the foliage, for by so doing you are liable to start fungus growth.

GERMAN APPLE CAKE.

This appetizing and cheap form of bakery goods for tea-time use is made as follows: Sift one pint flour and 1½ teasp. baking powder and ½ teasp. salt together, rub 2 tablesp. butter into it and then add one beaten egg and enough milk to make a very thick batter. Spread this an inch thick on a greased pan. Have ready several peeled, cored and sliced apples, press the pieces into the batter to nearly cover the top; sprinkle thickly with sugar and a bit of powdered cinnamon, and dot with tiny lumps of butter. Bake this in a hot oven. Sliced peaches or apricots or any other kind of fruit may be used.

FRIED MUSH.

Have the corn meal well cooked, then pour into a square or brick shaped pan rinsed in cold water, or use cocoa cans. Let it stand at least ten hours, then cut in even slices. Beat one egg with two tablespoons of milk and dip each slice of mush in the egg, then into flour, making sure that the surface is well coated. Have the fat deep and smoking hot and fry in a basket not more than four slices at a time. Two minutes will be long enough for the cooking. Serve with maple sirup or honey.

MAKING TRAYS.

Old picture frames of wood, if not too large, can be utilized by making trays out of them. There will need to be a tolerably solid back of wood and on this should be pasted flannel or other soft goods, so that the tray will not scratch a polished surface. Under the glass can be used either gay cretonne, a pretty piece of silk or lace. Metal handles can be screwed to the ends to lift with.

POTATO CROQUETTES.

To a quart of cold mashed potatoes, add one egg, ½ cup milk, ½ cup flour, ½ teaspoon baking powder and a little salt. Mould into cakes and fry until they are a rich brown. The same recipe may be used for rice croquettes.

KITCHEN WALLS.

When the kitchen walls need freshening, have them painted instead of tinting, if you want a wall that will be durable and can be readily kept clean with soap and water.

An appetizing variety of sandwiches may be made from mixtures of shredded meat and chopped boiled egg, cheese and pimentos, nut meats and raisins, lettuce and salad dressing or egg and lettuce.

Use newspapers freely in the kitchen having a convenient place to keep them. Wipe out frying pans and any greasy tins with crumpled paper before dishwashing. Use newspaper for rubbing off the stove after a meal. Spread newspapers on kitchen table when cleaning silver or brass.

RICE WITH STRAWBERRY SAUCE.

Steam cook one cup rice until soft, using one-half water and one-half milk, and serve hot with strawberry sauce made in the following manner: Work one-half cup of butter until creamy, using a wooden spoon; then add gradually while beating constantly one and one-half cups powdered sugar. Wash and hull one quart strawberries, cut in halves, and let stand 15 minutes. Add to butter and sugar mixture and beat until well blended.

HOW TO SERVE LUNCHEON.

To the Editor: I wish to entertain a young lady, a friend of the family, at luncheon, and will serve chicken, mashed potatoes, peas, hot rolls, olives, fruit salad, salted nuts, and suet pudding, if you do not think that too heavy a dessert. Will you please give me directions as to setting the table and serving the meal?—Mrs. E. J. W., San Jose.

To have your table look well, put a good pad under the table cloth; the linen always looks nicer, when it is smoothed over it. In setting your table, place the knife to the right of the plate, with the spoons needed next to it—all an equal distance from the edge of the table. The fork, or forks, go to the left, with the prongs turned up. If you have plenty of silver put all that is necessary on at first; but if you have not, remove the forks and wash them between courses so that you have fresh silver for each course. The water glass which is filled just before the announcement of the meal, is placed above the knife; and the bread and butter plate opposite it on the left over the forks. The napkin, folded in a square, is placed to the right of the place.

As to butter, if you have never made butter balls, cut small neat squares of butter and place them on the bread and butter plate to obviate passing. Also place the roll, very hot, on the plate.

The olives, salted nuts and jelly may be put on the table then also. The jelly to be passed with the chicken, the olives and nuts saved for the salad course; that is, in regard to the nuts if you are not going to use the little colored paper cups which are used to help to carry out the color scheme for decoration; passing them with the salad, however, is perfectly correct.

Broiled chicken is usually served a half to each person; and if that is your plan, serve that course of chicken, mashed potatoes and green peas on a plate hot from the kitchen. The gravy can be passed, and the jelly also, with this course.

As to salad, I would certainly serve it in a separate course, as one's dishes get disarranged and the table looks "cluttered" when too much is on it at one time. A fruit salad would be delicious, but have it dainty, crisp, and cold. Crackers (dainty chips they are called) which are long and narrow are flakier, saltier, and daintier; and if a little grated cheese were melted on them, would make even nicer. The olives and salted nuts come with this course.

For your dessert, I would choose the suet pudding, if you especially excel in the making of it, for that will make your luncheon seem individual; and as this is a family affair, I would let the personal element come into it. It would be nice for you to serve the dessert at the table, and also the coffee then. You said nothing about coffee, but if you were to serve it with the meal, this is the place for it. The fashionable way of course, is to serve small cups of black coffee after the dessert. The lump sugar and cream could be placed when the table is set, before your plate and remain there during the meal so that you would not have

ARTISTIC VASES.

Simple designs in bowls and vases are much more artistic and also at present much better style than the more ornate designs. A simple crystal vase, to be used for one perfect blossom makes a much more beautiful and natural looking bouquet than a combination of many varieties of flowers that are not harmonious in colorings. Baskets in brown colorings are wonderfully beautiful for many flowers—some of these baskets have a tin lining that will hold water. If not, a tin can of the right height will serve to keep the flowers fresh.

WASHING RAG RUGS.

Rag rugs grow dusty and soiled looking after use and if they are not greasy, a good and easy way to freshen them is to spread them on a lawn, wet thoroughly and scrub them with a broom. Keep using plenty of water and then hang on the line and let drip dry. If they are greasy, you will need warm water and soap and a good scrubbing brush, but there is more danger of the colors running then.

TEACHING HOME PURSUITS.

This is a rapidly progressive age. One sign of it is the new attention being given to vital subjects in the schools.

In New York, for instance, teachers are being taught everything from the care of infants to the feeding of husbands.

This is so that the teachers will have a broader knowledge to apply during the instruction of the juveniles in their charge; will be able to pass along to them such facts and suggestions as may seem advisable for them to learn during their school life.

"Well, George, are you perfectly satisfied?" asked his uncle, after the Christmas party was over. "No, uncle, I ain't," was the plaintive reply. "Bless my soul, how's that?" "Why," replied George, "auntie told me to eat as much as I wanted, and I couldn't."

Saucepans that have been burned can be cleansed by boiling a solution of lye in them for a few minutes.

to think of it. You know that it is a cool, calm, and collected hostess rather than the food which makes any dinner or luncheon party a success. And your guest will enjoy talking to you more, I am sure, than she will to see you get up for forgotten things.

After this generous luncheon, fruit really is not necessary; but a prettily arranged basket or glass dish of assorted fruits would be nice, placed on the table with the dessert.

ROSABELLA BEST.

THE GOLDFINCHES' NEST. (A True Story.)

The goldfinches had built in one of the young castor bean bushes, on a swaying branch; and the children had taken almost as great an interest in the nest as the birds themselves. Day by day they watched it and when the four tiny bluish white eggs hatched into little clamoring birds their delight knew no bounds. Even Ruth, who was fourteen and a freshman at high school, spent hours watching the nest. Billy and Betty, the nine-year-old twins, were full of speculations as to the fate of the little nestlings. The parent birds soon became accustomed to being watched. They flew back and forth attending to the wants of their family, with slight regard for curious eyes.

The nest seemed out of the reach of cats and everything looked promising, until one day a dreadful thing happened. A strong wind blew the nest to the ground. After a careful search the children found all four nestlings, still alive, but looking very limp and forlorn.

Ruth ran to her room and soon came back with a small basket. In this the nest was placed and it was carefully tied to the branch. The little birds were put into the nest again and then the children waited to see whether the parents would come back. But all afternoon there was no sign of them. Ruth could not help crying when she was alone in her room and that night she put a black mark in her diary under that day.

The next morning the children were busy working in the garden, when they heard a great deal of noise from the direction of the nest. Surely such a sound could only come from young birds being fed, and when they hurried to the place, the children found that the parent birds had really come back.

The young birds grew very fast after that and it was not many weeks before the last one flew away, but Ruth kept for a long time the basket with the little cup-shaped nest.—Olive Day Thacher.

To keep the Dover egg beater in good condition, do not put to soak after using. Rinse immediately and dry quickly.

Keep a pair of kitchen scissors on hand. They are fine for shredding lettuce, preparing grape fruit and so forth.

Kill All Flies! THEY SPREAD DISEASE

Placed anywhere, DAISY FLY KILLER attracts and kills all flies. Nest, clean, ornamental, convenient, and cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Ask for

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HAROLD SOMERS, 180 DeKalb Avenue, Brooklyn, N. Y.

ABBIE BEN ADAMS.

Abbie Ben Adams, may her life be spared,
Awoke one night, and felt a trifle scared;
For on her shirt-waist box, cross-legged, sate
A Vision writing on a little slate.
Exceeding nervousness made Abbie quake,
And to the Vision timidly she spake.
"What writest thou?" The Vision looked appalled
At her presumption, and quite coldly drawled,
The list of our best people who depart
For watering places sumptuous and smart."
"And am I in it?" asked Miss Abbie.
"No,"
The scornful Vision said. "You're poor, you know."
"I know," said Abbie; "I go where it's cheap:
I can't afford mountains or prices steep,
But, ere you leave, just jot this item down,
I never leave my cats to starve in town."
The Vision wrote and vanished. Next night late,
He came again, and brought his little slate,
And showed the names of people really best,
And, lo! Miss Abbie's name led all the rest!

—Carolyn Wells, in Life.

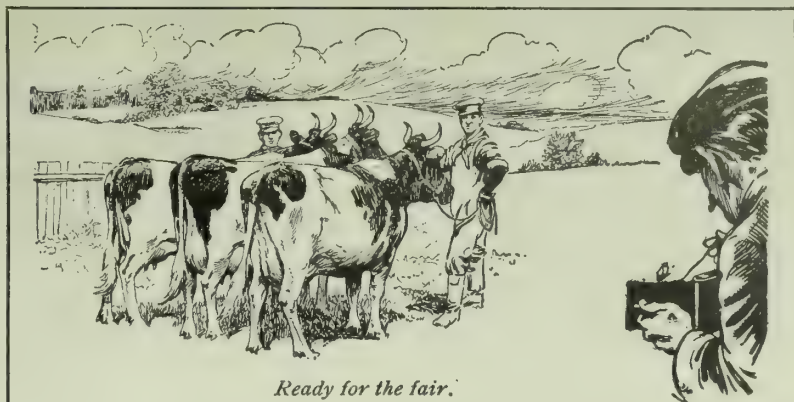
SOFTENING HARD WATER.

To the Editor: I saw in your June 10 issue where some one wanted to know how to soften water. I have found a washing powder that is fine, and does not fade the clothes unless they are the fadey kind. It is called Hippo Washing Powder. It does not hurt the hands and you can use any kind of soap with it. I use Fels Naphtha—have good luck with it; makes the dirt roll out.—Subscriber.

[In softening water for spraying purposes, E. Ralph de Ong of the University Farm School, writing in the monthly bulletin of the State Commission of Horticulture, says that hardness of water may be either "temporary" or "permanent." The former is generally caused by bicarbonate of lime and may be settled by boiling the water or adding quicklime. "Permanent" hardness is due to other mineral salts, and must be treated with some chemical which will unite with the minerals in the water and cause them to settle. Ordinary lye, or sal soda, should be tried. If they fail, add one to three pounds fish oil soap per 50 gallons of water. This unites with the lime, magnesia, and many other salts found in the water, to form an insoluble soap, which may be skimmed off. If this fails, try potash soap. With alkali water use soda ash phosphate.]

After Old Mose had been given a job, says the Lippincott's Magazine, the foreman saw him comfortably on the sand he was to shovel, directing another dusky laborer. "Why, Mose," he exclaimed, "I did not hire that man. What's he doing here?" "I got him er-doing my wuk, sah," replied Mose. "Who pays him?" "I does, sah; I pays him a dollah a day, sah." "Why, that's all you receive, Mose. How do you profit by the transaction?" asked the amazed foreman. "Well," replied Mose, "I gets to boss de job, doan' I?"

A little boy six years old was boasting that he worked in a blacksmith shop. "What do you do there?" he was asked. "Do you shoe horses?" "No, sir!" he answered promptly. "I shoo flies."



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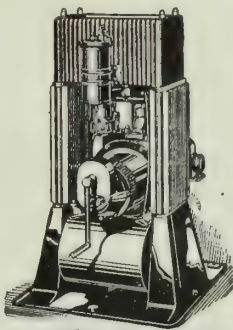


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Peaslee-Gaulbert Co., Inc., Dept 38
Established 1867 Louisville, Ky.

San Francisco, June 28, 1916.

WHEAT.

Offerings of new crop wheat still scarce, and business quiet here, with no strong buying interest. Prices rather easy, and a decline on northern grades expected.

Northern Club\$1.70 @ 1.72½
Calif. Club, ctl. Nominal
Northern Bluestem. 1.82½ @ 1.85
Northern Red 1.80 @ 1.90

BARLEY.

Quite a lively demand for future barley this week, and this is partly responsible for a stronger feeling in the spot grain, though a more direct cause is a heavy rail movement to the East, which helps somewhat to relieve the shortage of ocean shipping facilities.

Shipping, ctl.\$1.35 @ 1.37½
Choice Feed, ctl. 1.30 @ 1.32½

OATS.

Little new stock has come in so far, and with old grain getting scarce, red feed has been marked up a little. Good cleaned stock is held at even higher figures, but little is moving.

Red Feed\$1.40 @ 1.45
White 1.50 @ 1.60

CORN.

Eastern is steady at the recent advance, but there is no great movement here, most of the stock coming in on orders from milling interests. Egyptian, etc., find about the normal demand in outside markets, with only limited trading locally.

Eastern Yellow, ctl.\$1.85 @ 1.87½
Milo Maize 1.40 @ 1.45
Egyptian 1.45 @ 1.50

BEANS.

Beans have this week made the most sensational advance in a long time, everything on the list being marked up sharply. The sudden advance is attributed to a heavy buying movement in the border states, owing to the Mexican situation; as the East and Middle West have been taking only about the normal amounts. Offerings, however, were light, and most varieties are now in very scant supply, with holders anxious to conserve stocks for their regular trade. Small whites are now held as high as \$11, and all white beans are far above all former records, with practically nothing on hand. Bayos and Pinks also have made a remarkable advance, and limas are very strong, with a close cleanup expected. Horse beans are practically nominal, with old stock all gone, while blackeyes are still in fair supply. The acreage in white beans is said to be larger than last year.

(On wharf, San Francisco.)

Bayos, per ctl.\$6.25 @ 6.50
Blackeyes 3.25 @ 3.40
Cranberry Beans 6.00 @ 6.20
Horse Beans 3.25 @ 3.40
Small Whites (south) 9.75 @ 11.00
Large Whites 9.25 @ 9.50
Pinks 6.96 @ 7.25
Limas (south) 6.50 @ 6.75
Red Kidney 8.00 @
Mexican Reds 5.50 @ 5.60
Tepary Beans 4.50 @ 4.75

HAY.

No. 1 and medium grades of the new crop hay are now coming in freely, but the arrivals have not been very greatly in excess of current needs, and prices are well sustained throughout the list, all offerings being readily disposed of. Fancy red oat hay is especially strong, but is expected to decline as more is offered. The larger dealers here state that they are buying little for future requirements, feeling that the future tendency of prices is likely to be downward rather than upward. The amount of grain acreage cut for hay is said to be above early estimates, which will materially increase the tonnage. Export trade is rather light, and coastwise shipments are tied up by the water front strike. Alfalfa is in strong demand, and is quickly bought up, though arrivals are increasing.

Wheat, No. 1\$12.00 @ 13.50

Special Deciduous Market Report.

By J. L. Nagle.

Sacramento, June 26, 1916.

There is practically no change in the Eastern situation and the demand continues active on all varieties. There has been an occasional slump on peaches due to unseasonable weather.

Eastern states are now shipping peaches—Alabama, Georgia, Oklahoma, Texas—but in no section is the crop heavy.

Estimates of shipments of Georgia peaches for the season are as follows: For the week ending June 24, 100 cars; July 1, 300 cars; July 8, 650 cars; July 15, 900 cars; July 22, 1000 cars; July 29, 300 cars; and light shipments the fore part of August.

The following prices have ruled for the week:

New York. — Royals averaged

No. 2 9.00 @ 11.50
Tame Oats 11.00 @ 14.00
Wild Oats 10.00 @ 12.00
Barley 10.50 @ 12.50
Alfalfa 10.00 @ 13.50
Stock Hay 10.00 @ 13.00
Straw, per bale25 @ .40

FEEDSTUFFS.

There is nothing new in feed prices, the consuming demand being fairly active for this time of year, though the local movement is of no exceptional volume.

(Wholesale prices, per ton, carload lots, San Francisco.)

Beet Pulp, per ton ..\$22.50 @ 23.50
Alfalfa Meal, per ton. 17.50 @ 20.00
Alfalfa Molasses Meal, per ton Nominal
Bran, per ton 28.00 @ 29.00
Oil Cake Nominal
Cocoanut Cake or Meal 23.00 @ 25.00
Cracked Corn 40.50 @ 41.50
Middlings 35.00 @ 36.00
Rolled Barley 28.00 @ 29.00
Tankage 45.00
Rolled Oats 29.00 @ 30.00

VEGETABLES.

Numerous lines of summer vegetables are now coming into the market in large quantity, causing a general easing of prices, though on the whole values are fairly high for this time of year. Cucumbers have dropped again, and further weakening is expected. String beans hold steady, and choice peas are well maintained, though off lots are cheap. Summer squash, eggplant and bell peppers are all lower, and tomatoes are rapidly getting down to the midsummer level, though offerings are not yet over-large. Rhubarb is about gone, while asparagus is in liberal supply. Green corn has dropped sharply, with rather large arrivals of fancy stock.

Cucumbers, lugs75 @ \$1.00
String Beans, lb 4 @ 7 c
Summer Squash, lugs... .90 @ 1.00
Peppers, bell, lb 8 @ 10 c
Asparagus, box 1.25 @ 2.00
Lettuce, small crate .50 @ 65 c
Eggplant, lb. 5 @ 7 c
Peas, lb. 2½ @ 4 c
Tomatoes, crate 30 @ 60 c
Green Corn, sack 1.25 @ 2.50
Okra, lb. 5 @ 7 c

\$1.64; Tragedy plums. \$1.73; Formosa, \$1.66; Climax, \$1.55; Santa Rosa, \$1.65; Burbank, \$1.36; Clyman, \$1.10; Abundance, \$1.27; Triumph peaches, 94c; Wilder pears, \$1.98; R. Anne cherries, \$2.05.

Chicago.—Climax plums, averaged \$1.22; Tragedy, \$1.52; Burbank, \$1.22; Santa Rosa, \$1.62; Formosa, \$1.48; Royal cots, \$1.55; Triumph peaches, 75c; Hale, 62c; Alexander, 62c; H. B. Comet pears, \$1.50.

Boston.—Climax plums, \$1.37; Tragedy, \$1.80; Burbank, \$1.30; Formosa, \$1.42; Santa Rosa, \$1.30; Abundance, \$1.32; Clyman, \$1.18; Triumph peaches, \$1.10; Alexander, 97c; Royal cots, \$1.25; H. B. Wilder pears, \$1.45.

[Total shipments to June 27, 1675 cars as against 1096 to same date 1915.]

POTATOES AND ONIONS.

Everything in this line is quite firm. Oregon potatoes are about out, and new local stock is in some demand for shipment, besides being in rather light supply. Prices show a wide range, fancy upland stock from Los Angeles doing best, while off-grade River stock is easy. Some of the local dealers say the crop is very short, partly due to the frost, but more to a reduction of Delta acreage. This they attribute to the system of absentee ownership and farming by Oriental labor on shares, under which much of the Delta potato land has been ruined; and say there is need of a reliable class of growers, who will work on scientific principles and make a fight on diseases.

Onions are still very strong, with a demand for shipment both north and south, and high prices are paid without distinction of grade or variety, growers getting \$2.15 to \$2.35 on the bank. The crop is unusually late, and prices are expected to get down to normal within the next month.

New Potatoes, ctl.\$1.45 @ 2.25
Onions, red 2.25 @ 2.50
Yellow 2.25 @ 2.50
Garlic, new crop, per lb .. 6 @ 7c

POULTRY.

Young stock continues to arrive in excessive quantities from nearby egg districts, with a good many carloads from the East, and values continue easy. Fryers have been shaded a little, other lines standing as before.

Broilers, 18 lbs. to doz. and less, lb. 20 @ 21c
do, over 18 lbs. to doz. .21 @ 23c
Fryers 23 @ 27c
Hens, extra, per lb. 19 @ 20c
Small 15 @ 17c
Smooth Young Roosters, per lb. 25 @ 28c
Squabs, per doz. 2.00 @ 3.50
Geese, per pair 2.25 @ 3.00
Ducks 15 @ 16c
Old 14 @ 15c
Belgian Hares 8 @ 9c

BUTTER.

Prices have shown no change

since a week ago, except for a slight drop on the lower grades. Arrivals continue large, and the local demand is quiet, while shipping business has been very light for some time.

Extra 24½ 24½ 24½ 24½ 24½
Prime Firsts 23½ 24 24 24 24
Firsts 23½ 24 24 24 24

EGGS.

Extras have fluctuated between 24 and 25c for the past week, the latest figure being the lower. The demand on the street is light, as usual in the summer, and conditions in other markets do not warrant any shipping business.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras 24 25 25 25 24
Sel. Pullets 22½ 22½ 22 22 22 21

CHEESE.

The recent activity in cheese has given place to a rather sluggish condition, though so far there has not been enough accumulation of stock to cause any decline in values.

Y. A.'s fancy 16 c
Fancy Calif. Flats, per lb 15 c
Monterey Cheese 16 @ 17 c
LOS ANGELES DAIRY PRICES.

Butter 25 25 24 25 26 26
Eggs 25 25 24 24 24 24

DECIDUOUS FRUITS.

Most lines of berries show a further decline, fancy strawberries, raspberries, blackberries, and currants all being in liberal supply at easy figures, while logans are slightly firmer. New apples are more plentiful and the old stock will soon be crowded out. Pears are, still scarce, but the quality does not warrant any fancy prices. Offerings of cherries are limited to Oregon stock, which is firm; while apricots are easy, with plenty of good stock arriving in lugs. Values, however, are held pretty well up to the quoted range, with nothing given away. Peaches are lower, and a good deal of cheap stock is appearing in lugs and baskets. Black figs are weak, with heavy supplies. Most lines of plums are lower, though some fancy stock still brings high prices. Cantaloupes are rather firm, and watermelons have not yet gotten down to the midsummer level. Grape offerings are limited to Thompsons, which are easier.

Currants, chest \$3.00 @ 4.00
Loganberries, chest 2.00 @ 3.00
Gooseberries, lb 3 @ 6 c
Blackberries, chest 3.50 @ 4.00
Raspberries, chest 4.00 @ 5.00
Strawberries, chest 3.50 @ 6.00
Apples, old75 @ 1.00
green, box75 @ 1.25
Pears, Lawson, box 40 @ 60c
Bartlett, box75
Cherries, Oregon, box ... 1.25
Apricots, crate50 @ .75
do, lugs 1.00 @ 1.40
Peaches, crate50 @ .75
Peaches, crate50 @ .75
Figs, black, box 25 @ 35c
White 25 @ 35c
Plums, crate50 @ 1.25
lugs 1.00
Cantaloupes, standard
crate 1.25 @ 1.50
Watermelon, lb. 1¼ @ 1½ c
Grapes, Thompson, crate 1.00 @ 1.25

DRIED FRUITS.

The only new feature of much interest is the establishment of a firm figure of 6c for new crop peaches. Large contracts on this basis have been made at Vacaville, Fresno, and other places, and there seems to be nothing obtainable under this figure. Old peaches are about cleaned up, and a good many are said to have been bought at over 5c. The trade no longer shows any reluctance in taking hold of the new crop, and a considerable tonnage has already been moved. Apricots are extremely firm, and offers of the top price quoted have brought out only a limited amount of fruit, as much of the crop is being used for canning and shipping, and holders of dried fruit feel warranted in keeping off the market for the present. Packers are still not inclined to meet the growers' figure of 6c for new prunes; and business in this line is slow,

Special Livestock Market Report.

Cattle.—The week may be characterized as one of the poorest ever encountered by killers so far as outlet is concerned; and this naturally reacts on prices in the country. The whole situation may be summarized by the statement, "plenty of cattle offered but little buying."

Sheep.—There is very little activity in sheep, largely due to high prices which are restricting consumption. A few choice Nevada lambs were received during the week, but otherwise few lambs have arrived.

Hogs.—Limited quantities are arriving and those of poor quality.

This is giving packers a chance to clear their storerooms of last spring's pack. No large receipts are now expected till the stubble hogs appear in the fall. The biggest announcement for the week is that two packing houses are to be built at once in Idaho and Utah to consume the Idaho hog supply. Offices will be opened in Los Angeles and San Francisco in an attempt to market the finished product. If successful this move means the elimination of the Idaho live hog in California markets.

Wool.—There is a lack of activity locally, quotations remaining the same as last week.

though there is some buying to take care of early requirements. Figs are as firm as ever, with California practically the only source of supply. The Associated Raisin Company has named export prices, 10 per cent above last year, and new figures on seedless are expected shortly.

Apples, old crop	5 1/2 @ 6 c
Apricots, per lb., 1916	12 1/2 @ 13 1/2 c
Figs, white, 1916	6 1/2 @ 6 3/4 c
Black, 1916	5 @ 5 1/2 c
Calimyrna, 1916	9 @ 10 c
Prunes, 4-size basis, 1915	5 c
1916	5 @ 6 c
Peaches, old	5 @ 5 1/2 c
1916	6 c
Pears	5 @ 6 1/2 c

(Associated Raisin Co. Prices.)

Fancy Seeded, 16 oz.	7 c
Choice Seeded, 16 oz.	6 3/4 c
London Layers, 3-crown,	
20-lb. box, 1916	\$1.30
Imperial Clusters, 6-crown,	
20-lb. box, 1916	2.75
Bulk, layers, 50-lb. box, 1916	2.75

CITRUS FRUITS.

On June 26 Valencias, with 35 cars sold, were lower in New York, averaging \$2.80 to \$4.60; lemons averaging \$2.15 to \$3.85. In Boston, 16 cars Valencias averaged \$3.55 to \$4.15 and lemons \$3.25 to \$4. In St. Louis 9 cars sold at \$2.05 to \$3.70 average for Valencias and \$2.65 to \$3.60 for lemons. This season 28,580 cars of oranges and 4,772 of lemons have been shipped from Southern California to June 26.

In San Francisco navel oranges are now all cleaned up, and Valencias are in fair demand for this season, fancy stock bringing a slight advance. Grapefruit and lemons are moving well, and the top figures in both lines are higher.

Oranges, Valencias, ...	\$2.75 @ 3.25
Grapefruit	1.50 @ 2.75
Lemons, box	1.75 @ 4.50
Lemonettes, box	1.50 @ 2.00

HONEY.

So far the new crop has been extremely light, and while the most pressing trade needs locally have been supplied, there is still quite an active demand. New comb is coming in fairly well, but water white extracted has been practically cleaned up for several days, and a small lot just arrived is held at 9c, none having been sold as yet.

"THE FARM MORTGAGE."

Like most city real estate owners, farm owners operate their properties on a mortgage basis either to finance the purchase of more land, or to pay for improvements and developments that may be expected to pay more than interest on cost.

But unlike the owner of city real estate the country borrower, through lack of established facilities, has had to pay excessive rates of interest for his loans.

After a thorough study of conditions affecting the security of farm mortgage loans, I have convinced some of the large financial interests of San Francisco that to put their funds into loans to farmers at fair rates is the safest kind of an investment.

I am now prepared to receive applications for loans of any amount on good money-making farms and ranches. While there is over a million dollars available at this time, the small loans will be considered as carefully as the large ones.

Send full detailed description of the property and the loan wanted.

CAREY S. HILL,

417 Montgomery St., S. F.

Dividend Notice

The German Savings and Loan Society

(The German Bank)

526 California Street, San Francisco.

For the half year ending June 30, 1916, a dividend has been declared at the rate of four (4) per cent per annum on all deposits, payable on and after Saturday, July 1, 1916. Dividends not called for are added to the deposit account, and earn dividends from July 1, 1916.

GEORGE TOWNY, Manager.

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Attractions**

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Purses**

Including New Women's Building (to be formally dedicated during the Fair), New Poultry Building and Live Stock Barns, Immense Exhibit of Manual Training and Domestic Science by California Schools, Miners' First Aid and Mine Rescue Competition, Horse Racing, Night Horse Show, Grand Band Contest, Head on Collision, Fire Works, Free Attractions—Clean Amusements, Grand Rally California Miners' Safety Bear Club.

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Send for Premium List.

CHAS. W. PAINE, Secretary.

JOHN M. PERRY, President.

HONEY.

Water White, comb	13 @ 15 c
Amber	10 @ 12 c
Water White, extracted	9 c
Light Amber, new	4 @ 6 c
Dark	4 @ 4 1/2 c

HORSES.

The principal feature at present is buying for the U. S. Army, bids having been taken Monday for 26,550 mature cavalry horses, 15,900 mature artillery horses, 192 light drafters, 8,100 each lead and wheel mules, and 4,000 pack mules. It is expected that California will furnish less than 10,000 of the animals wanted. In the local bidding, the cavalry horses were offered at about \$180; pack mules at \$140, lead at \$175, and wheel mules at \$200. With this inquiry on top of the recent European buying, horses are getting very scarce all over the country; though some stock that will not classify for army use is rather slow of sale, the local demand being light. It is predicted in some quarters that the horse market will be strong for a long time, owing to the need for farm stock in Europe after the war.

HORSES.

(Approximate values in San Francisco, based on auction sales.)	
Drafters, 1700 lbs and up	\$250
Drafters, 1550 to 1650	150 @ 200
Chunks, 1350 to 1500 lbs	150 @ 175
Wagon horses, 1050 to 1350 lbs	110 @ 150
Green Mountain range horses, 950 to 1200 lbs	20 @ 75
Farm workers	50 @ 100

LIVE STOCK.

(Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.)	
Steers, No 1	6 3/4 @ 7 c
No. 2	6 1/2 @ 6 3/4 c
Cows and Heifers	5 3/4 @ 6 c
No. 2	4 1/2 @ 5 c
Bulls and Stags	4 @ 4 1/2 c
Calves, light	7 1/2 @ 8 c
Medium	7 @ 7 1/2 c
Heavy	6 @ 6 1/2 c
Hogs, grain-fed:	
100 to 150 lbs	7 3/4 c
150 to 250 lbs	8 1/4 @ 8 1/2 c
250 to 325 lbs	7 3/4 c
Prime Wethers	7 @ 7 1/2 c
Spring Lambs, f. o. b.	
country points	\$5.00 @ 5.50

WOOL.

(Prices paid in the country.)	
Red Bluff, year's	25 @ 27c
Sacramento Valley, year's	19 @ 25c
Mendocino, year's	31 @ 32c
Mendocino, 7 months'	26 @ 27c
Southern, year's	18 @ 21c
Southern, 7 months'	15 @ 18c
Imperial Valley, year's	17 @ 19c
Imperial Valley, 7 mos.	14 @ 15c
Nevada	21 @ 23c

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.			
Week	San Francisco		Los Angeles
Ending	1915	1916	1915 1916
Jan.	2....28.60	28.00	28.20
"	9....25.33	26.66	26.00 28.10
"	16....27.50	27.83	26.83 28.16

"	23...30.66	28.25	30.66	28.50
"	30...28.66	36.33	28.00	36.66
Feb.	6...26.68	30.25	26.80	32.32
"	13...26.74	31.40	27.00	33.25
"	20...29.00	32.00	27.16	32.00
"	27...29.10	30.90	27.00	35.25
March	6...27.00	24.08	25.25	24.16
"	13...24.66	29.91	24.00	28.83
"	20...23.00	28.33	22.50	27.16
"	27...22.91	28.50	23.00	28.03
Apr.	3...23.00	28.50	22.23	28.83
"	10...23.08	29.31	22.00	28.00
"	17...23.00	27.33	22.00	27.50
"	24...23.00	25.25	22.00	25.00
May	1...23.08	24.33	22.00	25.33
"	8...23.00	24.10	22.00	25.00
"	15...23.16	22.25	21.96	25.00
"	22...23.75	23.16	22.90	20.83
"	29...23.08	24.16	21.83	22.50
June	5...23.90	25.50	23.00	27.00
"	12...24.38	25.83	23.83	27.00
"	19...25.16	24.50	26.00	25.91
"	26...25.50	24.50	26.16	25.91
July	3...25.83	26.16		

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.				
Week Ending	San Francisco		Los Angeles	
	1915	1916	1915	1916
Jan.	3...38.50	35.60	42.00	35.00
"	9...32.66	31.41	35.16	32.00
"	16...31.00	30.33	30.33	30.75
"	23...30.50	34.83	30.00	34.33
"	30...28.16	36.33	28.66	36.66
Feb.	6...23.33	35.66	23.75	35.50
"	13...23.00	28.90	25.10	28.00
"	20...23.60	23.66	23.58	20.33
"	27...21.40	20.30	20.80	18.50
March	6...20.50	18.33	19.00	18.00
"	13...20.66	19.50	19.00	18.91
"	20...21.00	20.00	19.66	19.08
"	27...20.83	21.41	18.50	20.83
Apr.	3...	21.75		21.00
"	10...	22.00		21.00
"	17...22.00	21.16	23.08	20.91
"	24...21.80	21.83	22.25	22.58
May	1...26.16	21.00	22.00	22.58
"	8...23.33	21.20	22.00	21.41
"	15...23.58	24.58	23.00	25.66
"	22...23.58	25.46	23.00	25.00
"	29...23.50	25.33	23.00	26.50
June	5...22.50	25.00	20.70	24.41
"	12...22.00	25.00	21.00	24.16
"	19...22.00	24.83	20.00	23.75
"	26...23.33	24.66	23.83	24.58
July	3...23.83		22.50	

Publisher's Department

The demand for our newest book "Second Thousand Answered Questions in California Agriculture" continues brisk as ever. Have you sent for a copy? Ask for the special offer we make (to subscribers only) on this useful book of reference.

During the past week, as is our custom at this season, we have switched our subscription men from the valleys to the mountain and coast sections. Naturally some time was lost making the changes and our gain for the week dropped to 147 new subscribers; but with invigorating sea breezes and refreshing mountain air, we shall not be surprised to see them make up the shortage within a few days.

A hyperimmune serum to stop progress of blackleg has been perfected by the Kansas State Agricultural College.

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AVOCADO TREES for sale, fine field-grown budded or Budded Avocados. Newberry-Sherlock, E. F. D. 2, Pasadena, Calif.

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WANTED—About sixty young men and women to enter the Western Normal to prepare for teaching, or to secure a high school education in the shortest possible time. Western Normal graduates secure and hold good positions. Time and money saved. For information address Western Normal, J. K. Humphrey, Principal, Stockton, Cal., Box 704.

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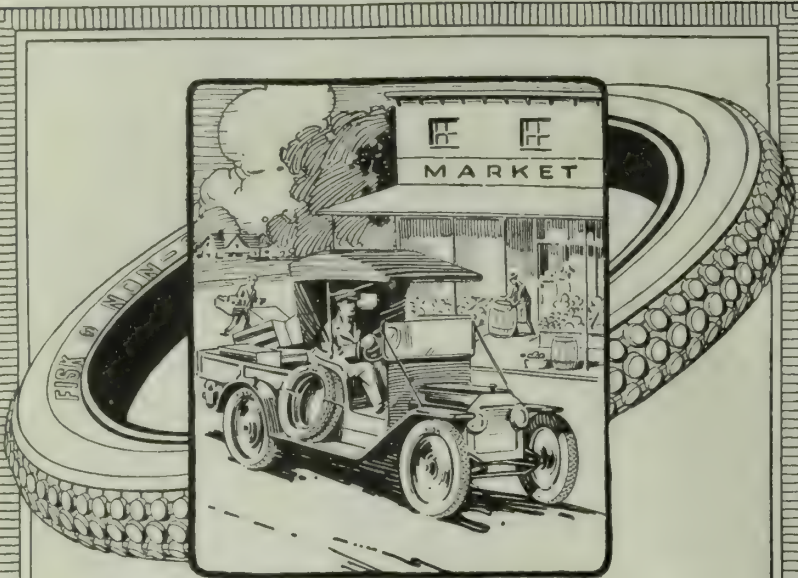
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PACIFIC RURAL PRESS, PUBLISHERS

THE PACIFIC RURAL PRESS

SAN FRANCISCO

JULY 8, 1916.

LOS ANGELES

Improving Rural School Conditions.

What Organized Effort on the Part of Farmers in Napa County Has Done Toward Improving the Rural School and How it Came About.

[Written for Pacific Rural Press.]

THE rural school as seen in most of the older settled agricultural communities is the acme of standpatism in educational matters and, strange to say, is one of the last of the farmer's problems to receive recognition by the progressive farming interests.

Anyone at all familiar with farm life, is acquainted with the country school. It has lost none of its individuality since it first became popular in song and story; and, except for a more antiquated appearance, inside and out, it presents the unpleasing architecture of 30 years or more ago.

Of the 51 school districts in Napa county, 48 are essentially rural and consequently filled the above description for a number of years. Two years ago they were no better or worse than the average in the State. Now they are better than the average and the work has only commenced.

Parents Dissatisfied.—It all came about through the monthly meetings of the various Farm Centers in the county. Before the establishment of the Napa County Farm Bureau, Napa county parents had a vague idea of conditions at their district school. "As soon as parents become acquainted with conditions they demand better ones," says Farm Advisor H. J. Baade. And the Farm Center meeting each month impressed the parent with the poorly equipped school house. In other words, familiarity soon bred contempt; and contempt demanded improvements.

Because of this the County Farm Bureau appointed an Educational Committee in November, 1914, to investigate all of the rural schools in the county in regard to equipment, light, sanitary conditions, etc.

This committee made their first report April 10, 1915, stating that conditions were worse than had been anticipated. Later this committee reported that the sanitary conditions were very poor, that most of the school houses had cross light (windows on both sides of the room) and that but very few districts provided fresh drinking water.

Through the efforts of the committee, a meeting was held in May consisting of the County Superintendent of Schools, the clerk of each board of school trustees and the school trustees and teachers in the northern part of the county.

At this meeting an organization was perfected to take up the financial problems and to devise a Standard School score card for the county, in order that each school might know how it stood in the matter of sanitation, lights, general appearance, etc.

Condition of Schools.—After two months' work of the enlarged organization, a joint meeting of the Napa County Board of Education, representative of the Napa County Farm Bureau, and School Trustees was held.

At that time, the original Educational Committee reported that but two schools in the county had modern drinking fountains; that of the 51 schools, there were 22 where the water was either unfit or no water at all on the school premises, necessitating the carrying of water from adjacent farms; that with but seven exceptions every rural school house had cross lights; that the outbuildings were a disgrace to the community in a majority of cases; and that school buildings were in bad condition as well as the grounds.

This enlightening report brought results. Besides outlining the qualifications of a "Standard" or "All Star" school, as given on another page, a method of securing the necessary funds was evolved.

Those with experience in securing funds for rural school improvement will appreciate this feature of Napa county's school story, for the financial problem is always an important one.

Getting the Money.—In this case the suggestion came from the County Superintendent of Schools, who recommended that an application be made by trustees of the various school districts, to the County Superintendent for funds, secured by special tax in the districts to be benefitted (in excess of moneys derived from State and county funds); an estimate

of the required amount being submitted, in accordance with Section 1840 of the Political Code of California. This application also requested the County Superintendent to approve this estimate and submit it to the Board of Supervisors, who in turn would levy a special tax in the districts benefiting.

This took the improvement of rural schools largely out of the hands of the taxpayers, it is true, for it did not allow public voting as to whether the tax would be raised or not. But this proved a decided advantage, as it made improvement possible in face of the taxpayer who

is always opposed to additional taxation. The net result of this joint meeting was the filing of 22 applications by as many districts for a total sum of \$17,741.50. These were granted by the supervisors and raised by special tax.

The uses to which this money was put were various, each school spending the money on the features deemed most necessary. This naturally called for various sized funds. One district that spent \$850, used it for the following purposes: Pump house and tank, motor and pump, two toilets, septic tank, pipe and plumbing, shed for horses, heating appliances, changing lights, houses for toilets, flag and pole, and painting, inside and out.

Spending Wisely.—That this money might be wisely spent, score cards of what was considered a "Standard School" were printed and hung in each school room, thus acquainting parents and children, as well as the trustees, with the qualities of a model school.

To create rivalry and at the same time show what each school was lacking, the County Superintendent pasted small gold stars opposite all requirements as fast as each one was complied with. Thus the schools have come to be known as "Star" schools, the rating being based on the number of stars secured.

(Continued on page 31.)



The Soda Canyon School Before the Erection of the Flag Pole which is now in Place. The First "All Star" School in Napa County and Perhaps in the State.

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J. C. LOOMIS - Assistant Editor

EDITORIALS

THE WEEK.

BOTH Uncle Sam and the bad small boy who has been twiddling his thumb over the south fence seems to be getting to a better understanding of each other, and it may be that a diplomatic spanking will be all that settlement will require. Carranza seems to be most anxious to save his face: it does not seem to matter so much to him what happens elsewhere. If it does stop short of war the experience of the last two weeks will be roundly profitable as a maneuver, for it will show what we could do in massing troops, munitions, and supplies in a moment, if a real occasion should arise. It will give to those who attend to such matters very concrete suggestions as to what we need to do to be safe. It also furnishes some practical demonstration of what those goodly persons, the professional peace-makers, can be expected to accomplish when mankind gets its mad up. The peace-maker seems really to be situated as was the neighbor who interfered when a man was trying to beat his wife—and we are glad they are a thousand miles away from the border. We would grieve to lose our peace idols, even though they are chiefly gilt on wood. We shall be very glad to learn all we can about war, without getting into it, and that seems to be the present prospect.

And there is another good line of consolation—or of warning against being over-scared before we are hurt. Just run over present indications of activity in fruit shipping and preservation and prices which are being paid, and then remember all the sobs which were sobbed by commercial fruit shippers last winter when they saw an abundance of embargoes and such a scarcity of ships that they thought fruit could not possibly be worth picking up from the ground this summer! And now they are running around paying almost as much per ton for fresh fruit as they feared they could not afford to pay for dried! But those whose business it is to buy are not to be blamed. If anyone is to be blamed it is the one who is scared into selling before there is any crop to sell and before anyone can tell what the warrant is to be for buying.

WHAT WILL THE EMBARGOES DO?

WE DOUBT if there is any real reason to be scared by embargoes. If the war goes on, as now seems most unlikely, it must be remembered that embargoes do not apply to supplies needed for the armies. They must have dried and canned fruits and we imagine this fact has something to do with the enlargement of buyers' views and the splendid activity of their establishments. And that seems perfectly safe, for if peace stops the war demand, it will also open ports to supply millions of famishing people who have been on short rations for months, and even years, and any hungry man can realize what such people will do. Fear is also expressed lest certain exclusive trade policies talked of by France and England, after the war,

should operate against our products. Such discussions may be well enough to keep non-combatants thinking they are doing something patriotic, and after the war people will do what they like, and more of it because they have been so long under restraint. Our Canadian cousins are getting some consolation from the hope that some special privilege will give them a better market for fruit jams such as they can produce. We hope it will be so, but they should remember that jam will not satisfy everyone. We read the other day that George is not content unless Mary sets out canned peaches from Sutter county, California! George is right: he is full of practical statesmanship.

RURAL CREDIT ARRIVES.

ALTHOUGH there were interesting utterances on the subject earlier, six years ago formal discussion of organized rural credit, as a lending method different from all lending methods hitherto prevailing in this country, began with an address before the Ohio Bankers' Association by Myron T. Herrick in 1910. Four years ago (in April 1912) David Lubin proposed to the Southern Commercial Congress that about a hundred special students, appointed by the general and state governments, should make a long tour of study and observation of rural credit in European countries, and this was accomplished in 1913. Four years ago (in June, 1912) the conventions for presidential nominations of republican, democratic and progressive parties placed demands for rural credit provisions in their national platforms. Three years ago (in July, 1913) the students sent abroad for rural credit investigation returned and presented their report, which was published by Congress. Two and a half years ago credit by congressional enactment began to appear in both houses of congress and it is said that something like sixty such bills were introduced and committees of both Senate and House began formal consideration of the subject. One and a half years ago (Feb. 16, 1914) the committees of both houses in joint session began to hold hearings and recorded 964 printed pages of testimony which was printed by the government. Last year (1915) the committees boiled down the bills referred to them into substitute bills of their own and favorably reported them. Later in the year these bills were considered in joint committee and after months of debate they reported a new bill during the early months of 1916. As the bill of the joint committee underwent amendment in both houses, it became necessary to consider these amendments in conference committee and agreement was reached so that the same bill passed both houses and was sent to the President last month. Now the announcement comes that the President will sign the bill and soon make the federal appointments which are provided to make it operative.

HOW IS THE NEW CREDIT TO WORK?

THERE is so much variation in the outlines of the new law which come to us that we are not at the moment sure of its specific provisions and must wait a little until we receive an authoritative copy. This much is clear that no money can be forthcoming until intending borrowers organize themselves into what the law calls "national farm-loan associations" and they must be organized as directed by the law and by regulations to be issued by the Federal Farm Loan Bureau which will be organized in the Treasury Department in Washington. Therefore nothing can be done until the machinery at the government end is installed and put in operation. It can be seen, however, that the initiative is in the local association of intending borrowers. There is no way by which an individual borrower can approach the source of funds except as he associates himself with others in his vicinity (who also wish to borrow) in a "loan association"—unless he may become associated with them by a bank, which by complying with prescribed conditions, may share in the dispensation of rural credit. When the borrowers form loan associations, as prescribed by the law, the latter start onward to membership in district land banks (which

can issue bonds upon the mortgages of the loan associations) and onward to connection with the United States Treasury, which by furnishing funds may participate in, and must regulate, the operations of these land banks.

As the way to begin is naturally most interesting to those thinking of applying for rural credit loans, we take a few provisions from the latest copy of the law we have received and which are probably reasonably the same as in the final enactment:

Ten or more persons who are the owners, or about to become the owners, of farm land qualified as security for a mortgage loan, may unite to form a national farm loan association: the loan desired by each person is not more than \$10,000 nor less than \$100 and that the aggregate of the desired loans is not less than \$20,000; each person desiring to borrow shall subscribe for shares of stock in the association to an amount equal to 5% of the desired loan—such subscription to be paid in cash upon the granting of the loan. Shareholders shall be individually liable to the extent of the amount of stock owned by them at the par value thereof in addition to the amount paid in and represented by their shares. No loan shall exceed 50% of the value of the land mortgaged. No loan shall be made to any person who is not at the time, or shortly to become, engaged in the cultivation of the farm mortgaged. The time for loans to run shall be from five to forty years and cancelled by amortizing payments, but more, even to the whole obligation, may be sooner paid on proper notice.

The interest on the loan shall not be more than one per cent greater than the interest paid to the holder of bonds issued on the mortgage, and heavy penalties are prescribed if any officer of an association should receive any commission, fee or perquisite for making a loan.

Thus it appears that the first thing to do to get rural credit is to get together. This will be much easier through existing rural organizations wherever they exist. In any local grange, union, farmers' club, fruit exchange, etc., etc., those who desire loans for farm equipment, land purchase or improvement or other legitimate farming purpose, can move towards rural credit by gathering such intending borrowers into suborganizations which can comply with the rural credit requirements. The way to begin would be to set the subject for general discussion, in the course of which those personally interested would disclose themselves to each other. As soon as a local farmers' organization gets into action on this live topic its affairs will command new interest in the community and desirable additional membership can no doubt be had, which will help the society in all its undertakings. We have an idea that rallying farmers around the subject of rural credit will awaken new interest in co-operative endeavor generally and give new force for the solution of marketing and other problems which are now presenting themselves for concrete action. What group of our readers will move first along this line and write to us that they are on the way?

FACTS WHICH WILL GOVERN.

OUR esteemed contemporary, the California Fruit News, goes at it, to the width and depth of a page of type, to demonstrate the horrible danger there is in the well-capitalized, corporate organizations of producers to protect and promote the sale of California products. Our esteem for our contemporary rests upon its editor's manifest disposition to state facts carefully and conscientiously, and we are not surprised to find ourselves perfectly in accord with him in his statement of the following facts, viz:

First: Any one can buy stock in these corporations.

Second: If growers who make contracts to sell their products are the same who own the stock, the thing is fine, but this need not be the case and if it is so in large part at one time it need not be at another time.

Third: It is among the possibilities that contracting growers may find themselves on the outside and only looking in at the institution which was built up at their expense.

Fourth: There is a difference between the ownership of the stock of these institutions and the ownership of the product. They should be identi-



cal, otherwise it is not a growers' co-operative institution.

Fifth: These organizations are being built up in such a way that the operators may be one thing and the growers another, and they may or may not be the same in large or small part. When growers' contracts expire the brands and the business belong to the corporation and not to the growers.

We acknowledge that these are facts, and they have alternative consequences all the way from high good to low evil and the jack of chicanery can jump in if the growers do not watch out and hold on to the game. Now "calamity howling" consists in seizing upon the worst possibilities and making bogey-men out of them, and at the same time ignoring the facts which make the best possibilities practically sure of realization. That is what our contemporary is doing. And what are the facts which will really govern in the conduct of these organizations? We will try not to indulge in argument, but simply state facts so great, glorious and illuminating that our contemporary will be ashamed of the little black devils which make him shiver with fear:

First: The great, shining and illuminating fact is that growers' preponderance in ownership of such an incorporation notably increases as success is demonstrated. This is the experience of the raisin growers' corporation and the fact has 100 per cent efficiency, because it is the only fact there is to demonstrate growers' attitude in this type of organization.

Second: All non-producer stock-owning in the raisin association, and all stock subscriptions in newer corporations which will follow its example, are by organizations and individuals who consider their interests identical with the growers' interests and believe their own prosperity and patriotic satisfaction lie in backing the growers to the attainment of their fullest requirements and amplest rewards. This is a declaration of noble purpose on the part of these outside stock-owners, which a calamity howler impeaches at his own peril.

Third: These supporting stock-owners are acting as trustees for public opinion and their action is the most concrete and emphatic demonstration possible of what that public opinion is. Public opinion is most glorious to reflect: it makes a man's heart swell. Public opinion is most dangerous to defect: it is calamity howling.

Fourth: Without the public-spirited co-operation of individuals and institutions of financial power and patriotic influence, capable organizations could not begin their beneficent work. To prescribe a form of organization which could not draw its first breath because of the hostile atmosphere of existing commercial environment, is economic infanticide. To successfully float an organization resting upon community interest, pride and satisfaction and to see that organization grow in growers' support and in mastery of its world-job of fair trade is a constructive economic policy.

Fifth: The only fact there is bearing upon the fact of possible perversion of good will, trade brands, etc., to hostile corporate ownership, is that thus far growers have tightened their hold upon these valuable things and to anticipate other action on their part is to impute foolishness to them.

Thus we have admitted the five facts which our contemporary chooses as the basis for his contention. Thus we have presented five greater facts for his careful and conscientious consideration.

Transplanting Olives.

To the Editor: Is it best time to plant olives when rooted one year, or is it better to leave them in the nursery until they are two years old?—Reader, Valley Center.

Trees which have made a good free growth in the nursery at one year old are all right to plant out. Those which have done little may be allowed to stand another year where they are; or, if more convenient, be replanted in nursery row for another year or more. Olive trees transplant readily at greater age than common fruit trees, if the roots are not allowed to dry. The best time to

plant is after the cold weather and heavy rains are over and the ground is warm and moist. This occurs, in different parts of the State, from February to April according to situation and local rainfall.

Irrigating Figs.

To the Editor: Please advise me whether or not irrigating Calimyrna figs at this time, or later, would tend to sour or split the fruit or otherwise work any injury. The trees are from 12 to 14 years old, fairly thrifty and the land has a heavy tendency though a trifle sandy.—Grower, Tehama.

Irrigation must always depend upon the character of the soil and the condition of the trees when carrying fruit. If they show signs of needing water its application should be moderate so as not to cause a marked change in growing conditions which might produce bad effects when fruit is nearing maturity. Two light irrigations would therefore be safer than one heavy one, because likely to produce more gradual changes in sap-flow, especially on a heavy soil. But in Fresno on deep light soil they irrigate freely in July, flooding as copiously as they do in irrigating alfalfa, with good effects.

Deep or Shallow Plowing for Grain.

To the Editor: I have a piece of good fair land, almost no alkali and only small sage brush, twenty-five miles west of Bakersfield, which I want to put in grain. My belief is that fairly deep plowing—around 10 inches—would be of great service in conserving moisture, but I am told by the surface-farmers of that region that deep plowing there means no crop. My own observation is not very extended in that region, but so far as it goes it does not confirm this prejudice against deep plowing for grain. I have found the largest Kafir corn, etc., on deep plowed land; and moisture enough in the under-soil to finish up a good crop. What basis is there for the belief that the upper five inches of soil must not be disturbed by turning in and mingling with the 5-inch layer immediately below it?—J. E. C., Bakersfield.

If you intend to clear off this land and get in grain for next winter's growth we certainly advise you not to plow deeper than five inches. If you break it up this fall for a summer fallow during 1917 as a foundation for future cropping deep plowing would be rational, but whether it would pay you for the extra work and the delay we do not guarantee. Your land is new and has presumably been acted upon by natural mellowing influences for a long time. All you need to do is to provide surface cultivation. If you plow deep you must settle the land by deep harrowing or sub-surface packing or wait for the rainfall to melt it down, because both wheat and barley demand a reasonably firm soil to root into and are quickly ruined, in a region of light rainfall, if there is too much open soil under them. This is why your neighbors say you will get no crop at once on deep plowing, and they are probably right. Sorghum is less sensitive to a loose bottom, but whether it likes it better because it can more successfully root through it or whether it is so much more drouth resistant than wheat and barley that it can show success while they fail, is a question. It is not a matter of the first or second five inches of soil, it is a matter of plant-habit and moisture movement to the roots.

Sprinkler or Ditch for Fruit Trees.

To the Editor: What is the best way to water young trees, especially fig trees, on sloping land? At present I loosen the ground with a hoe and then apply the water to the tree for about half a day with a lawn sprinkler, the water coming through a half-inch pipe. The water spreads nicely and does not run off. I am told that I was doing more harm than good as this encourages the growth of surface roots which the plow will cut the next spring and cause suckers to grow. If I take off the sprinkler the water will run off unless I am there to watch it. Kindly give me your idea about the sprinkler. The ground is a medium light loam, no hardpan.—A. O., Wrights.

Probably the best way is to basin around the trees a little and connect the basins with a ditch or furrow running across the face of the slope, nearly level so the water will run very slowly, and then use a small stream from the pipe so the water will be soaking in a long time. If you prefer the

sprinkler method go ahead with that—following with a good cultivation, several inches deep, as soon as the surface dries enough to work well. This wastes some water by drying out, but if you do the cultivation well you need not fear much surface rooting. If you sprinkle, let the surface bake and then sprinkle again, it is not a good way.

It Needs Good Farming.

To the Editor: What would you suggest as a good soil builder on a hill ranch near Pleasanton, reddish sandy clay loam top soil, and sandy clay subsoil? The hardpan is apparently more than four feet below the surface; up to that depth I have not encountered it. Some of the land is quite steep, some of it is adobe, and all of it has suffered from erosion and neglect. Would a combination of soil blasting, liming and cover crops be the best method to adopt, and would the result warrant the expense? Oats, barley, nuts, some of the small fruits and vines do very well in this locality without irrigation; also potatoes and corn, dry farmed, do well in some places; but vegetables, alfalfa and root crops do not amount to much unless irrigated. Is there a way to sow my hills to natural pasture, that is to grasses which when sown will reproduce themselves from year to year?—L. A. B., Oakland.

The best soil-builder for you is good diversified farming: good tillage, plenty of manure, reasonable investment in commercial fertilizers, lime and cover crops. As you seem to have a free soil to a greater depth than four feet it would be a question for a practical test to see how blasting affected it. Shoot a little and watch. Most vegetables and root crops would do well if planted in the fall, as soon as the soil is well wet with rains. Alfalfa would also probably do much better than you think, if started in the fall, and would probably give you good pasturage after you have used up wild pasturage in the spring. Wild oats and bur clover will be good things to sow on steep parts and will keep coming if you give them a chance to seed in the spring. Get some stock on the place if you have land enough. They will help you do other things.

Suckering Thompsons.

To the Editor: Should Thompson Seedless vines be suckered? They have been suckered 18 to 24 inches above ground. Does it hurt them?—S. S., Kingsburg.

Viewing the whole vine as a vegetative concern, the removal of suckers may be regarded as reducing foliage which would contribute to the strength of the root and therefore a loss to the vigor of the vine. But viewing the vine as a concern for producing fruit which must have its fruiting wood properly placed and properly nourished by the root, suckering must be done or the vine cannot do what you expect it to do. You have apparently prepared for this by suckering already to the height you mention. You must continue to protect the effective form of the vine by suckering away shoots which appear later where no canes are desired. Removing suckers which may break out in the head or arms of the vine and which are usually called "water-sprouts" or "adventitious shoots," usually indicate that the vine has more vigor than the bearing wood you have left is able to employ and suggest that on such vines you should give more length of cane at the winter pruning, or arrange for more spurs on the arm. As a rule it is probably better for the vine not to remove these top-suckers. They can often be cut back for additional spurs.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., July 4, 1916.

STATIONS	Past Week	Rainfall Data		*Temperature Data	
		Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka .....	.79	.13	.03	70	44
Red Bluff	1.76	1.00	0	88	48
Sacramento .....	.07	.06	0	86	48
San Francisco .....	.03	.03	0	70	54
San Jose	0	0	0	82	48
Fresno	0	0	0	88	52
Independence	0	0	0	88	—
San Luis Obispo ..	0	0	.01	76	48
Los Angeles	0	0	0	80	56
San Diego	0	0	0	74	58

*Temperature data include 3rd only; i. e., for 6 days.

Statewide Uniform Fruit Inspection.

Lack of uniformity in inspection of fresh fruits for interstate shipment, and no inspection at all in some districts, is one of the few weaknesses of the present law.

[Written for Pacific Rural Press.]

The fresh fruit standardization law in action has shown up some few defects.

Lack of uniformity in inspection and enforcement of the law is chief of its weaknesses. A fertile source of irritation is the fact that counties having no horticultural commissioner may ship any old kind of fruit unless 25 resident fruit growers petition the county supervisors for inspection and enforcement of the law.

One of the principal early fruit shipping counties in the State has had no inspection this year, and any sort of fruit has been shipped, that the growers or shippers there cared to get rid of. This has worked a special hardship on the fruit districts in the adjoining county. So-lano people have shipped immature fruit which has been gobbled up at high prices as usual for the first shipments of each kind of fruit; and they have had a highly prosperous season.

Meanwhile, Yolo fruit growers must keep hands off the highest prices and see their neighbors injure their markets.

Consolidation Carloads.—Much of the Solano early fruit is shipped in small lots at through carload rates to Sacramento or Newcastle, where it is consolidated with other fruit into carloads for the East.

In inspecting this at Newcastle, the inspectors have avoided as much as possible having local growers around when the fruit was exposed. Those who did see it, made such a righteous fuss, that finally all three Newcastle companies handling such consolidation fruit, co-operated with the inspectors in ultimatums, the last of which was delivered June 17, stating that such fruit would thereafter be summarily condemned. To condemn such fruit would cause loss of the local freight rate which might have to be paid not only on the condemned fruit, but also on whatever good fruit was included in that shipment. Condemnation would throw the immature or poor fruit onto the California markets to bring whatever price it could.

Other counties also have shipped immature fruit to Newcastle for consolidation. This was sometimes to avoid being unduly hard on folks to whom the law was new, but who seemed willing to improve when shown.

It also occurred partly from lack of adequate inspection due to the cost of enough inspectors, whose salaries are supposed to be paid by the counties.

Part of the lack of uniformity of fruit shipped this season under the law is due to the various judgments of the various inspectors all over the State.

Part of the trouble lay in ranch packing houses so widely spread that no reasonable number of inspectors could do them justice.

Instances of Difficulty.—F. B. McKevitt says of the grape packing last fall: "In the Tokay section, I am unable to report as good results as in Fresno. This was largely due to

more of the Tokays being packed by farmers. Where they are packed in commercial shipping houses, it is easy to watch and get results. I believe that the results in Fresno are such that there will hereafter be no difficulty in getting enough inspectors, especially in the Lodi district, to get as good results as in Fresno."

Imperial county this season felt unable to pay enough cantaloupe inspectors, so the shippers' inspectors were appointed by the county and they served well.

Each of the three fruit shipping houses in Placerville has an inspector who was under direct supervision of the Standardized Fruit Alliance, but is now in charge of county horticultural commissioner J. E. Hassler.

Placer county shippers' inspectors are helping the county inspectors.

Fresno employed her own, and also a chief inspector to standardize the work of the others. Inspection was further made uniform by weekly meetings of the inspectors early in the season. "As the season advanced, the work of inspectors and packing houses became more uniform," writes horticultural commissioner F. P. Roullard. "There were fewer trouble calls, and the chief inspector was enabled to cover the Fresno houses."

Last year there was much grape mildew; and stem-mildew was allowed to pass. This year there is little; and none will probably be allowed to go East.

It is difficult to get suitable results on some ranch packing houses due to lack of vigilant supervision of packers, also to poor light in packing sheds, etc.

Difficult to Prosecute.—Enforcement of the law now being in the hands of the local commissioner, puts him in a bad fix. D. F. Norton, horticultural commissioner of Nevada county, says, "This is one of the weak and objectionable points of the law, as it would be next to impossible to get a jury to convict; and very few horticultural commissioners would relish the job of swearing out a complaint against a fruit grower."

"It should be made a misdemeanor for any common carrier to accept for interstate or foreign shipment any fruit not passed by an inspector and stamped 'Standard Fruit.'"

It would probably be easier to convict a railroad of a misdemeanor! Mr. Roullard had a grower convicted, but the case was appealed.

Remedy Suggested.—A plan suggested by the State and county horticultural commissioners, the State Market Director, and certain shippers and growers, to overcome all the above objections to the greatest degree possible, is to make the law apply to the entire State, place its enforcement in the hands of the State Market Director, let him hire and pay all inspectors and fire them on petition by local growers or shippers if reasonable objections are shown. Let the State Market Direc-

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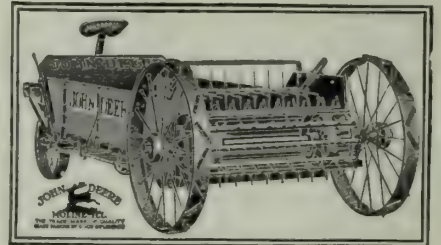
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tor issue uniform rules for enforcement of the law, employ enough traveling supervisors to insure uniform inspection, and have frequent conferences of these supervisors with himself. Let him promulgate, after suitable hearings, rules for the building and management of packing houses.

Stamp for Standard Fruit.—Have a stamp for each package of inspected fruit, as the State has for apples. A stamp costing ½ cent goes on every State inspected standard box of apples. It is made attractively and is a good advertisement as well as paying all expenses of inspection. For fresh fruits under the law, it

would preferably read something like, "This package is one out of a lot — per cent of which have been inspected by the State." It is impossible and undesirable to inspect every package. If any poor fruit slips through, it would thus not completely damn the State label. The apple stamp has increased the value of such apples 10 to 20 cents per box, according to F. S. Jerome.

Let the Market Director either enforce the law by fining or imprisoning the guilty grower, or do it by the easier method suggested by Mr. Norton.

A maturity standard will be discussed later.

Candied and Glace Fruits.

[Written for Pacific Rural Press by W. V. Cruess, University of California.]

Most manufacturers regard their processes as more or less secret. The methods given in this article have been used at the University successfully for citrus fruits, but have not been tried with other fruits. The same principle should apply in both cases, however. It can probably be safely assumed that the method given will give good results with deciduous fruits because it is simply a modification of a method given in the U. S. Consular Report 343 for 1909 by the Consul at Marseilles, for all kinds of glace fruits and nuts.

Candied Fruit is preserved by the large amount of sugar that it contains. The sugar must permeate the entire fruit or the untreated portion will spoil. The juice in the fruit must be made to contain finally 65 per cent sugar to prevent spoilage; that is to say, if a piece of candied fruit be pressed and the syrup from it analyzed, it will be found to carry at least 65 per cent sugar.

In order that the sugar or syrup can penetrate, the fruit must be softened by heating to break the tissues, and make channels for penetration of the syrup. Ordinarily, boiling the fruit slowly in water or dilute syrup until a darning needle will penetrate easily to the core or pit will be sufficient. The skin should not be badly broken and the fruit must not be boiled too soft.

If fresh fruit is boiled at once in a rich syrup, it will shrivel and become very tough. The most important point in the whole process is impregnation of the fruit by gradually increasing the amount of sugar in the syrup used on the fruit from day to day. The process can not be rushed without disastrous results.

The process consists in softening the fruit in boiling water, transferring to a weak syrup of 20 to 25 per cent sugar, drawing off the syrup at intervals of twenty-four to forty-eight hours thereafter, boiling it down until it is about 5 per cent stronger in sugar each time, returning fruit to the hot syrup till next day, etc., for succeeding periods of twenty-four to forty-eight hours until a syrup of 65-75 per cent is reached. This will take ten to fourteen days. It gives the syrup time to penetrate, and gives a product of uniform texture. Too rapid increase in the sugar of the syrup results in shriveling. The fruit must not be boiled in the syrup but simply covered with the boiling syrup in a jar or crock and allowed to cool by standing 24 to 48 hours.

Where large amounts of the candied fruit are to be made, a series of jars or crocks, each one containing a syrup about 5 per cent stronger than the preceding one can be used. Then the syrup need not be boiled down to increase the syrup 5 per cent each time, but need only be heated to boiling and poured on the fruit. The fruit can be transferred from one container to the next on each day until the end of the series is reached at 70 per cent sugar.

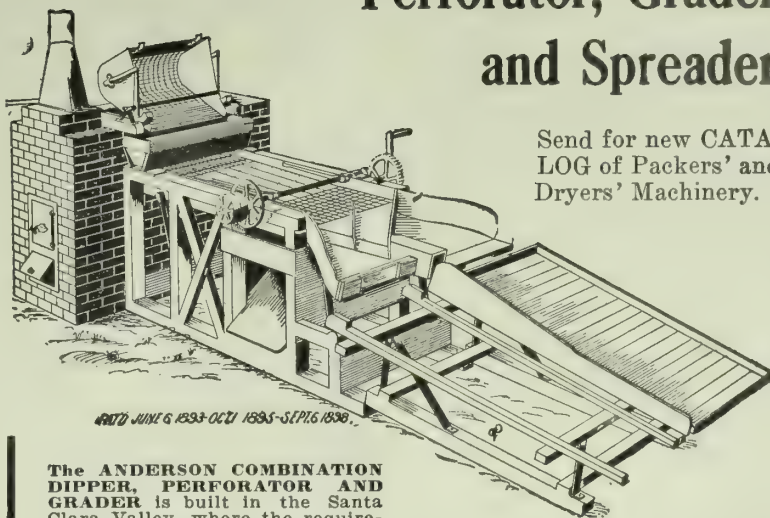
Fruit Sugar Needed.—Pure cane sugar as the fruit dries out would crystallize and set the fruit into the form of rock candy, whereas a well-made candied fruit should resemble in texture the original fruit and should not contain crystals of sugar in the flesh. When the syrups are made by boiling down, the boiling will change enough of the cane sugar into "invert sugar" to prevent formation of crystals in the fruit. If the series of crocks or jars is used and the syrups are not boiled to any great extent, about 25 per cent of the sugar used in making the syrup should be glucose, which does not crystallize so readily as cane sugar.

When the last syrup, 70 per cent, has been used, the fruit is placed on suitable coarse wire screens and the excess syrup drained off. The fruit should be allowed to dry a short time before coating with sugar. One of the following ways may be used:

Crystallized Fruit is made by placing the drained fruit prepared as above in a very concentrated hot cane sugar syrup which is almost at the crystallizing point. This syrup should be made by adding a very small amount of water to a large amount of sugar and heating to boiling. It should not be boiled very long or "invert sugar" may be formed which will not crystallize. The fruit is left in this syrup until well coated with crystals. It is then removed, drained, and dried.

Glace Fruit is made by taking the drained fruit from the 70 per cent syrup and dipping it quickly in a very rich hot cane sugar syrup—this syrup should contain so much sugar that it will set solid when it cools. The fruit must be dipped and removed instantaneously so that it does not heat appreciably. The cold fruit chills the thin coating of syrup so that it forms a thin transparent glaze—in this case it must not be allowed to form crystals on the surface of the fruit.

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Dipper-Graders, Spreaders, Field and Transfer Cars, Etc.

Perfect in Efficiency.

Lasting in Durability and Fully Guaranteed.

Write for Catalog and Prices.

SMITH MANUFACTURING CO.

Stockton Ave., near The Alameda.

SAN JOSE, CAL.

Compare the Cost

TWENTY years ago a farmer borrowed \$1,000.00 at 6 per cent straight on the old fashioned loan plan. He has renewed the loan at intervals with constant expense of renewal commissions, abstract charges and recorder's fees, and he still owes the principal sum of \$1,000.00

He has paid \$60.00 interest every year for 20 years, a total of 1,200.00

Total cost to farmer, including \$1,000 still unpaid.....\$2,200.00

Under the amortized rural credit plan, his total interest and principal payment would be \$90.76 a year for 20 years, or..... 1,815.20

A saving on a loan of \$1,000 of.....\$ 384.80

The following table shows the amount of INTEREST SAVED by borrowing on the amortized or rural credit plan:

Amount Borrowed.	Annual Payment Amortized Loan.	Total Payments. 20 Years.	Straight 6 per cent for 20 years and Principal Repaid.	Interest Saving Amort. Loan.
\$ 1,000	\$ 90.76	\$ 1,815.20	\$ 2,200.00	\$ 384.80
2,000	181.51	3,630.20	4,400.00	769.80
4,000	363.02	7,260.40	8,800.00	1,539.60
8,000	726.05	14,521.00	17,600.00	3,079.00
10,000	907.56	18,151.20	22,000.00	3,848.80

We think this amortized loan which can be paid off any time is the best loan, for the farmer, being offered in California, but if preferred, will make 10 year loans, annual interest and favorable prepayment options. Both types, each being for a long term, offer a big advantage in selling a farm, for each gives buyer longer time to pay out than sellers or other loan companies generally grant.

Full information given on request without obligation to borrow.

LOMBARD & SON, Inc.

519 Underwood Bldg.

San Francisco

Fruit and Nut Prospects, July 1; and Per Cent of Each Grown in Each County.

COUNTY	ALMONDS	APPLES	APRICOTS	CHERRIES	FIGS	LEMONS	OLIVES	ORANGES	PEACHES	PEARS	PLUMS	PRUNES	WALNUTS	Berried, % of Normal	Grapefruit, % of Normal
	% of State crop	% of Normal	% of State crop	% of Normal	% of State crop	% of Normal	% of State crop	% of Normal	% of State crop	% of Normal	% of State crop	% of Normal	% of State crop	% of Normal	% of Normal
Alameda	65	14	h	9	h	100	14	25	100	2	80	35	30	100	100
Butte	12	15	h	h	h	100	100	100	100	2	35	35	70	75	100
Colusa	4	75	h	h	h	100	100	100	100	75	75	75	55	100	100
Contra Costa	11	70	h	h	h	100	100	70	100	85	65	70	30	100	100
El Dorado	h	h	h	h	h	100	100	100	100	70	40	40	30	100	100
Fresno	100	5	h	h	53	100	100	80	29	60	100	100	100	100	100
Glenn	75	50	h	h	50	100	100	100	90	100	100	100	85	100	100
Humboldt	h	2	h	h	h	100	100	100	100	100	100	100	80	100	100
Imperial	h	h	h	h	70	100	100	100	100	100	100	100	100	100	100
Inyo	h	85	h	h	h	100	100	100	100	60	90	100	100	100	100
Kern	h	60	h	h	100	100	100	100	85	60	90	100	100	100	100
Kings	h	5	h	h	100	100	100	100	90	100	100	100	100	100	100
Lake	50	50	h	h	50	100	100	100	50	8	33	25	50	50	100
Los Angeles	2	80	2	h	60	31	90	14	80	26	90	4	85	70	100
Madera	h	35	h	h	3	65	100	100	100	85	100	100	85	100	100
Mendocino	60	100	h	h	h	100	100	100	75	30	100	100	75	85	50
Merced	90	h	h	h	9	100	100	100	70	100	100	100	70	100	100
Monterey	75	12	65	2	h	h	100	100	75	50	25	25	40	100	100
Napa	h	80	h	h	h	100	100	100	60	4	50	80	40	90	100
Nevada	60	3	100	h	h	50	100	100	90	60	40	40	20	50	100
Orange	h	100	4	h	h	7	90	75	10	75	100	100	38	100	100
Placer	25	100	h	3	h	90	100	100	90	6	75	7	75	39	99
Riverside	3	90	80	7	h	16	90	11	80	14	75	6	75	60	100
Sacramento	65	90	h	5	h	100	100	5	80	95	70	18	68	8	100
San Benito	100	100	6	h	h	100	100	100	80	100	100	100	3	75	100
San Bernardino	h	4	50	4	h	13	90	7	70	31	95	5	50	100	100
San Diego	70	25	h	h	h	10	75	5	100	100	80	20	25	100	100
San Joaquin	12	40	80	3	h	25	h	4	75	h	8	75	4	50	100
Santa Barbara	h	90	h	h	h	100	100	100	100	100	100	100	100	100	100
San Luis Obispo	100	100	h	2	h	100	100	100	100	100	100	100	100	100	100
Santa Clara	h	60	21	h	26	h	100	100	100	5	75	9	50	18	100
Santa Cruz	h	51	80	3	h	2	h	100	100	100	100	100	100	100	100
Shasta	20	75	h	h	h	75	100	100	100	100	100	100	100	100	100
Siskiyou	h	10	h	h	h	100	100	100	100	100	100	100	100	100	100
Solano	6	3	10	h	h	100	100	100	100	100	100	100	100	100	100
Sonoma	25	16	100	h	9	h	100	100	100	100	100	100	100	100	100
Stanislaus	6	80	75	h	h	5	100	100	100	100	100	100	100	100	100
Sutter	h	75	100	h	h	3	100	100	100	100	100	100	100	100	100
Tehama	100	25	h	h	h	100	100	100	100	100	100	100	100	100	100
Tulare	h	100	h	h	6	95	5	90	6	13	85	9	88	100	100
Ventura	h	h	6	h	h	15	100	100	100	100	100	100	100	100	100
Yolo	11	65	h	h	h	5	100	100	100	100	100	100	100	100	100
Yuba	h	70	100	h	h	2	90	100	100	100	100	100	100	100	100

† Horticultural commissioner has insufficient information for a report.
 ‡ Not grown commercially. h Harvested.

* Less than 2 per cent of State's normal crop grown in county.

Figures for this table are furnished to Geo. P. Weldon, chief deputy State Commissioner of Horticulture, by the various county horticultural commissioners, who seem in better position to give accurate unbiased estimates than anyone else. They base their estimates on observation, reports of their local inspectors, growers, etc., by mail, conversation, and telephone.

Under each fruit are two columns: the first represents the percentage, grown in that county, of the total State output of each fruit (not the per cent of bearing acreage). These estimates are based on the normal crops of previous years, as indicated by the best and most widely corroborated statistics which Mr. Weldon could find. That they are very nearly accurate is indicated by the fact that in the case of oranges last season, the county horticultural commissioners reported to Mr. Weldon the production of each county, which was unknown to the Cal. Fruit Growers' Exchange by counties. The total, however, was almost exactly the same as the Exchange's State total.

The second column under each fruit shows the estimated condition of the crop on the basis of 100 as normal. Comments below apply only to the principal producing counties.

Almonds lower than last month in Butte and higher in Contra Costa, same as last month elsewhere.

Apple estimate increased to 100 per cent in Sonoma, no change elsewhere.

Berries better in Sonoma, no change elsewhere.

Figs no change in estimates.

Olives light in Butte account drouth and wind.

Peaches look 10 per cent better Fresno, no change elsewhere.

Pears, 8 per cent better Lake, no change elsewhere.

Plums late varieties 5 per cent lower Placer, same elsewhere.

Prunes 5 per cent improvement Santa Clara and Sonoma.

Walnuts 30 per cent better Santa Barbara, no change elsewhere.

OLIVE PICKLING POINTERS.

To the Editor: How can I remove bitterness from olives before preserving?—M. T., Moraga.

[Four hundred olive pickling tests were made last season by Prof W. F. Oglesby of the University of Cal. It was found that only potash and soda lyes could be used to destroy the bitterness. Lyes of two to four per cent strength gave best results. Weaker lyes acted so slowly that bacteria injured the fruit. Stronger lyes softened it.

To darken and equalize the color two lye treatments are necessary, the first penetrating one-fourth, and the second three-fourths of the way to the pit; each followed by twenty-four hours exposure to the air.

Economy of material and improvement of quality was found to follow the continued use of the same lye, a little potash or soda being added each time to replenish that neutralized by the olives.

Frequent stirring during the lye treatment was found necessary for evenness of color. Rinsing for five minutes after the lye treatment and before aeration, gave a blue-black color with ripe fruit.]

DRYING FIGS.

To the Editor: Please give a process of drying dark blue figs.—Mrs. J. M. H., Oakdale.

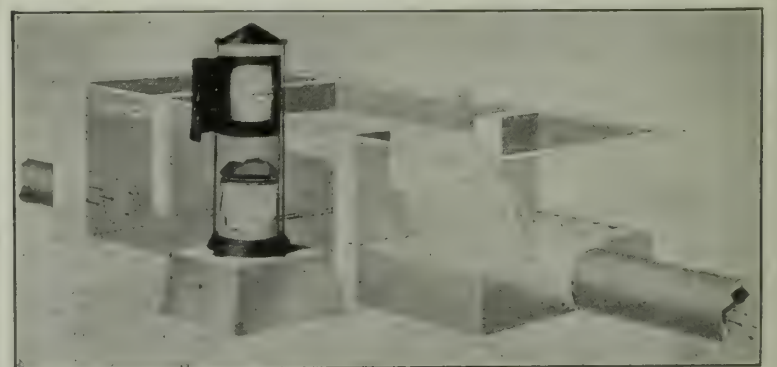
[As you probably do not have

many, sweep the ground clean under trees, let the fruit fall, lay it on fruit trays in partial shade if convenient, until they are well dried but not hard. This will take a week or 10 days. One big Fresno fig grower dips them in salt water 10 to 30 minutes and dries them in the stack; but his country is hotter than yours. Prepare to keep birds off. If you sell the figs in bulk, do not dip them in anything after drying. If you wish to pack them yourself, dip in boiling 5 per cent salt water or very thin boiling syrup for half a minute or so to sterilize and give them a bright color, then grade, cull, and pack.]

EVERY WEIR NEEDS ONE

The Sentinel Recording Weir-Gauge

Automatically Checks and Records Every Variation of the Flow Over Your Weir, and the Time it Occurred.



Easy to install, Simple in Operation, Durable in its Construction, Positive in Results.

Write for information, and ask for Catalog "R."

R. W. SPARLING

Power and Pumping Machinery and Supplies.
 945 North Main Street, Los Angeles, Cal.

END the Morning Glory PEST with Nonpareil

"We have given Nonpareil a very good trial and find that it destroys not only morning glory but also horse radish. We consider it a thoroughly satisfactory weed exterminator."

—Luther Burbank.

If you want full profits from your crops you should use Nonpareil. It is easy to apply and economical to use—one gallon is sufficient to kill 250 plants. It does not injure the ground but acts as a tonic. It is the most successful weed killer known. Write today for interesting folder.

WHEELER REYNOLDS & STAUFFER

26 California Street

San Francisco, Cal.

Improving Rural School Conditions.

(Continued from page 25.)

Of the 51 schools in the county there is at present just one "All Star" school. This is in the Soda Canyon district and was constructed

the competitive spirit has led to three additional features: a flag pole, septic tank, and running water, all of which had been omitted in the

A STANDARD SCHOOL

NAPA COUNTY, CALIFORNIA.

FLAG—Must be flying, weather permitting, also one must be displayed in each school room at all times during the school sessions.

SCHOOLHOUSE—Property lighted with light from left side of room (or from left and rear) through window space at least one-fifth of floor space in area.

EQUIPMENT—Teacher's desk and 2 or more visitors' chairs; desks should be individual, separate, adjustable, clean; suitable blackboard; window shades in good condition; recitation bench (the latter not essential, but nice); library table; a modern fire extinguisher of some sort to be provided each school; flies and mosquitoes excluded absolutely by thorough screening of schoolhouse.

HEATING AND VENTILATING—Jacketed stove properly situated, minimum requirement; window boards or some other approved method of ventilating.

ROOMS—Attractive at all times.

STANDARD PICTURE—One new one, unless three are already in the room, framed.

GROUND—To be clean, free from paper, etc. At least three features

of play apparatus. Walks if necessary.

SANITATION—Pure drinking water; either drinking fountain or covered tank and individual drinking cups; individual family or paper towels.

OUTBUILDINGS—At least two good ones, to be sanitary at all times and free from marks. They should be thoroughly and effectively screened.

TEACHER—Must maintain good order at all times, supervise the playground; have her work well prepared; follow course of study; take at least one educational journal; have programme posted in room; keep register in good condition; be neat in attire.

LIBRARY—Good selection of books from county list. Case for the books. Books kept upright in good condition and recorded according to rules specified by California School Law.

ATTENDANCE—Average 95 per cent for year and not to exceed two per cent in tardiness for year.

LENGTH OF TERM—Not less than nine months of school each year.

TRUSTEES—School visited once each term by Trustees.

THIS CARD IS HUNG IN EVERY SCHOOLROOM

Each requirement earned is marked with a star. When all requirements are fulfilled a suitable pennant or certificate is awarded by County Superintendent. Standard raised yearly.

Adopted by the Napa County Farm Bureau, Committee of School Trustees and Napa County Board of Education, July 2, 1915.

before the present movement began, along modern lines, as shown in the accompanying illustration.

But even this school has been benefited by the new movement; for

original plans. Needless to say, it is the envy of every other Napa county school district, and the kind that all will have before the farmer-parents will be satisfied.

POISONING FIELD MICE.

To the Editor: How can we eradicate field mice?—J. C., San Francisco.

[Answered by Prof. H. C. Bryant, University of California.]

[Meadow mice or field mice are most easily destroyed by poison. The U. S. Dept. Agr. advises the following formula:

"Dissolve an ounce of strychnia sulphate in a pint of boiling water; add a pint of thick sugar sirup and stir thoroughly. The prepared sirup may be scented by a few drops of oil of anise or rhodium, but this is not essential. A half ounce of borax is said to keep the mixture from molding.

"The above quantity (a quart) of sirup is enough to poison a half bushel of wheat or corn. If after thorough mixing the solution is not sufficient to wet all the grain, add a little water. After standing over night, if the grain is too wet, a little dry corn meal will take up the excess moisture. If oatmeal is used as a bait, when the mass is wet throughout with the sirup, it may be used immediately."

When meadow mice became exceedingly abundant in Nevada in 1907-8, chopped alfalfa soaked in a

strychnine solution proved the most effective poison.]

EGYPTIAN CORN PRICE.

To the Editor: Why is Egyptian corn lower than the average at this time of year (June 8)? Is the price likely to rise soon?—Sub.

[Answered by John Cook, Moore-Ferguson Co., San Francisco.]

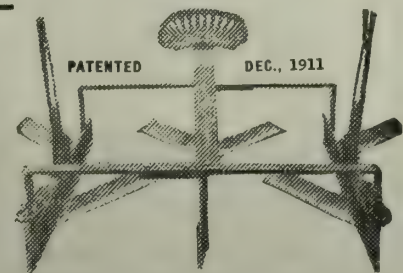
[The value of Egyptian corn is governed to a great extent by the cost of wheat, which is quite low at present. In previous seasons at this time of the year stocks of Egyptian corn were small; while now a large quantity is in growers' hands, which adds to the depression. Unless wheat should advance I do not anticipate much improvement in the value of Egyptian corn.]

Fifty thousand ladybugs to eat prune aphids in Kings county orchards were recently sent from the State Insectary.

CUT FLOWERS

Cut out the Middleman. Buy direct from the Grower. All varieties of cut flowers in season direct from the plants, sent by parcel post or express. Also floral work of all kinds. Try a sample order. 40 varieties of ferns in 4-inch pots now ready, 25c each.

GEO. N. TYLER,
Brookdale Nursery, Los Gatos, Cal.



Ames-Irvin

IRRIGATION PIPE

SIMPLE

SOLID

STRONG

IRRIGATE WITH

LESS WORK

LESS WATER

LESS EXPENSE



SEND FOR BOOKLET P.

It gives full information.

WRITE TODAY

Ames-Irvin Co.

8th & Irwin Sts., San Francisco

Water Pipe

-- 100,000 FEET --

New and slightly used. All pipe has new threads and coupling.

NEW STANDARD BLACK PIPE.

Prices quoted per foot:	Cts.
30,000 feet 2 inch	.13 1/2
10,000 feet 1 1/2 inch	.11 1/2
10,000 feet 1 inch	.07 1/2
10,000 feet 3/4 inch	.05 1/2
10,000 feet 1/2 inch	.04 1/2

NEW GALVANIZED PIPE.

2,000 feet 1 1/2 inch	.14
10,000 feet 3/4 inch	.07 1/2
10,000 feet 1/2 inch	.06

RIVETED DIPPED PIPE.

1,000 feet new 20 inch	.75
1,000 feet slightly used 10-inch	.35

Prices quoted on new pipe subject to change with notice.

SLIGHTLY USED PIPE AND CASING.

10,000 feet 2 inch	.10
20,000 feet 1 1/2 inch	.06 1/2
5,000 feet 2 1/2 inch	.15
5,000 feet 3 inch O. D. casing	.14
3,000 feet 3 1/2 inch O. D. casing	.15

Many other sizes to select from. We also rent pipe. Immediate shipments.

Write, wire or phone your order. Full line Wrought Iron Fence Posts. Guaranteed rot proof.

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If you use "CORONA DRY"



One of the many styles and sizes of Fruit Trucks I manufacture. Sixteen years of experience has taught me how to make trucks that will stand the hard knocks and that will last. For prices and particulars, address

BROEDEL ORCHARD TRUCK CO., 552-556 South First St., San Jose, Cal.

GOLDEN GATE WEED CUTTER AND MULCHER

Farmers, order early if you want the Golden Gate Weed Cutter and Mulcher, as the demand this year will be great, as it not only cuts weeds, but kills them, and leaves finely pulverized top soil. Cuts any depth. Prevents evaporation by working under the soil without disturbing soil on top. Write for circular.

C. G. SIGURD,
Capitol Avenue and McKee Road,
San Jose, Cal.

Mechanical Power on the Farm.

BERMUDA AND SALT GRASS. LEVELING EXPOSES DEAD SPOTS.

To the Editor: We have a 60 h. p. wheel tractor and disk plows. Is it a good plan to disk salt grass and Bermuda sod several times in July and plow it about the last of August, or to plow and randall it lightly at first and plow it deeper afterward. Does land leveled with an engine scraper need a rest before planting alfalfa or vines?—G. R. Mc., Selma.



This does not show tractor implements; but it shows cultivators such as have been used successfully in killing Bermuda and Johnson grasses.

[Plow deep at first and as soon as you can get to it, then stir the roots deeply every four days until everyone you can find has turned brown clear through. David Porter of Hanford did this with a Planet Junior cultivator, like those in the picture

but with seven sweeps overlapping each other.

It took three months to kill his Bermuda and Johnson grass but it took only half a day each time to cultivate five acres with a team. With your tractor and a tractor implement you could handle larger acreage. You might as well do it deeply and all at once.

Land leveling where two or three feet of top soil are taken off, leaves exposed, spots that are likely to be

"dead" except in very light soil. Bacteria which are essential in making plant food available and which must have air, must be given time to become established in the exposed subsoil before it can become reasonably productive.]

ALFALFA MEAL GRINDING.

To the Editor: What is the right time to grind alfalfa hay into alfalfa meal? Can this be done at any time and is baled hay all right for the purpose or is it better done immediately after harvesting, as then the hay is in its most brittle state? Will alfalfa meal deteriorate materially with age? Can it be kept in bulk in large bins or must it be kept in sacks?—E. L., Chico.

[Grind your hay whenever you can get to it, provided it is dry—the drier the better, if you can grind at the stack, without losing leaves by hauling.

Alfalfa meal is always stored in sacks as far as we know, but for home use, we see no reason for not using small bins if it is and can be kept dry. Chopped alfalfa is often stored in hay mows, but exerts such pressure that special bracing is necessary, or else stacking with space next to walls.

Age has no practical effect if kept dry. A big commercial alfalfa meal grinding company in the San Joaquin Valley is not expecting to run much this year, because its raw product costs so much that with profit, expense of grinding, sacks, and freight added, the meal would have to sell at a price that would enable mill feeds to compete.

On the other hand, as a rule, we would say that whenever it pays to feed alfalfa hay, it pays better to feed meal, for most of the alfalfa that he feeds to cows; and all of what he feeds to hogs and chickens except as pasture.

The meal is always more valuable for feeding these animals than the hay, because it is practically all saved and eaten. This makes the biggest

difference with the first and last crops which often are foul with weeds.

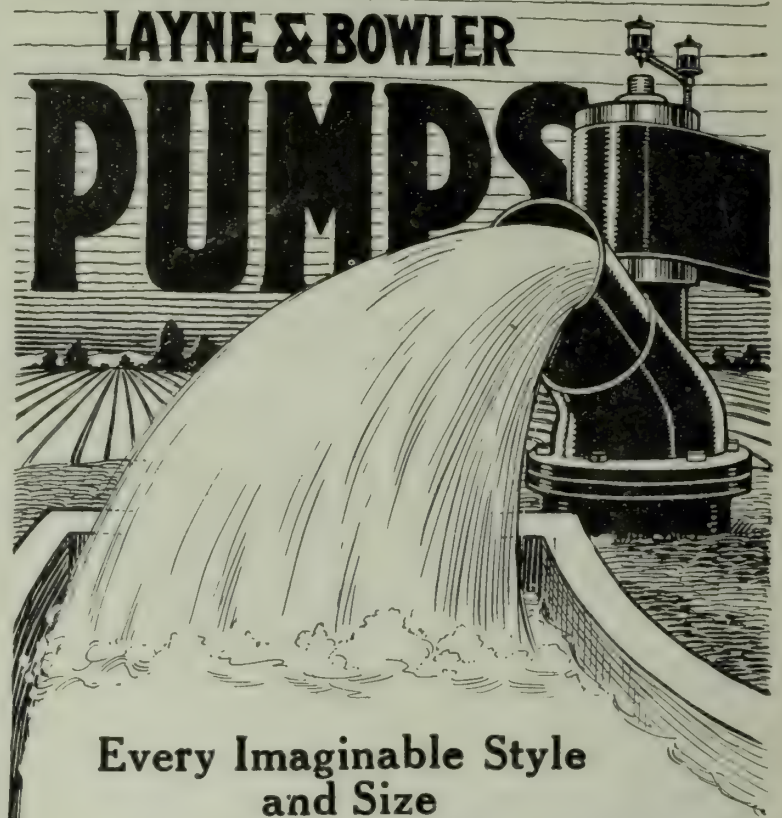
Coarser Meal Desirable.—We have a report from Washington State that on several cows that died, autopsies showed hard balls of powdered alfalfa meal. Several mills there have quit running for this or other reasons; and it is said that they simply ground the meal too fine.

Where it is really ground, there is an objection that it is injured by sort of cooking. There are various means of chopping or cutting alfalfa hay on the lawn mower style. Two companies have attachments which they put onto their silage cutters for finely chopped alfalfa.

On the Acme, a screen with holes of the size desired, encloses the cutter on all sides except the entrance. Thus the revolving knives carry it over the cutter bar repeatedly until it is fine enough to go through the screen.

This machine is built in six sizes. The smallest is figured to cut 1000 pounds of meal per hour with a 5 to 8 h. p. engine. The largest size is built for 3500 pounds per hour being run with 15 to 20 h. p. The same machines without the attachment will cut 4 to 6 and 16 to 30 tons respectively, of green corn silage per hour.

Two points are noted in connection with this cutter: (1) the small diameter of the revolving knives, requiring less power to do the cutting which of course comes at their circumference with less leverage; (2) the bevel edge of the cutting knives is on the side of the blade opposite the cutting bar. Whenever they get nicked or dull, they can be sharpened



Every Imaginable Style and Size

Layne & Bowler Pumps are not limited to any particular style. We manufacture pumps of practically every approved style and size, and each embodies our high standard of quality. We manufacture over twenty different kinds of pumps, including Low Lift, Medium Lift, and High Duty Turbine Centrifugal, Horizontal Centrifugal Pumps, Plunger Pump Heads and Deep Well Cylinders. We also build to order special pumps to meet any condition. Therefore, no matter what your pumping conditions may be, there is a Layne and Bowler pump to do the work, and do it at the very least cost.

Write at once for our new Catalog No. 25. It describes different pumps and gives information invaluable to prospective water users. Contains 125 new illustrations. Write today.

Layne & Bowler Corporation

900 Santa Fe Ave.,

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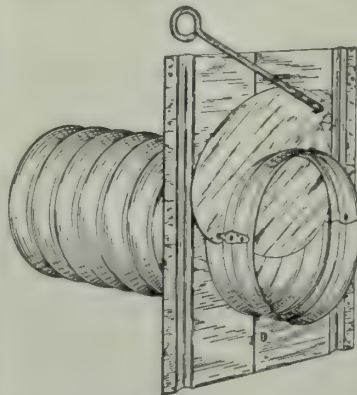
Cheap, Temporary Irrigation Gates are the DEAREST Kind You Can Install

The irrigation season is about to commence.

So are the troubles of the irrigationists who install temporary, inefficient gates in their work.

DO YOU KNOW that for a comparatively small outlay you can eliminate all annoyance and expense formerly caused by leaky, clumsy gates?

In the "ARMCO" (American Ingot) IRON



4-C Irrigation Gate

you are offered an **ECONOMICAL** and **PERMANENT** solution.

A gate which

IS FOR ALL PRACTICAL PURPOSES WATER-TIGHT. CAN BE USED SEASON AFTER SEASON WITHOUT REPAIRS OR REPLACEMENTS.

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WILL GREATLY DECREASE THE LABOR OF IRRIGATING. Write us for further particulars.

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Fill out the coupon and mail it to us and we will recommend a belt that we will unqualifiedly guarantee to do your work satisfactorily. We have had seventy years' manufacturing and selling experience.

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Send me samples of Belting that you will guarantee to give satisfactory service on my work and quote prices delivered at _____ Cal.

M.P. { Gasoline Engine _____
Steam Engine _____
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Diameter { Driving Pulley _____
in inches { Driven Pulley _____

Kind of { Cross _____
Drive { Straight _____
Perpendicular _____

Width of Belt _____ Ply _____

Distance Between { _____
Centers of Pulleys { _____

Revolutions per Min. { _____
of Driving Pulley { _____

Kind of Mach- { _____
inery Driven { _____

My Dealer's Name _____

My Name _____

Address _____

A pocket memo booklet giving speed and power tables will be sent FREE to all who mail this coupon.

REDWOOD TANKS—SILAH.

Thirty-five years in this Business in Stockton.—A 500-gallon tank, \$8.00. A tank 6 ft.x2½ ft., \$7.50. Other tanks equally cheap. I deal direct with the consumer. You will save 10% to 25% by dealing with me. All sizes in stock. Clear dry redwood. Direct from the mill by vessel. Write latest improved machinery. Doors, Windows Frames, Mouldings. Phone 2957. **F. F. WILSON, STOCKTON, CAL.**

by anyone by grinding on the beveled side. If this leaves the edge irregularly curved, it still fits close to the cutting bar and cuts the feed rather than shredding it.

There are special points of excellence on all machines, which should be investigated soon now.]

HOW MUCH HORSEPOWER?

To the Editor: My well is 25 feet deep, the tank 50 feet from the well and 16 feet off the ground. I want to put a gas engine and 1½ inch centrifugal pump at the bottom of the tank. How much horsepower will be required?—Sub., Guinda.

[Answered by Prof. J. B. Davidson, University Farm, Davis.]

[To determine the friction head against which you must pump, it is not only necessary to know the length of pipe but also the size and number of elbows and valves. This, however, is not important, so long as the pipe is large enough. If we should estimate a friction head of 9 feet, then the total head made up of this and a suction lift of 25 feet and a forced lift of 16 feet will be 50 feet.

Referring to a manufacturers' list, I find that a 1½ Gould single stage centrifugal pump, operating at 1800 r. p. m. will discharge 70 gallons per minute and require 2.6 H. P. This provides for the loss of power in the pump. This size of pump is not efficient in your case.]

BLASTING STRAIGHT DITCHES.

The force of an explosive always goes in the line of least resistance, regardless of direction up, down, or sideways.

In blasting out a ditch the idea, of course, is to excavate the earth in a straight line. To insure this, experience has shown that it is well to make the line of the ditch the line of least resistance by plowing a furrow, or two furrows, where the ditch is to go. This is particularly desirable where there is heavy sod. When the explosions occur, the gases force the lower earth out right on the line of this furrow, and there is little tendency to gouge out twists or bowls. Two furrows can be used to advantage in sod that is likely to hang together and fold back over the edge, or even fall back into the ditch, instead of tearing loose and flying away. Make them as far apart as you want the ditch to be wide. The explosive will then throw out the material, sod and all, that is in the strip between the furrows. If the ground is too brushy, too swampy, or furrows can not be made for any other reason, it would be as well to cut the sod or ground with a shovel on one or two lines.

Of the 93,111 motor cars registered in Minn. up to Nov. 1, 1915, 46,562, or over 54 per cent, were owned by farmers.

A garden tractor to be operated like a lawn mower by a man walking behind it is being made in the East. Various garden tools may be attached as with the Planet Junior.

Do It Electrically



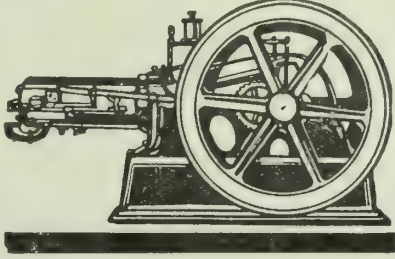
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We carry these appliances in many of our branch offices, and will be glad to have you call and inspect them. Where we do not carry them we will be just as glad to give you our expert advice.

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BUILT for western conditions by men of western experience. Has fewer parts, burns distillate, and has a record of doing what other engines can't. Investigate the Commercial before you buy. Send for Catalog 22-E, showing details of construction, and containing testimonials from men you may know, as well as valuable irrigation data.

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Are automatically water balanced and require no adjustment of any kind. All weights of shafting and rotating parts are carried on the water film; absolutely without the use of thrust bearings or adjustment of any kind.

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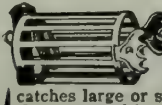
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CHUBBUCK'S IDEAL GOPHER TRAP
Larger than runway; jaws pull rodent in; catches large or small gopher and holds it. Farmers say it's worth dozen other makes. Big sales. Price 50c. If not at your dealer's will send it to you postpaid; 2 for \$9c; 6 for \$2.70; 12 for \$5.10. Money back if you are not satisfied. Free circular. **E. J. Chubbuck Co., Dept. B San Francisco, Cal.**

General Agricultural Review.

DECIDUOUS FRUITS.

Every peach in Tulare county is reported sold.

Visalia canneries are ready to begin the fruit run.

Bartlett pears from Sutter county started east last week.

Elberta shipments from Armona will start about Jul. 15.

California has shipped 265½ cars of peaches to June 27, while Ga. had shipped 334.

Dried apricots were being delivered the last of June to Kings county packing houses.

Shipment of the 500 tons Tulare county peaches recently sold to Pasadena canners, has begun.

Pear blight has been discovered in Paso Robles district which has hitherto been free of the disease.

A rest cottage and flower gardens have been fixed for the 400 women employed at the Selma plant of Libby, McNeill & Libby.

Total apple exports last season from North America were 1,437,587 barrels. The highest previous season was 1896-7, 2,919,846 barrels (including boxes at 3 per barrel).

The Sebastopol Apple Growers' Union reports many new members. Their Sebastopol and Stony Point houses began operations about Jul. 1. Graton and Forestville houses began earlier.

The California Peach Growers has bought a number of packing houses and warehouses in San Joaquin valley from the Associated Raisin Co. and is negotiating for some in the Sacramento valley.

An eastern apple buyer recently told Manager E. C. Merritt of the Sebastopol Apple Growers' Union that he could pay 25 cents more per box if no Gravensteins could come to his market except through the Union.

New York City exported 600,000 barrels of apples in 1880-81; 364,452 barrels 1915-16. Of the last season's total American exports Liverpool took 526,195 barrels; London, 373,882 bbl.; Glasgow 339,422 bbl.; others 197,928 bbl.

The National Standard Barrel law became operative July 1. Fruits, vegetables, and other dry commodities, for sale or shipment, unless sold exclusively by weight or numerical count, must be packed in barrels of 7,056 cubic inches interior capacity.

CITRUS, NUTS, SEMI-TROPICAL.

Increased almond acreage in Sutter county is expected to fill the vacancy caused by light crops.

Withertip has attacked practically every citrus orchard in Fla. Pruning it out in June and July is practiced.

Thinning out the pepper tree branches in the citrus belt at \$3 per tree is a remedy proposed for the citrus scales which breed in them.

The Capay Almond Growers' Ass'n on June 22 elected W. Naismith president and C. C. Barr Sec.-Treas. They took in nine new members at that meeting.

The June 1 estimate of the Florida citrus crop by U. S. Dept. Agr. is 68 per cent of normal and bloom scattered. Some orchards have been blooming for six months.

The Corning Olive Growers' Ass'n met last Sat. night to hear Market Director Weinstock's views on the proposed State Olive Growers' Ass'n. Jas. Mills also urged co-operation.

The Arbuckle-College City Almond Growers' Ass'n has let the contract for building the first unit of its new hollow brick warehouse. It is to be finished by Aug. 15 at a cost of \$2315.

Caprifig trees swarming with the wasps which are necessary to Smyrna pollination were about to be cut down by a grower in Merced county because the fruit was always "wormy." That is a most valuable characteristic of caprifigs.

Eighteen orange growers of the Palermo District have formed the Palermo Citrus Association, and will ship their crop this year through the Superior California Fruit Growers' Exchange, which is a member of the California Fruit Growers' Exchange. About eighty carloads of fruit are represented in the new Exchange. The Association has taken over the packing shed operated last year by the Butte County Citrus Association at Palermo.—Oroville Register.

GRAPES AND SMALL FRUITS.

The first crate of Fontainebleau grapes was expressed from Vacaville June 23 to New York.

More berries have been shipped from Sebastopol to date this season than to date any previous season.

Sebastopol Loganberries are estimated by I. N. Cable to have netted in the crate \$60 per ton, Mammoths \$70; outlook for Lawtons fine.

"Our association shipped 500 tons of Loganberries into Eastern markets, have delivered 350 tons to the cannery, 112 tons to the juice factory, and we have no doubt that the two other canneries buying in our district have obtained at least 200 tons."—Manager I. N. Cable, manager Sebastopol Berry Growers.

GRAINS AND FIELD CROPS.

Butte county rice growers seem to be troubled with dam tamperers.

Some 60 big harvesters have been operating in the Tracy section.

Bean supplies are running out three months before much of the new crop will come in.

California Garden - Making

August and September are the months to begin the ALL-THE-YEAR Garden Making of California Valleys and Foothills.

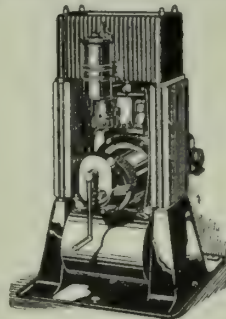
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LIGHTING SYSTEM

Electricity for Farm Homes NO BATTERY

Size of complete unit 24 in. by 25 in. and 42 in. high.

CHEAP FUEL

Will operate 50 lights 7½ hours on 1 gal. mixture of 80 per cent coal oil and 20 per cent gasoline; cost 11c. No cost to install; operation cheapest on the market.

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LIQUID FERTILIZER
Contains the vital elements that plant life needs for growth. Produced 34 flowers on a Shizanthus in 28 days. Try this wonderful fertilizer. Easy to apply—inexpensive—odorless. One tube treats 100 plants. Mailed direct from manufacturer, if you desire. Full directions with each tube. One tube, 25c—Five tubes, \$1.00.
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The Bates Steel Mule

(One Man Tractor)

---"Does Everything But Balk or Bray."

THE BATES STEEL MULE will take the place of more than 12 horses, pulling strongly all the time. It is THE TRACTOR for all farm work and only one man is required to run it! Let us show you how THE BATES STEEL MULE will pay for itself in less than one year.

EVERY implement on your farm can be run by THE BATES STEEL MULE and the operation is so simple that a fourteen-year-old boy can do the work. Write for our FREE CATALOG, which tells further interesting facts about this wonderful machine.

BATES STEEL MULE COMPANY

of California.
320 N. San Pedro St., Los Angeles

Stockton grain warehouses have been shipping new barley to New York for export to England.

Kansas has issued a call for 700 harvest hands at \$2.50 to \$3 per day and good board and "sleeps."

Over 4,000 sacks of limas have recently sold at \$6.60 at Oxnard, the highest price paid in 30 years except for seed.

Use of Delta corn stalks as shredded fodder for the sheep brought there to winter, is being agitated.

Delta onion acreage is estimated at 4000; short of last year by 1000. 2000 acres are said to be contracted for seed.

A Yolo grower of 600 acres barley and 200 wheat recently bought 10,000 sacks. About 12½ sacks per acre average.

More choice hay had been reaching San Francisco June 30 than before, and several lots brought better than the market quotations.

On June 27, Cal. had shipped 3602 carloads of cantaloupes according to U. S. Dept. Agr. The nearest competitor was Ga., with 134 carloads.

Alfalfa cut when ¼ in blossom, contains more digestible nutrients and holds its leaves better than if cut later, says the Washington Expt. Sta.

An Oakdale grower recently shipped a car of onions to Stockton at \$2.50 per sack. He has three acres from which he hopes to net \$2500 this year.

Hay buyers in Livermore valley are waiting for lower prices while growers hold for higher. Their crop is reported of better quality than its usual fancy stock.

Wheat varieties especially promising in yield, stiffness of straw, and baking qualities have been developed and are being offered to farmers for experiment, by Ohio Expt. Sta.

The State Sealer of Weights and Measures has found that hay baled in July may lose as much as 200 pounds per ton by September. Therefore weights taken in July are unlawful for Sept.

The Sperry Flour Co. recently shipped to Stockton 500 tons of Northern Bluestem wheat from Portland for milling. They also bought in one lot, 760 sacks of bright local barley for feed at \$1.25 per cental.

California follows Colorado in beet sugar production. Our output has steadily increased from 95,000 tons in 1906-07 to 195,000 tons in 1915-16. Next year's output is expected to be greatly increased.

Hay should be cured slowly enough so the moisture from the stems will evaporate through the leaves. Such hay will have better color and hold its leaves better, but should be cured fast enough to prevent mold.—Wash. Expt. Sta.

On June 1, there were about 84,000 tons of barley available for sale in Cal., out of last year's crop of 600,000 tons. Of this, about half had been sold, but could not be moved for lack of transportation.

A Sacramento county Chinese labor contractor recently took contracts to pick over 500 acres of Turlock can-

taloupes at 16 cents per standard crate and 7 cents for flats. This includes making crates, labeling, and hauling to shed. The price is several cents less than white men have been working for. Over 300 Chinamen will be brought in.

MISCELLANEOUS.

A soil survey of Santa Maria valley, Santa Barbara county, is being made by the U. of Cal. and U. S. Dept. Agr.

The Calif. Manufactures Census Bureau announces over 10,000 manufacturing establishments in Cal. in 1914, producing \$700,000,000 worth of goods.

A public hearing to consider tenta-

tive boiler safety orders of the Industrial Accident Commission will be held in Los Angeles July 13, 10 a. m. Union League Bldg.

The Southern Pacific Co. has given its employes who are members of the militia, leave of absence with same job on return, and full pay while absent to married men, ¾ full pay to those supporting families, and half pay to bachelors.

The average value of farm land throughout the United States in 1910, aside from buildings, was \$32.49 an acre, according to the census. In 1916, according to the Department of Agriculture, this value had grown to \$45.50, an increase of 40 per cent. Since the

total value of farm lands, aside from buildings, was returned in 1910 as \$28,475,000,000, the total increment since then must be more than eleven billions. The total agricultural wealth production in 1910, according to the Department of Agriculture, was \$8,498,311,413. The entire production of that year would not even pay increase in land values for the six years since then, to say nothing of the inflated prices that prevailed during the census year. And it requires as much expenditure of labor and capital to make the land productive, as it did in 1910. Is it any wonder that farm tenantry is increasing? — American Economic League, Cincinnati.

MID-YEAR MODEL 73 New Ideas

Mitchell
SIX

\$1325 f. o. b. Racine
26 Extra Features

700 Improvements

Made by John W. Bate, the Efficiency Engineer

The Mid-Year Mitchell is the 17th model which John W. Bate has built. He has worked out in those models 700 improvements, and all are now found in this car.

A Lifetime Car

What he has aimed at is a lifetime car. His genius is efficiency as applied to machines. And he says that a car should last like a watch.

Instead of heavy castings he believes in light steel made three times as strong. There are 440 parts in this New Mitchell which are either drop forged or steel stamped.

He believes in Chrome-Vanadium steel, and he uses a wealth in this Mitchell.

He believes in making each part as strong as need be, and then adding 50 per cent.

He believes in utter simplicity—in a car almost trouble-proof.

One result is this: One Bate-built Mitchell has run 218,734 miles. Six Mitchells have averaged 164,372 miles each. That is more than 30 years of ordinary service.

He has certainly come closer to a lifetime car than anyone else ever did.

10,000 Savings

In our factory Mr. Bate has made 10,000 savings. He has reduced our costs 50 per cent in five years.

He has done this by building a model plant—a plant which covers 45 acres. He has equipped it with thousands of time-saving machines. He has invested in this factory about \$5,000,000.

No other plant in the world could build this New Mitchell at anywhere near our price.

That is why, years ago, we brought John W. Bate here. And why we paid him his price to make this factory and car represent the last word in efficiency.

26 Costly Extras

You will find in this Mitchell 26 costly extras—wanted things which other cars omit. Things like a power tire pump, reversible headlights, cane-handle control, cantilever springs, etc.

There are 26 of those extras—each something you want. In other cars they would cost you an extra price. In the Mitchell they are free. All are paid for out of factory savings.

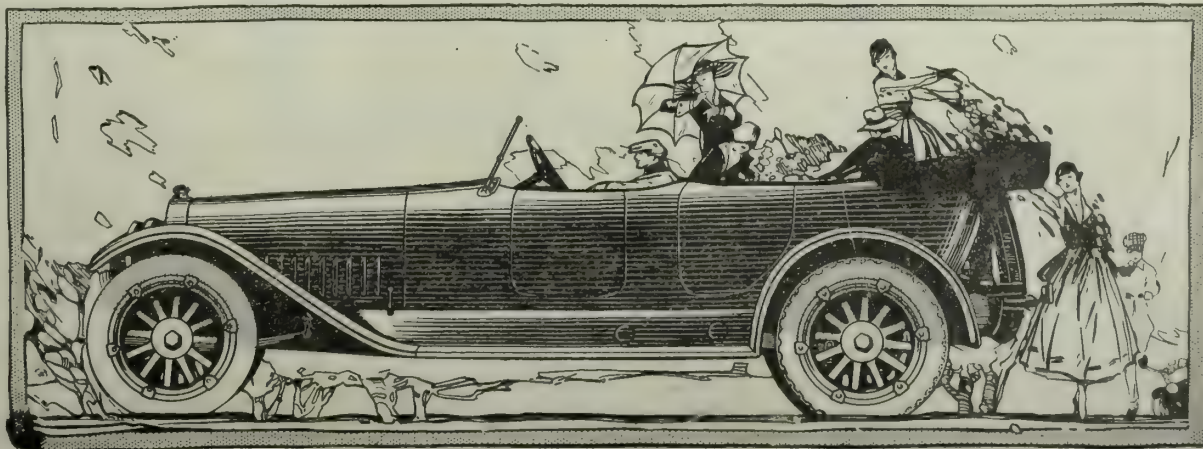
257 Cars in One

The Mid-Year Mitchell is the latest model out. It was not completed until after the New York Shows. Our experts and designers there examined 257 this-year models. And all the best new ideas from all of them are combined in this single car. It brings out 73 new touches in body, finish and equipment. It is the most complete car on exhibit.

Mitchell dealers everywhere are now showing this new model. It is the only car with all Mr. Bate's ideas. It is the greatest value ever given in a high-grade car. If you don't know your Mitchell dealer, ask us for his name.

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High-speed, economical Six. 48 horse-
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Fleur de Soufre, Anchor Brand, Velvet Flowers of Sulphur and Eagle Brand. Packed in barrels and double sacks. Are the fluffiest Sulphurs that money can buy; the best for vineyards; the best for bleaching purposes. LEAVING NO ASH. SEND FOR ILLUSTRATED BOOKLET; also PRICE LIST and SAMPLES.

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Determining a Sire's Good Daughters.

[Written for Pacific Rural Press.]

One of the greatest handicaps of the purebred sire is the fact that too large a percentage of dairymen expect all of his heifers to be outstanding producers, not considering the fact that a certain per cent of all breeding operations are misfits.

This misunderstanding restricts the practice of weighing and testing the milk from each cow, which is the final measure by which every cow has to be judged intelligently.

Probably each breeder will have to decide for himself what percentage of his heifers by purebred sires are misfits, owing to the different conditions of feed, climate, and the minimum fat standard he has set for his herd.

In this connection the experience of O. T. Willsie of Humboldt county is of interest. His present herd was established by a previous owner many years ago, having been purchased as calves from a dairy in which purebred Jersey sires had always been used.

In this way the foundation was already rich in the blood of purebred Jersey sires. To intensify this breeding, purebred bulls were used on the herd till Mr. Willsie purchased them about three and a half years ago.

During this time, selection had been chiefly done on dairy conformation, persistency, and good judgment of the owners. This had established an ideal type of cow and a supposedly high producing one since the returns from the creamery were highly satisfactory. The herd comprised 37 head when Mr. Willsie bought them.

The first year after securing them they were not entered in the cow-testing association; but the second and third years they were; and while one cow has produced over 630 pounds of butterfat in a year, 12 of the 37 fell so far below Mr. Willsie's minimum of 350 pounds of fat for aged cows, that they were disposed of.

Thus it was shown in face of the fact that purebred sires and good judgment in selection had been practiced for a great many years, that still nearly 33 per cent of the cows had not been sufficiently benefited to warrant their further keep.

It would be natural to suppose that by culling out the poorer cows, without adding others in their place, the herd average would be materially improved but the testing has been still more beneficial than that; as it has allowed more certainty in enlarging the herd.

While the herd has been increased from the 25 original high testers, to 40 head at the present time, the average has continued to improve; and during May 14 cows averaged two pounds of fat a day or better. This leads Mr. Willsie to expect a herd average of 400 pounds of fat or better during the present year, an increase of 11 pounds of fat over the best previous year.

GOOD UDDER AND TEATS.

[Written for Pacific Rural Press.]

It is true that many good cows have poor teats and udder development; but it is also a noteworthy

fact that the experienced dairyman is invariably impressed with the cow having good-sized, well-placed teats and a nice square udder, when purchasing for his own use.

The writer recently visited a district where this matter of good teats and udders has received unusual consideration by dairymen generally, with the result that no matter how large or how small a cow may be, she always has comfortable teats for the milker, and presents a nice square udder to the visitor.

By inquiry among the various dairymen, we learned that the condition is entirely due to years of selection and breeding, the same as for butterfat. Cows with poor udder and teat development are apt to transmit the fault to their heifers; and in choosing the annual supply of heifers, those from cows with good development are the only ones retained.

The bull is also an influencing factor and as one dairyman remarked, "I never buy a herd sire that doesn't have good rudimentary development; for one bull can do more damage in this respect, than years of selection with the dams can improve."

CROSS BREEDING COWS.

To the Editor: Have recently purchased a Jersey cow whose sire is purebred Jersey, dam unknown, now bred to purebred Holstein bull; will her heifer calf prove a good producer, generally speaking, and is the Jersey-Holstein cross a good one as a rule, for farm purposes? Which bull should this cow's heifer calf be bred to in order to preserve the good results of the cross, a Holstein or a Jersey?—L. A. B., Oakland.

[Your calf is theoretically $\frac{1}{2}$ Holstein, $\frac{1}{4}$ Jersey, and $\frac{1}{4}$ unknown. Practically, it may show more characteristics of one breed than another. She is likely to be a good producer because of the pure blood of dairy breeds behind her. But this heifer's calves will have far more than even chances of showing reversion to scrub type and low production than she had. Crossbreeding purebreds often results in fine producing milk and meat animals, but they are no good for breeding because their offspring will have much greater tendency to revert to unprofitable characteristics. If you prefer Jerseys, breed the calf to a purebred Jersey bull and continue purebred Jersey sires on all the offspring, to get your stock near-purebred Jersey in the shortest possible time.

You can get the highest grade almost purebred cows sooner, however, by consistently using purebred Holstein sires since the calf has twice as much Holstein as Jersey blood to start with. High grades of any one breed are always more satisfactory in the long run than crossbreds.]

SPACE PER TON OF HAY.

To the Editor: How much loose tame oat hay well cured will a space 20x14x14 hold?—L. A. B., Oakland.

[Hay occupies 400 to 500 cubic feet per ton when well packed and well cured. If your space is entirely filled, the hay will probably weigh about 9 tons.]

60 Duroc Jerseys 60

Mossdale Farm, J. E. THORPE, Manager FRENCH CAMP, JULY 15

Assisted by consignments from Rucker & Coppin, J. K. Fraser, L. D. Collins, J. P. Daggs, Ed. E. Johnson, Guy H. Miller, W. J. Hackett, and others. An exceptional opportunity to secure foundation stock of the best. Sale held at French Camp at the Grange Pavilion. Take Southern Pacific and Western Pacific to French Camp. Santa Fe, Tide Water, Southern, and California Traction to Stockton, met by appointment. Write for catalog.

COL. BEN. C. RHOADES, Auctioneer.



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HOLSTEIN CATTLE The breeding herd of registered Holstein cattle at Santa Anita Rancho is made up of individuals selected strictly upon their merits as producers, high individual quality, and production and proven transmitting power of their ancestors. PRINCE GELSCH WALKER, whose combination of breeding, individuality, and the production of his daughters stamp him as one of the greatest young sires of breed.

Females in the herd are making large official record as rapidly as they freshen, and the herd is being developed to become one of the largest groups of high producers in the West.

At present a few bull calves are offered for sale. These are straight, well-marked youngsters, bred right, and priced moderately.

BERKSHIRE HOGS The breeding herd of registered Berkshires has been carefully selected and represents the blood lines that are in the very first rank of the breed. The herd is headed by KINTYRE LAIRD, first prize junior yearling and reserve senior champion boar at Panama-Pacific Exposition. He is an unusually good type, and comes from a family noted for uniformity and prize-winning quality.

A few boar pigs are offered at this time.

POLAND-CHINA HOGS In founding the herd of registered Poland-Chinas at Santa Anita Rancho, the choicest individuals of the most noted prize-winning families in the West were drawn upon and for uniformity, desirable size and quality the herd is unexcelled in the West. At the head of the herd is BANKER'S BOY, junior champion and reserve grand champion at P. P. I. E.

Anita M. Baldwin W. H. TAYLOR, Superintendent.
Santa Anita, Cal.

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Prince Alcartra Korndyke,
Best bred son of Tilly Alcartra.

Our supply of these young sires is always limited, but we have a few now which we are offering at very reasonable prices.

Write us at once, or call and see the herd.

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SHARPLES SUCTION-FEED CREAM SEPARATOR

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SHROPSHIRE RAMS

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Shorthorn Bulls

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On April 21st we arrived from
Missouri with a carload of choice
registered Bulls and Heifers.

INSPECTION INVITED.

H. L. & E. H. MURPHY,
Perkins, Sacramento Co., Cal.

Why Lower Hog Prices than Chicago?

To the Editor: Why is the San Francisco hog market one to two cents lower on good hard grain-fed hogs than Chicago? In the country where the farmer is not in position to ship his hogs in carlots to South San Francisco, the price is not 8 cents, but 5 1/2 to 6; and you have to stand in with the butcher to get that. We would be pleased to get an explanation from a San Francisco packer.—M. A. R., Tucson, Ariz.

[Answered by F. L. Washburn of Western Meat Co., San Francisco.]

[There are a good many reasons why the hog market in San Francisco is lower at certain times of the year than in Chicago. At the present time (June 24), top hogs in Chicago are selling at \$9.80. Our quotation here for hogs is 8 1/2 c, for stock weighing 150 to 250 pounds; and on hogs that yield 78 per cent, we pay 10c per cwt. additional on the live weight, and 10c for every additional 1 per cent.

Seldom, if ever, do we get any hogs that are equal to the hogs which are being sold in Chicago at 10c a pound.

Our percentages of condemned carcasses on straight weeks' killing, have been running of late from 5 to 7 per cent; and I feel safe in saying that at no other point in U. S. are the losses from tuberculosis so bad as from those hogs originating in the dairy districts of California.

Ninety per cent of the people of our State, especially in the larger communities, have the idea that ham and bacon from California hogs is inferior. You will find that almost every retail dealer will tell his consumer that he is handling nothing but eastern pork products. As a result, we are unable to sell the meats from our hogs at anything like as high prices as those secured by the eastern packers.

Another important point is, that the people of California eat very little fresh pork or fresh pork sausage. When you figure that at least 30 per cent of the eastern hogs are sold fresh at good prices, you can realize what a difference this means, where we are obliged to pack almost our entire production, on account of the very small demand for fresh pork.

Furthermore, the big centers of population in the East are enormous consumers of sausage and miscellaneous edible products, such as the tails, trimmings, spare ribs, cheek meat, ears, snouts, jowls, neck bones, etc., whereas, on the coast, we are not able to market these miscellaneous products to the same advantage.

Should Co-operate to Ship Carloads.—I realize that the small hog raiser is at a disadvantage in being obliged to accept prices offered by the country shipper or speculator. This can be avoided, if the farmers will get together, mark their hogs, and send a good man in with them to see that they are weighed separately at the Stock Yards.

Consistent Grain Feed.—In the East, practically all the hogs received in the principal markets are corn-fed. Here the hogs may have been fed grain for two weeks, four weeks, or two months; and they might all look about alike, and the percentage of inferior hogs included among those, for which we pay our full quotation, is much larger than

an eastern packer would think of receiving. I dare say that a big majority of the California hogs are shipped in unfinished; and it is a constant fight with us to get the shippers to hold back on light weight hogs.

We are starting a plan to pay shippers of good hogs a premium on the basis of yield, and on any good grain-fed hogs that yield 78 per cent, we pay 10c per cwt. premium, and 10c per cwt. on every additional 1 per cent of yield.]

BEATING A FLUCTUATING HORSE MARKET.

"Prices of inferior horses are never very far above the cost of production; and frequently they are considerably below," says W. E. Carroll in Circular 18 of Utah Agricultural College.

In this circular he gives a chart which shows the number of horses and the price on farms of the United States since 1867. This shows that the number of horses is less subject to variation than is the price, but a comparison of the two curves shows that the number of horses is not entirely independent of price. "For example," he writes, "1879 marks a low point in the price of horses, which resulted in a falling off of one million in numbers in 1882. Again in 1897 horses were worth a little less than \$32 per head. This decline began about 1890. The decrease in numbers began about 1893 and continued to a low point in 1899."

It is natural, he thinks, that the falling off in numbers should be a year or two later than low prices, because men cannot go out of the business, all at once.

The point he makes is, that at each low point in prices those breeding horses become dissatisfied and many get out of the business. In a few years the supply gets down to normal again, the demand brings up the market and men buy in at advanced prices. He believes the only wise course to pursue when faced with such a widely fluctuating market is to produce a rather steady supply of a product of the very highest grade, rather than to jump out when prices are low, and in when prices are high.

UDDER CAKED — LOW MILK FLOW.

To the Editor: When our 8-year cow calved three weeks ago, her udder caked and we could get only a little bloody, thick, nasty milk for several days. We bathed her udder with hot water and rubbed with hot grease 2 or 3 times a day for two weeks when it got all right. Since then she has given 3 pints each milking—is healthy and a heavy feeder. Can I bring her back to normal milk flow? We feed alfalfa. She does not care for bran.—C. O. B., Manteca.

[Udder troubles are hard enough to handle in the early stages, to say nothing of a chronic condition such as you have. Try the following: black antimony sulphide 3 oz., sulphur 1 oz., anise 8 oz., salt 2 oz., soda bicarbonate 2 oz. Give 2 oz. of this mixture twice a day in the feed.]

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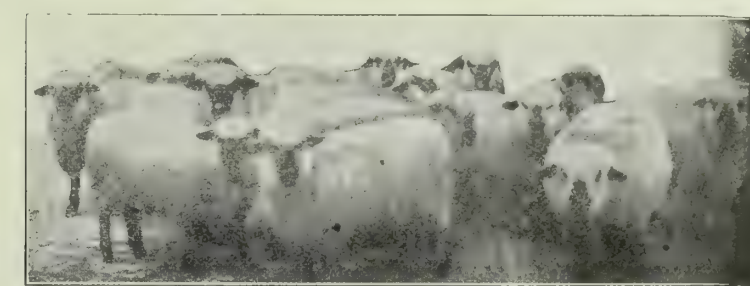
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(Large type, combined with high quality.)

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Address, PETERS, LAMSON & WALKER, DEVORE, CAL

With the Livestock Men.

[Livestock breeders all over the State are invited to send on postal cards notes regarding their sales, State and county intentions, new pure stock, etc.]

DAIRYING AND DAIRYMEN.

A dairyman writes from San Jose that he is having to pay \$16 a ton for alfalfa hay.

Thunderstorms cannot sour milk if it is kept clean and cool, says Mo. Col. Agr.

Frank Helm of Fresno has been buying cheap alfalfa hay and chopping or grinding it into good feed.

To keep milk sweet and safe for children, it must be kept clean, cool, and covered, says U. S. Dept. Agr.

The milking barn stalls at the State Fair, made very cozy officers' quarters for the soldiers recently encamped there.

The Petaluma Co-operative Creamery at Petaluma reports a diminishing cream supply due to early drying up of wild feed in the foothill districts of Sonoma county.

The LeBaron Estate recently completed a modern sanitary milking barn on their ranch near Valley Ford, Sonoma county; and have established a choice herd of registered Ayrshire cattle.

Manuel Marshall of Ingomar is putting up a new stave silo and modern milking barn and other dairy buildings. He is milking 200 grade cows and expects to erect two concrete silos next fall.

Bum wheat markets and lots of chinch bugs made Green county the richest per capita in Wisconsin because the settlers had to turn to dairying. There are now 39,000 cows in the county.

Norman B. Hunter of the Two Rock district, Sonoma county, is just completing one of the most up-to-date dairy barns in Sonoma county. Mr. Hunter has recently established a herd of registered Jerseys.

The dairy department of the Napa State Hospital is experimenting in the manufacture of fine grades of cheese. About 140 cows are being milked, and it is Manager Duffey's intention to exhibit a small herd at the coming State Fair.

Through a technicality, the new dairy law cannot constitutionally apply to milk products such as butter, but only to milk to be used as such, for human consumption. The defect will probably be remedied by the next legislature.

Creameries in Humboldt county are paying as high as 27 cents a hundred for skim milk which is being manufactured into casein. This is the highest price dairymen in that county have ever received for this product.

The Woodland Creamery has sold some stock to Wood, Curtis & Co. of Sacramento, who have been its selling agents. The directors have decided to pay 3 cents for fat over San Francisco butter quotations, and 3 cents still additional for fat in sweet cream.

The Spreckels Sugar factory is going to put up a beet pulp drier this summer, and for the first time, will have dried beet pulp. This will increase the available supply considerably. An estimated 60,000 tons dried beet pulp produced in the State last year failed to supply the demand.

SWINE BREEDERS AND STOCK.

R. K. Walker of Peters, Lamson and Walker has gone East to buy Durocs from the best herds in Iowa, Ill., and Ohio.

O. L. Linn of Modesto has purchased the interest of his partner,

W. A. Porter; and is selling all of their registered Holsteins, so he may spend all of his time raising more and better Poland Chinas.

Several cases of hog cholera are reported from Dos Palos where Miller and Lux and other raisers have suffered considerably. It is thought that the disease has been spread by the irrigation canals.

Peters, Lamson, and Walker of Devore report sale the last two weeks in June of 41 purebred Duroc sows and boars in Perris Valley, Lancaster, Palmdale, Daggett, San Fernando Valley, Holtville, and Devore. Their herd numbers between 500 and 700 head.

M. Bassett of Hanford reports that he is about sold out of Poland China hogs. He has a fine lot coming on, and has promised to consign 20 head to the Kings County Poland China Breeders Ass'n second annual sale.

The third meeting of the Duroc-Jersey Ass'n of Stanislaus County was held at the Board of Trade rooms, Modesto, July 1. They will hold a sale at the Livestock Show and Exposition in Sept. Not more than 40 head will be sold, and all of these must pass previous inspection by a disinterested committee.

BEEF CATTLE AND SHEEP.

A rabid coyote bit a man sleeping in his tent in Nevada the other day.

Two Mendocino year's clips were recently sold at 31½ and 32 cents, respectively.

George Wapple of Yuba City recently lost two calves by blackleg, and vaccinated the rest.

Cattle near Marysville were recently found with an unknown ailment, supposed to be weed poisoning.

J. W. Browning of Maxwell recently sold 150 beef range cattle to Idaho buyers for shipment to Kansas City.

At Cloverdale's spring wool sale June 21, 12 months' fleece brought as high as 31 cents and 8 months' sold at 27.

Dr. W. J. Young of Stockton recently bought 3000 acres grazing land near his ranch east of Lodi at a reported cost of \$100,000; and is said to intend raising cattle on the whole place.

The Nat'l Wool Growers' Ass'n has appropriated \$10,000 to the American Red Cross, if war with Mexico shall be declared. It was suggested that woolen blankets be furnished up to \$10,000 worth.

The Fresno stockyards plan seems to be evolved into a proposal for the railroads to put up stockyards for concentration of stock for inspection and bids of San Francisco and Los Angeles buyers. Chas. Gatewood, P. M. Bostwick, and R. Pryor were appointed to sign up 200 stockmen before operations will begin.

HORSEMEN AND HORSES.

Since the European war opened, 1,500,000 American horses and mules are said to have been exported.

Local horse and mule buyers around Winters have been busy getting stock together for inspection of Government buyers.

A bill to appropriate \$200,000 to engage the U. S. Government in breeding cavalry horses, is proposed by Senator Pittman of Nevada.

Fifteen broncho busters for the European allies were recently called for, through the California State Employment Bureau. The "busting" is to be done on this side of the water.

"Horses for cavalry should be rather small, decidedly hardy, and intelligent," says Senator Pittman of Nevada. "Such can be obtained by crossing the thoroughbred on western plains stock."

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SWINE.

BILLIKEN HERD OF IMPROVED CHESTER WHITES—The kind that makes the money. Pure-bred—registered—cholera immune. An extra fine lot of weaned pigs—both sexes—representing the best and most popular blood lines this breed produces. Five different sires used. Can mate up not akin. Quality combined with size. Rapid growing—early maturing. A few nice fall gilts that will be bred and ready to ship in September. Write for prices and circular. C. B. Cunningham, Mills, Sacramento County, Calif.

REGISTERED DUROC-JERSEYS—Fall boars and gilts. Weanlings sired by an excellent son of the 1020-pound Royal Munda. We have pigs sired by this boar weighing 240 pounds at 7 months, and out of line bred Golden Model, Crimson Wonder, Orion, Chief, and Colonel sows. For information write Haden Smith, R. 1, Box 84D, Woodland, Cal.

YOUNG POLAND CHINAS, LARGE TYPE—Boar IBA Wonder won first and Reserve Championship P. P. I. E., weighing 730 pounds under 2 years and in breeding condition. 60-day special—fine young sows bred to IBA Wonder at very low prices; also weanling pigs, either sex. Satisfaction, or money refunded. W. A. Young, Lodi, Cal.

BIG TYPE POLAND CHINAS—The profitable money-making hog. The hog for the farmer. The real mortgage lifter. Large herd to select from. Bred sows, bred gilts, open gilts, weanlings of both sex. Boars ready for light service. Extra special prices. Geo. A. Smith, Corcoran, Cal.

REGISTERED DUROC-JERSEY—Weanlings, shoats gilts and boars. Unrelated. Many of our hogs are related to the several prize-winners at Panama Exposition. This herd is undoubtedly the finest in the State. Have had as many as 19 pigs to a litter. Grange Stock & Poultry Farm, Yountville, Napa Co., Cal.

HAMPSHIRE SWINE—Both males and females from Grand Champion 700-lb. boar and Grand and Junior Champion sow. Also Guernsey bull calves from Grand Champion bull. BELLA VISTA HERD, J. W. Henderson, 1st National Bank Bldg., Berkeley, Cal.

REGISTERED BERKSHIRES—World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapeville Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

BARGAINS IN CHESTER WHITES—Few excellent bred gilts, \$30; sows, \$35. Service boars, \$20 and up. Weanlings, \$10. Best blood lines. Only good individuals shipped. Dallas Bache, Hollister, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

DUROC-JERSEYS—Some great weanlings of both sexes by "RIVER BEND HIGH MODEL." Improve your herd by introducing this blood. RIVER BEND FARM, St. Helena, Cal.

FOR SALE—Fancy belted Hampshire hogs. Well belted young sows and boars registered. Prices reasonable. Ben P. Thorpe, Manager, Canfield Estate Ranches, Bonsall, California.

REGISTERED BERKSHIRES—BOARS—5 and 6 months old \$15 and \$20 each. Also a few year-old ones. All pure-bred animals. O. A. Casey, San Jose, Cal.

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DEL DAYO FARM—(Old Haggin Bottom Ranch)—Breeders of registered Berkshires. Both sexes for sale. Stephen S. Day, Box 1140, Sacramento.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

IMPERIAL STOCK FARM BERKSHIRES—Registered stock of all ages. Prices and description on application. R. J. Merrill & Son, Morgan Hill.

LAKESIDE STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

LARGE TYPE POLAND CHINAS—Now booking orders for Spring pigs from our Nebraska prize-winning sows. H. L. Marsh, Route A, 348, Modesto.

REGISTERED BERKSHIRES—For sale, bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

POLAND CHINAS—Young stock; either sex. Write for pedigree. Reasonable prices. Edw. A. Hall, Watsonville, Cal.

POLAND-CHINAS—250 lbs. in six months our aim. Imported sows. None better. Linn & Porter, Route A, Modesto, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

REGISTERED POLAND-CHINA SWINE—Prize-winners. Finest stock in the state. \$20 up. M. Bassett, Hanford.

REGISTERED DUROCS—Herd headed by Crimson Monarch 2nd. Write for prices. J. M. De Vilbiss, Patterson, Cal.

FOR SALE—Two and three months old thoroughbred Poland China Boars. Mrs. F. A. Rodgers, R. 1, Box 34, Galt, Cal.

REGISTERED IMPROVED CHESTER WHITES—Ortizly Bear Ranch, East Auburn, Cal.

REGISTERED DUROCS from best Eastern blood lines. Weanlings, \$10. No culls. S. S. Southworth, Napa, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys Cholera immune for Mrs. T. H. Beckman, Lodi, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boudier & Son, Napa.

REGISTERED DUROCS—All ages. One yearling boar. Satisfaction guaranteed. Frederick J. Johnson, Napa.

REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. Mikosell, Manteca.

POLAND CHINA HOGS FOR SALE—Registration papers furnished free. C. A. Cooley, Durham, Cal.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRE PIGS—Write or call Greenwood Ranch, Brentwood, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

POLAND CHINA HOGS—Registered. R. J. Miller, Llewellyn Ranch, Lathrop.

POLAND CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

CHAS. GOODMAN—Breeder of high-class Berkshire Swine. Williams, Cal.

REGISTERED O. I. C. Very reasonable. Geo. McGee, Calipatria, Cal.

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REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

REGISTERED O. I. C. SWINE—C. D. CONWAY, Ripon, Cal.

REGISTERED DUROCS—H. N. Leininger, R. D. 4, Chico, Cal.

REGISTERED POLAND-CHINA HOGS—J. W. Wakefield, Acampo.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

BERKSHIRES—Carruthers Farms, Mayfield, Cal.

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YOUNG REGISTERED JERSEY BULL CALVES at reasonable prices. O. J. Ames, Oakdale.

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CHOICE HOLSTEIN bulls for sale. No females. Milbrae Dairy, Milbrae, Cal.

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REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes, McCoy, Oregon.

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HORSES—FOR SALE—30 head horses and colts; 11 head broken, 5 3-year-olds, 3 2-year-olds, 6 yearlings and 5 suckling colts. Price \$2200, or will consider rolled barley to full amount in exchange for tractor (track layer type) to \$1,500; balance cash. Box 128, Lancaster, Cal.

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For the half year ending June 30, 1916, a dividend has been declared at the rate of four (4) per cent per annum on all deposits, payable on and after Saturday, July 1, 1916. Dividends not called for are added to the deposit account, and earn dividends from July 1, 1916.
GEORGE TOURNY, Manager.

RECORD HOLSTEIN SALE.

(Written for Pacific Rural Press.)

The Charles Jay Welch sale of registered Holsteins held at Los Banos June 28 was probably the largest and most successful breeders' dispersal sale ever held in this State.

One hundred and ten head, including a considerable number of heifer and bull calves, brought a total of \$30,785. The cows averaged a little over \$360 and the heifers \$225. The highest price paid for any animal was \$1500 for the two-year bull, King Segis Wayne Pontiac. The highest price paid for a cow was \$675 for La Polka Pietertje Spotfoot De Kol, a three-year-old. There was such a demand for young bulls that a number not originally entered were included in the sale.

The interest in this sale and the prices paid were somewhat remarkable in view of the fact that this



herd has no official records. It is, however, one of the oldest Holstein herds in the State; and both the herd and its late founder had excellent reputations.

Well Advertised.—The sale was well advertised, and buyers from three states competed with a goodly number of local bidders. The sale was exceptionally well managed throughout. Auctioneer Benj. Rhoades was assisted in the ring by Jas. McAlister, Jr., T. H. Davis, and T. E. Getzelman. The 110 head were sold in a little over six hours.

C. R. Bicknell, the largest buyer, bought 27 cows, 4 heifers, and 5 bulls, including King Segis Wayne Pontiac. A. J. Zaballa of Salinas bid in 16 cows and 5 bulls to add to his purebred herd in Monterey county. Jas. McGillivray bought 13 of the best cows, including La Polka Pietertje Spotfoot De Kol, at an average of over \$400 per head. H. J. Long, who has a purebred herd at Longheart Ranch, Fallon, Nevada, bought 4 cows.

E. B. Church of Sierraville bought 3 heifers and 2 bulls as a foundation for a purebred herd.

The largest local buyer was M. A. Marshall of Ingomar, who bought 5 heifers and 2 young bulls. Mr. Marshall has a large herd of grade Holsteins and has now established a foundation for a purebred herd. The Simon-Newman Co. of Newman bid in 4 young bulls. Other buyers were Goodwin & Sons of Ripon; A. G. Prader, Geo. Johnson, and A. L. Long of Los Banos; G. E. Neiderhauser of San Bernardino; J. R. McCabe of Ingomar; Cross & Riddle, Merced; White & Sawyer, Gilroy; J. Hamilton of Snelling; and H. J. Vogel, a well known breeder of Fresno.

TO SELL GOOD BERKSHIRES.

(Written for Pacific Rural Press.)

Those who are looking for Berkshire breeding stock will surely have an unusual opportunity of selection at the first annual sale of Carruthers Farms to be held early in August.

In order to make the offering outstanding in individuality as well as in breeding, Mr. Carruthers, the manager, has picked only the tops from over 200 head for his first sale; and every one of the 47 to be sold is of show caliber.

The opinion has been expressed by Berkshire judges during the past

spring that the reserve brood sows on Carruthers Farms comprise the choicest large band in the West if not the entire United States.

With but one or two exceptions all of these matrons were bought from Rookwood Farm, owned by C. F. Curtiss, president of the American Berkshire Association, at Ames, Iowa, the object being to establish a herd of highly-bred Berkshires that would command unusual respect at the P. P. I. E. livestock show, which the awards show they did.

The present offering is almost entirely made up of young stock, out of these Rival's Champion Best sows, there being included in the sale five exceptionally fine young boars and sows out of Forest Grove Laurel 2nd, a young sow of great quality as shown in the accompanying illustration. Of this number, two are sows and three are boars, one boar in the lot being entered at the State Fair

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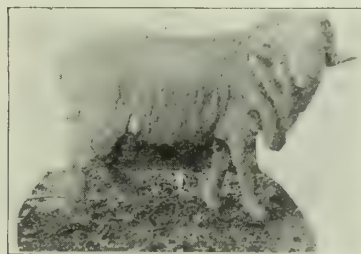
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525 Market Street, San Francisco

Five Cent Gains on Feeder Hogs.

[Written for Pacific Rural Press.]

How much should it cost to produce a pound of pork under average conditions in California? This is a question that is receiving serious consideration by a great many hog raisers, for it is the basis of all future enlargement of the swine industry.

B. E. King of Stanislaus county has had unusual opportunities of finding out what it costs to add a pound of pork on hogs weighing 100 pounds or over when feeding is started, as he is in the business of buying feeders and finishing them for the market.

In the first place Mr. King has found a great variation in the feeders he has purchased. Most of his stock hogs have come from mountain districts of northern California. Usually the requirements demanded of these stockers are that they be thin in flesh, weighing around 100 pounds, of good frame and from cholera free districts.

Once or twice hogs in fairly good flesh have been bought, but it was not possible to get such economical gains with them as with the thinner ones. Great care is taken in shipping these hogs as well as in buying them, to guard against cholera. All corrals and pens are thoroughly disinfected before driving hogs into them.

When the animals are unloaded at the ranch near Modesto they are immediately put onto concrete feeding floors, in a house 100 feet long, divided into five pens, with a capacity of 20 hogs to the pen.

Each pen is supplied with clean drinking water, a concrete trough for milk, and a self feeder, the latter being placed on the division lines and serving two pens.

The entire house is roofed, and both the feeding floor and wooden sleeping floor are drained by gutters. These are hosed off and kept sanitary at all times.

The ration being fed and the one on which the cost of adding gains for hogs weighing over 100 pounds at the beginning is figured, is composed of Brown Egyptian corn, ground barley, rice middlings, and molasses, mixed in the following proportions: three sacks of corn, three sacks of barley, four sacks of rice middlings, and 100 pounds of molasses.

This mixture is well stirred before feeding, in a large churn which had been discarded at the local creamery and which is run by a gasoline engine. After thorough mixing, it is put into the self feeders where it and all of the buttermilk the hogs will drink constitute the entire fattening ration.

In feeding out a carload of mountain hogs on this ration the past spring, Mr. King secured an average gain of three pounds a day for 30 days; and in 60 days was able to put on an average of 150 pounds per hog. At this rate of gain, he figures the cost per pound at five cents.

But his average cost per pound of pork sold from the ranch is considerably under that figure as he raises pigs in large quantities himself; and these are brought up to the hundred pound mark for less than five cents.

At present he has 70 brood sows and two registered boars. Except

during farrowing time, these sows and their pigs are run on alfalfa or barley pasture. They get all the buttermilk they will drink, and a light ration of the before-mentioned grain ration. This shoots them along rapidly; and at 100 pounds they are transferred to the fattening pens. They weigh at seven months, 175 to 200 pounds.

By acting as his own commission agent and shipping in carlots, Mr. King has been able to market his hogs in San Francisco with no loss other than shrinkage and freight. As his hogs are all grain fed, he secures the top price.

SHEEP ON MEADOWS IN NORTHERN CALIFORNIA.

To the Editor: How many sheep can be run per acre on the native meadow grasses of northern California or on timothy and redtop meadows?—K. S. S., Davis Creek.

[Answered by G. R. Wales, Milford, Lassen Co., Cal.]

[A man with a bunch of sheep can do better than run them on good meadow land. Cheaper range may be rented here, and the sheep will do as well or better. They want a certain amount of "browse," preferably on upland.]

Sheepmen here don't pasture the meadows, which are more valuable for hay. They range them in the mountains in summer; and either keep them on valley farms or drive them to the desert for winter.

One meadow might produce a ton per acre while another produces four; so the number of sheep would be variable if desirable.]

A 603-POUND GRADE COW.

[Written for Pacific Rural Press.]

Rosalee is the name of a grade cow 10 years old in the dairy herd of J. W. Coppini of Humboldt county. During 1915 this cow was entered in the Ferndale Cow Testing Association, whose records show that she gave 603 pounds of butterfat in a ten and a half months' lactation period.

"Nobody can pick her out of the herd as being the highest producer," says Mr. Coppini; and as a matter of fact she is far from the best looking animal in the herd, but that only goes to show how necessary the weighing and testing of milk is.

Rosalee was sired by a registered Jersey bull and her mother was sired by a Jersey bull out of a Durham cow. She is a good-sized cow, having likely inherited her size from the Durham grandmother. Her average test last year was 6.5 per cent. Since she was milked only ten and a half months, she probably has one of the highest records of any grade cow in the State and is an example of the possibilities of well-bred grade stock in the ordinary dairy herd and with ordinarily intelligent care and feed.

George V. C. Bacon has recently received some purebred Berkshire swine at his ranch in Sunnyvale that are intended as the foundation of a herd of breeding stock. They are from C. M. Talmadge; and consist of two sows of Matchless Baron-Robinhood strain and a boar of Belle's Champion-Royal Violet blood.

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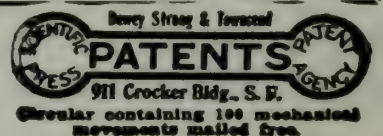
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CHEAP SHADE AND WALLOW FOR HOGS.

[Written for Pacific Rural Press.]

There are still those who contend that a mud hole is by nature a part of a hog's life; but the growing conviction of progressive hog raisers is that a mud hole is dangerous around the hog lot, because of its usual filthy condition. There are many farmers and breeders who do not believe a hog needs any kind of a wallow.

But if a wallow is necessary, one that can be kept clean is surely preferable. On the River Bend Farm at St. Helena both concrete and wood wallows are provided, though Manager W. W. Everett prefers wooden ones.

These wallows are built seven feet each way, being located on the division lines of the pens. In this way, they provide a wallow three feet wide and seven feet long for each lot.

They are made ten inches deep, the wooden ones being of 2x12 boards. Drainage is provided for each wallow so they may be easily cleaned. A board roof covers the entire wallow, the fence posts acting as the center supports. With this arrangement the hogs have access to both shade and wallow and the lots are kept free of mud.

PUREBREDS CURED OF FOOT- AND-MOUTH DISEASE.

[Written for Pacific Rural Press by
Jno. P. Irish.]

The terror of the foot-and-mouth disease, which attacks all split hoof animals, is its supposed incurability.

This terror has been emphasized by the habit of the scientific men who destroy all infected animals, always to the loss and sometimes to the impoverishment of the owners.

I had followed the history of the recent outbreak of this disease in Illinois and Iowa, and recently made a pilgrimage to a herd that had it and survived it.

This is the prize Holstein herd of Col. French on his farm near Davenport, Iowa. The animals were at a stock show in Chicago, when they were attacked and ordered slaughtered by public authority.

Col. French immediately secured an injunction against the destruction of his property. This did not restore the control of his cattle to him. They remained in official custody, quarantined in most insanitary conditions; but under treatment of the Colonel's own veterinarian; and they all completely recovered. When I saw them, the herd was worth a journey from the coast to see.

Now it seems to me that it is worth while for our breeders and beef and dairy men here to keep in mind Col. French's experience, and be prepared to isolate and treat their animals for recovery, rather than submit in a panic to their destruction.

I am sure that Col. French will gladly put his experience at the disposal of our breeders here.

IMPERIAL SHEEP POINTERS.

[Written for Pacific Rural Press by
Glenn F. Smith.]

W. A. Feeler of Holtville, Imperial county, sold his dairy cows and bought 150 Merino ewes. He has 30 acres of alfalfa and 10 of milo and barley, which keeps the flock in fine condition.



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He gives us the following pointers:
For the small farmer, a high grade of stock is desirable. Then by conforming to local conditions, fair success is assured.

Plenty of shade and fresh water

must be provided. Sheep here must be sheared about three times per year. Breeders find it unwise to have lambs dropped too late in spring. Late fall is generally accepted as the better time.

Farm Poultry for Profit.

CONSTANT SUPPLY OF EGGS FOR MAIL TRADE.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

To always have eggs on hand at all seasons and all weather, looks too big a job for some people; in fact this one item keeps the many from venturing into that field of business. This makes it all the better for the few that hold on and try to fill the bill. Now the fact is that the difficulty is not nearly so big as it appears to be. The first requisite for success along this line is forethought. The man or woman must be able to plan out a line of work and do the things in order as planned. The mail order business calls for even-sized eggs of moderate size and weight; no little undersized pullet eggs will fill such orders.

Hence there must always be hens of mature age. They should be selected both for good-laying qualities and for laying even-shaped eggs. Hens that have filled these conditions as layers for one year or 18 months should be used as breeders at least two years more; and every pullet that is raised from them should be tested for the same qualifications before being accepted as a layer. For the first six months of the usual pullet's laying, the eggs would be too small for mail order trade; but if bred from good stock that have been selected for the above qualities, the eggs would be all right after the first batch was laid out. Twenty-two ounces to the dozen is a nice-sized egg for mail order business; and whatever is started with should be strictly adhered to, in order to gain and keep the customers' confidence.

Hatch Some at Christmas.—The next in line is the time to hatch. It won't do to hatch one or two months and trust those chickens for a constant supply of eggs; because all hens need and will take a vacation at times. There should be some chicks hatched about Christmas time. If these pullets are well fed, they mature very early because of the season, but they should be held back until of a fairly good size. This can be done by moving them around from one yard to another. About the time they get settled move them again, but keep up the feed to make good growth. It will be all right to let them commence laying in late June or early July. Then by August or September the eggs will be fit for

your business. These pullets should carry you over a great part of the molting season for the hens; and before they think of molting, the early March pullets will be on hand. These March pullets will not molt if you feed them right, but beware of tinkering with the feed bill; pullets are about as touchy as pretty girls; they don't stand much nonsense, sometimes.

Then there should be a good hatch for September. Chicks hatched in September and October molt early the following year and are great to help out the fall supply of eggs.

The whole secret is in planning ahead and attending to such details as feeding right. If your hens are doing well, be satisfied. Don't try to cut something out to save a few cents and thereby lose several dollars. Some people cut the feed as soon as eggs go a cent or two below the usual price. Then the supply of eggs is cut in two, and perhaps eggs advance suddenly. Then these people go in a panic to stuff the poor hens with all kinds of feed to get more eggs. Don't do these things if your aim is a constant supply of eggs for your trade. Better to be regular in both quantity and quality of feed and get a regular supply of eggs.

TOE PICKING.

To the Editor: In your issue May 13 you have an article, "Good Luck with Chicks." What is the "balanced feed" which prevents toe picking?—G. N. M., Santa Rosa.

[We have never heard of a balanced feed that would prevent toe picking. The statement in the article reads, "The balanced feed, plenty of light, and scratch litter are held responsible for lack of toe picking."

We have talked with large numbers of large poultry raisers; and here is a theory summarizing their opinions: Chickens like worms, and toes look like worms in the semidarkness of most brooderhouses. Chickens also go crazy over blood and become cannibalistic. When they try to get the worms which are really toes, blood sometimes comes, and you had better get that chick out. Plenty of light and scratch litter prevents the delusion. Out of the stack of opinions, fancies, superstitions, observations, and theories of various people, we gather that the thirst for blood may be partly quenched by feeding meat scrap, milk, tankage, greens, and a judic-

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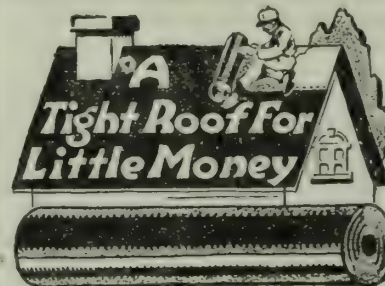
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36x3 1/2	12.05	2.40	2.75
30x4	13.20	2.80	3.10
31x4	13.85	2.85	3.20
32x4	14.05	2.95	3.30
33x4	14.70	3.10	3.40
34x4	14.95	3.15	3.50
35x4	14.95	3.15	3.50
35x4	15.05	3.20	3.60
36x4	15.85	3.30	3.70
31x4 1/2	20.25	3.85	4.30
35x4 1/2	20.85	3.95	4.35
36x4 1/2	21.25	4.10	4.50
37x4 1/2	21.90	4.15	4.60
35x5	23.05	4.70	5.20
36x5	23.95	4.90	5.35
37x5	24.90	4.95	5.45

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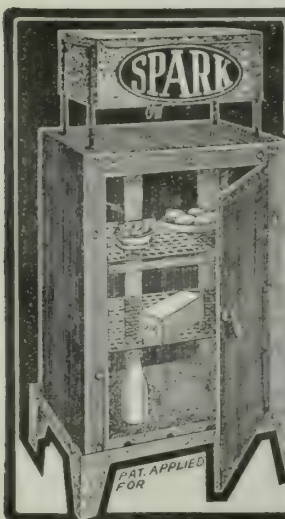
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ORPINGTONS—BUFF AND WHITE—Black Minorcas and Carneau pigeons. Breeding stock at half price as I am selling out. Mrs. Susan Swaysgood, Route 2, Pomona, Cal.

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BABY CHICKS—Strong and healthy, from high-bred free-range White Leghorn stock. Prices on application. Western Hatchery, W. S. Waldorf, Petaluma, Cal.

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ious amount of salt.

Mr. Hennings grinds his own feed and varies it from day to day to keep his chickens with good appetites. He grinds oats and sifts out the hulls for litter in the brooder house. This litter retains considerable feed, and makes the finest kind of scratching to keep chicks' attention away from each others' toes. He grinds corn, also cracks some; cracks wheat, grinds and rolls barley and oats, also oystershells, and chops greens. A little engine and grinder does all this. A feed mixer works the ground stuff up with bran, oil meal, beef scrap, bone meal, shorts, charcoal, etc., as determined daily. These are bought in quantities and kept handy near the mixer. The grains are made up mostly of carbohydrates which should comprise probably 4-5 of the ration. The mill feeds, milk and meat have a higher proportion of protein; greens and oystershells furnish necessary minerals. Balanced rations have been talked frequently in our columns during the past six months.]

SWOLLEN JOINTS AND CONTRACTED LEGS.

[By Susan Swaysgood.]

Something is the matter with my chickens' legs; they draw up; and when they walk they drag their tails on the ground. The trouble seems to be in the joint just above where the feathers quit. These joints become large and stiff. The chickens eat well and appear all right other ways. Am feeding Egyptian corn, rolled barley, alfalfa meal, cracked rice, and blood meal. Gave some milk that was not very well curdled; but have quit that some time ago.—Reader, Oroville.

[Your chickens have rheumatism. The feed is too much one-sided. If you could give them plenty of green feed and less corn it would be better. If the sleeping quarters are damp, remove the hens to dry quarters. Unless you know the right percentage of blood meal to feed, that may be the one thing that is causing the trouble. Beef scrap is a safer article for the average person than blood meal, which is usually very high in protein. I would advise you to discontinue the blood meal, and give all the sour milk you can; never mind about the curdling. Give the chickens fifteen grains of iodide of potassium in one quart of drinking water. This is all right for both young and old. Give it in small clean dishes so that it will not be wasted. You can give this for a week; and if you have plenty of green feed, or sour milk, your chickens will soon be all right. Rheumatism is seldom fatal.]

POULTRY NOTES.

Walter Smith of Corning, is selling day-old chicks and pullets to Santa Rosa and Redlands.

A fair-sized flock of purebred Silver Campines and Buttercups is owned by Mrs. Gardener of Concord.

A. W. Foster of Hopland is cutting green alfalfa for 9,000 chickens with a new Acme cutter. He says it works fine.

Poultry producers of the State are considering organization under the plan of the Associated Raisin Co., with modifications as suggested by State Market Director Weinstock and the Poultry Producers' Promotion Committee.

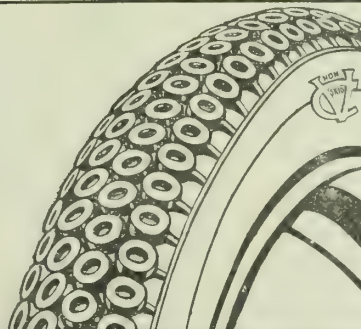
The San Diego County Poultry Producers' Ass'n recently organized and incorporated to buy feeds by the carload. They claim to have

saved \$500 on the first two carloads (bran and fish meal). O. J. Bradshaw of Pepper Drive is president and B. H. Howard, Santee, Sec.-Treas.

The Tulare Co-operative Poultry Ass'n shipped \$5,650 worth of eggs and poultry in May, 1916. This is almost 100 per cent increase since May, 1915.

A correspondence course announced by the University of California, Division of Agricultural Education of the College of Agriculture, should interest poultry keepers: Indian corn has not been very extensively grown in California, yet there are many sections where the crop would yield remarkably well. Professor B. A. Madson has prepared the course on Corn Culture, keeping in mind California conditions, and he clearly explains the proper conditions for growing this valuable grain and forage crop. Among the topics discussed are: soils, seed selection, planting, cultivation, harvesting, and the varieties best suited to different sections of California.

For the immunization of fowls against chicken pox a method has recently been developed at the University Farm Experiment station that seems successful in every particular. The University of California manufactures this vaccine and sells it at cost to bona fide poultrymen. The present cost is less than a cent per dose (1 c. c.) while the syringes sell at \$3.00. The vaccine is furnished in two lots, 5 days apart, by the Veterinary division of the University at Berkeley.



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VACATION LAND

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A very interesting description of this territory is found in the booklet—Vacation—1916, free copies of which may be obtained at 874 Market Street, San Francisco, or on application to J. J. Geary, G. P. A., 808 Phelan Bldg., San Francisco.

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The Home Circle Page of the Pacific Rural Press

MRS. BEST'S LETTER.

My dear Friends:

All of the Rural Press office force are given a two weeks' vacation each year and I am taking the advice I offered you and am spending mine in the southern end of the State. The climatic conditions here in Los Angeles are very different from the bay section—much less fog and more heat. Naturally that calls for a different type of dressing on the street—instead of seeing practically everyone in tailor-made suits as you see in San Francisco, you see white dresses with sport coats, silk dresses with no wraps at all or suits of white cloth or linen. The hats are much more summery looking, too; of necessity they must be or they would look out of place with the dresses worn.

The bathing resorts of our state are very largely located here, extending along the coast from Santa Monica south. They differ in type, some of them having many amusements, dancing and band concerts, which appeal to the young people while others are quite little places where the mothers of small children can go and take their babies and live out on the sand all day long in perfect freedom from dress and distractions. These beach towns would appeal to those of you who live in the warm interior valley, for the bathing is invigorating and the ocean breeze is refreshing.

In the opposite direction from Los Angeles are many foothill towns, all of them interesting in their own way—Redlands with Smiley Heights and Riverside with Rubidoux Mt. and the wonderful Mission Inn; Pomona with Ganesha Park and Ontario with its wonderful avenue all have a charm that appeals to a dweller in another part of the state.

Most of these towns and many others are situated in the citrus belt and are surrounded by orange and lemon groves. There are perfectly wonderful automobile roads leading out to all surrounding districts and if you are not fortunate in having friends who will take you, you need not miss seeing the sights, for Southern California is a network of electric roads that make sight seeing a pleasure.

San Diego, even without the added attraction of a Fair, is a beautiful city that you will enjoy visiting and the Fair is another point of interest.

Perhaps the thing I enjoy most in this "Sunny Southland" is riding through the orange grove districts.

Nowhere else in the State have I seen miles of orchards so beautifully kept, the roads bordered with trees—many times palms—and flowers everywhere. I could not help but wonder if the fabulous prices the orange groves sell for were not due largely to the beauty that appeals to the eye.

Rosabella Best.

PEDESTAL LAMPS.

The really new thing in lamps are the pedestal lamps that are at least five feet high with large silk shade, really quite similar in style to the piano lamp of twenty-five years ago.

AN OLD FRIEND IN NEW GUISE.

Force hot boiled Irish potatoes through a potato ricer; there should be three and one-half cups. Season with three tablespoons butter, one and one-half teaspoons salt, and one-fourth teaspoon pepper. Add two-thirds cup hot milk and beat vigorously. Turn into buttered dish, pour over one-half cup heavy cream and sprinkle with three-fourths cup coarse stale bread crumbs. Bake until crumbs are brown.

BABY BASKETS.

The use of wicker clothes baskets for the bed for a small baby is quite general. They can be covered with Swiss or scrim over a color, and with a pillow in the bottom make a very good bed, with the added advantage of being easily moved from room to room. But their use need not be confined to the house. The space in the automobile between the seats will hold the basket nicely and his lordship can ride comfortably without having to be held.

MIDDY BLOUSES.

All ages seem devoted to the middy blouse this summer. The little people wear them with pleated skirts in white or stripes and they are developed for women in white, stripes and pongee silk. A very attractive house dress might be made of chambray or gingham, with gored skirt and belted middy.

WALNUTS IN SALAD.

Salads of many kinds are greatly improved by adding a few English walnuts. Mix equal parts of English walnut meats cut into small pieces with crisp celery cut into dice and moisten thoroughly with salad dressing to make a particularly delicious salad. Chopped walnuts are also a delightful addition to chicken, lobster, shrimp and Waldorf salad. As a pleasing change add olives and walnuts chopped fine to potato salad.

COLORED LINENS.

Tablecloths with colored borders are being shown in one of the good shops. These are in yellow and blue mostly and bath towels have taken on a note of color. Some of them are cross barred in stripes of different colors and are very effective.

TEA WAGONS.

A small table with wheels and handle to push, popularly called tea-wagons, can be of wonderful help in setting and cleaning a table. You find them in the stores of mahogany or wicker, but they could do just as effective work if they were made at home from a small table with casters set in the legs.

DO YOU KNOW THAT

Light promotes cleanliness?

A clean mouth is essential to good health?

Headache is Nature's warning that the human machine is running badly?

Bullets may kill thousands—flies tens of thousands?

SCHOOL NOTES.

There are 21,200 rural schools in the United States.

California stands third in attendance in the twenty largest universities in the United States. Chicago comes off with the first honors and Columbia University second.

All honor to the country school teachers for they certainly send forth their pupils with a clear understanding of what they have been over in their school work and a thoroughness that calls forth most favorable comments from the teachers of any new school, be it city or town, where they may be enrolled. A city teacher said to me not long ago, "I never worry about children from the rural schools, in fact, I am glad to have them, for, as a rule, their work is very thorough and they seem to have such a clear understanding in regard to their school work. I suppose the pure fresh air and the lack of a hundred and one things that are going on all the time to take the minds of the city pupils from their work is responsible for it in a measure.

HOUSEHOLD HINTS.

When jam has become sugary and hard, place it in the oven until the sugar melts. Take out and put to cool. It will taste as good as freshly made jams.

A saturated solution of epsom salts is a good remedy for burns. Apply as soon as possible, and keep wet continually until the pain ceases.

Your crochet work can be laid down or handled without any danger of raveling if you will put a small safety pin in the last stitch.

The housekeeper will find pure baking soda a great help in the household. Used with cream of tartar, it makes an excellent baking powder. A pinch of soda added to boiling green vegetables improves their flavor and helps to preserve their green color. A little soda added to beans when cooking makes them soft and sweet. A pinch of bicarbonate of soda put in the milk that is slightly soured will restore its sweetness. Tinware boiled with some baking soda will assume a fine brilliancy and will not tarnish so easily.

I often wonder why we don't make greater use of the nickel-plated towel racks that can be bought for fifteen cents, in our kitchens. They look neat and are so convenient for towels and to hang other things on as well.

TOWELING.

Japanese toweling comes in many patterns in blue and white and is very effective for use in a bedroom for dresser scarfs and side draperies at the windows. It washes beautifully and is very inexpensive.

FLORAL DEPARTMENT.

[By Geo. N. Tyler.]

Cannas.—Would you kindly give complete instructions about the raising of cannas. They are my most satisfactory plant; yet I know very little about them, and am at times in difficulty. Frequently the edges of the leaves turn very rusty and I do not know the reason, nor how to enrich the soil. I do give them a great deal of water.

Cannas are very gross feeders and require very rich soil. In preparing a bed for them, I would use some bone meal, one pound to the square yard, and a heavy coating of half-rotted manure. Spade the ground very deep, and work the manure and bone meal in thoroughly. The manure is for immediate use, and the bone meal is more lasting. Cannas like a sunny location, and an abundance of water at the root; but if you wet the foliage on a hot day, the water settles to the edges of the leaves, and the sun scalds them. This is probably what made the edges of the leaves turn brown.

The young divisions of the plants should be set out in early spring; or you can grow most of the varieties true from seed. The seed should be frosted or scalded; both treatments have practically the same effect.

I have had the best success by scalding. Drop the seeds in boiling water, and you will hear them pop. Use the seeds for planting that have popped. When you do it, you will understand what I mean. Another way is to cut through the outer shell with a sharp knife—but it is a much slower method.

Plant the seeds in rich sandy soil about one inch deep. After they are up large enough to handle, plant in the prepared blooming beds. Canna beds should be removed each year, the old plants dug up, the beds thoroughly enriched, and the small divisions replanted.

At this time of year if the beds were not enriched in the spring, I would scratch in around the plants, bone meal one-half pound to the square yard, and then mulch them with two or three inches of half-rotted manure, manure that most of the heat has gone out of. Water through this manure. You can also apply a light dressing of chicken droppings on top of the mulch after a week or two. Do not use much, as it is very caustic and might burn the roots.

PICKLED WALNUTS.

[Tested recipe secured by Miss Lillian D. Clark, University of California.]

Gather them when young enough to be pierced with a pin. Put them in strong brine, and leave them seven days, changing it every other day; then take them out, wipe them dry, and pierce them with a large needle in several places. Cover them for eight hours or over night with cold water, then drain and put in jars.

Take enough cider vinegar to cover and to each gallon allow 12 beads of mace, 1 cup sugar, 36 black pepper corns, 36 cloves, and 1 tablespoon allspice. Boil 5 minutes and pour hot on the nuts. Repeat twice, three days apart and tie up.

TOMMY'S ARITHMETIC.

Hippity-hop, hippity-hop,
Down the street to the candy shop,
Striped sticks in a big glass jar,
Tommy Taylor's favorite are.
"Six for five," said the candy man.
Tommy to subtract began:
"Six for five, and five for four,
Four for three," he counted o'er.
"Three for two, and two for one,
One for nothing"—the sum was done.
"Please, Mr. Candy-man," said he,
"You may give the 'one for nothing'
to me!"

And so surprised was the candy man,
He gave it to Tommy, who turned
and ran;
But should you try this trick, my
dear—
It wouldn't work out that way, I
fear.
—Dora Marchant Conger, in
Little Folks.

JUNIOR'S REVOLT.
(A true story.)
[By Mary Wells.]

Junior was ready for bed. It had
been a busy day. He had helped
mother water the flowers, trudging
up and down the garden paths with
his little red sprinkling pot. He had
ridden to the corner with the ice-
man, perched high on the seat be-
hind the big bay horses. He had
helped little Mary next door make
mud pies under the lilac-bush in the
garden. He had run races with old
Bruno until both he and the dog
were tired. Yes, Junior was quite
ready for bed.

The windows were open, so that a
little breeze stirred the white cur-
tains. The smell of the lilacs drifted
in. A robin chirped sleepily from
the elm-tree outside. Junior's clothes
were spread neatly on a chair be-
side his bed, his little sandals stand-
ing at attention beside the chair.
He had said his "Now I lay me,"
and with a sleepy yawn had turned
toward the little white bed, the side
of which was invitingly open, when
his mother spoke. "Run across to
the bathroom, Sonnie-boy, and wash
your hands. They're all sticky."

Junior looked at the dirty little
hands, then without a word kept on
his way to the bed.

"Didn't you hear, Junior?" His
mother's tone was surprised. "Go
wash your hands."

Already one knee was on the side
of the bed. Junior shook his head
so hard that every little curl bobbed
separately, then he opened his lips.
"No," he said firmly.

Just at this moment a step re-
sounded on the stairs, and his father
entered the room,—big, merry
father. He was quick to see that
something was wrong. "What's the
matter?" he asked. He looked from
Junior to his mother.

"Junior has refused to obey me,
Franklin. He will not wash his
hands." The tone was sad.

The father looked at his small son
gravely. "In this house, Junior, peo-
ple have to mind your mother.
What she says goes. People who
don't do as she says don't belong
here."

Junior hesitated. Slowly he drew
down his knee from the little white
bed; slowly he turned toward the
door. His mother looked toward her
husband with an expression of relief
in her pretty gray eyes. But Junior
did not go across the hall into the
bath-room. Instead, he walked
steadily down the stairs, through the
big hall below, down the piazza steps,
and out into the night.

The father looked at the mother.
"By Jove!" he ejaculated. "By
Jove!"

Out in the garden it was dark.
Shadows were everywhere, queer,
moving shadows, shadows where all
sorts of strange wild beasts might be
lurking, ready to spring out upon
little boys,—little boys who would
not wash their hands. Junior
trudged on. The gravel in the broad
path hurt his feet, and once he stum-
bled over a big stick. A lump came
into his throat. One dirty little fist
went to his eyes.

All of a sudden he heard stealthy,
creeping footsteps behind him. His
heart beat fast with terror. Then a
cold damp nose thrust itself into his
hand. Trembling with fright, Junior
looked down; then he gave a little
cry of joy. It was Bruno, his dear
old playmate Bruno.

But what was Bruno doing?
Steadily he tugged and pushed until
he had pulled Junior around so that
he faced the piazza steps. Then,
Bruno still guiding, the two went up
the garden path, Junior clinging with
both hands to the old dog's shaggy
neck.

At the foot of the steps the mother
was waiting with outstretched arms,
and Junior walked straight into
them. Two sticky little hands clasped
her close.

"I will wash my hands, mother,"
he cried. "I will."

The father patted old Bruno's
head. "Good old fellow!" he said;
then he put his arms around Junior
and his mother and the three went
up the piazza steps, while Bruno,
wagging his tail, trotted slowly off
to his kennel behind the house.

Half an hour later, in his white
bed, Junior was sleeping peacefully,
a smile on his face. In his kennel,
Bruno lay, his head on his out-
stretched paws. Now and then he
opened his eyes and blinked lazily
at the moon over the old elm. The
revolt was over.

INDIVIDUAL MEAT PIES.

In your Home Circle Page May 27,
was an article, "Another Pork Pie
Recipe," by An English Subscriber.
It should be good and those who try
it out will be more than pleased
with it.

I would like to ask the same lady
if she could give a recipe for making
meat puddings, individual ones that
are enough for one person, the same
that are sold in the cook shops in
the cities in England. A pudding is
made in a basin for a family, and
wrapped in a cloth and tied, then
placed in saucepan and boiled. Could
puddings be made in very small
basins enough for one person, and
steamed or cooked in some receptacle
that would do away with the cloth
wrapping? I have seen plenty of
them served in the cook shops, but
do not know how they were cooked.

A meat pudding properly made
and thoroughly cooked does not spoil
if hubby or the boys are detained on
the road; for the longer it cooks,
the better it is. The meat becomes
more tender and the juice is retained
in the pudding. It is another way
of utilizing some of the inferior cuts
of meat, such as beef chucks. When
a person has been working hard,
there is nothing more savory or sat-
isfactory, and should certainly be
listed among the good things to eat.

Alameda. F. Miller.



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paid for \$1.

HAROLD SOMERS, 150 DeKalb Ave., Brooklyn, N. Y.

San Francisco, July 5, 1916.

WHEAT.

New crop California club and Sonora wheat are offered in limited quantity on the spot at the figures quoted, with trading still rather slow. Northern grain is scarce here, as the waterfront strike holds up shipments.

Sonora Wheat\$1.67 1/2 @ 1.70
Northern Club\$1.70 @ 1.72 1/2
Calif. Club, ctl 1.67 1/2 @ 1.70
Northern Bluestem. 1.82 1/2 @ 1.85
Northern Red 1.80 @ 1.90

BARLEY.

There was no trading over the week end, but the spot market shows a little more strength, as a great deal of shipping and choice feed are going East by rail, some of it for export, and the decline of shipping rates gives a better outlook for export business.

Shipping, ctl.\$1.37 1/2 @ 1.40
Choice Feed, ctl 1.32 1/2 @ 1.35

OATS.

New oats are still in rather light supply, but there is not enough demand to cause any great firmness in the market. Some re-cleaned red oats, suitable for seed, are held at an advance over ordinary offerings.

Red Feed\$1.40 @ 1.45
White 1.50 @ 1.60

CORN.

There is very little feature to the local corn market, as trading in Eastern is limited, and no great amount of Egyptian, etc., is passing through this market at present. Values are unchanged.

Eastern Yellow, ctl..\$1.85 @ 1.87 1/2
Milo Maize 1.40 @ 1.45
Egyptian 1.45 @ 1.50

BEANS.

The only change in values this week is a rather sharp advance in blackeyes, which did not advance last week, but have gone up in sympathy with the general market. Everything on the list remains very firm, as the recent jump and the evident shortage have caused buyers generally to look out for their requirements for the rest of the season, and there is quite a strong demand. Sales, however, are falling off somewhat, as stocks are getting down to very narrow limits.

(On wharf, San Francisco.)

Bayos, per ctl.\$6.25 @ 6.50
Blackeyes 3.50 @ 3.75
Cranberry Beans 6.00 @ 6.20
Horse Beans 3.25 @ 3.40
Small Whites (south)...9.75 @ 11.00
Large Whites 9.25 @ 9.50
Pinks 6.96 @ 7.25
Limas (south) 6.50 @ 6.75
Red Kidney 8.00 @
Mexican Reds 5.50 @ 5.60
Tepary Beans 4.50 @ .475

HAY.

Arrivals continue moderate, owing partly to lack of local demand and partly to shortage of cars, a good deal of the hay coming from Bay and river points by boat. Business is decidedly dull nearly everywhere at present; locally, consuming demand is less than at times in the past, and practically all export and coastwise shipping is stopped by the waterfront strike; and dealers, in an evident attempt to bear the market, say that the consumers are holding off in expectation of lower prices. The bearish tactics are also noticed in the country, as no buyers have yet appeared in several districts. This, also, may be partly due to the difficulty of shipping to other markets. Notwithstanding this dullness, the new hay is very firmly held in most parts of the country, where the shortage of the crop is well realized, and in many places good hay is held at much higher prices than those here quoted. Several prominent districts, such as Sonoma county and the country between Livermore and Tracy, have a very short crop; while in San Joaquin county generally the crop is poor. The feed everywhere is extremely short, as a result of which most stock and dairy districts will have to buy a great deal of feed. Napa and Humboldt counties are already in the market. Alfalfa finds a

Special Deciduous Market Report.

By J. L. Nagle.

Sacramento, July 3, 1916.

The Eastern movement of Bartlett Pears is at its height and the fruit is of excellent quality and bringing good prices. The market should remain steady; as the pear crop is not over 70 per cent and only about half of it will be shipped East, the balance having been sold to the canners at \$45 to \$52.50 a ton.

Sacramento river Bartletts will be pretty well cleaned up by the 15th of the month and Placer County, with the exception of Colfax, will probably continue to ship until July 20 or 25. The mountain Bartlett crop is light and of good quality and as the Washington and Oregon pear crops are also light, late California Bartletts should bring fancy prices.

Thompson Seedless and Malaga grapes are moving from Imperial Valley. The quality is only fair, berries being not up to the usual size.

The following prices have ruled for the week:

ready market at high prices, and grain hay is expected to be unusually firm as the season advances.
Wheat, No. 1\$12.00 @ 13.50
No. 2 9.00 @ 11.50
Tame Oats 11.50 @ 14.00
Wild Oats 10.50 @ 12.50
Barley 10.50 @ 12.50
Alfalfa 10.00 @ 13.50
Stock Hay 7.50 @ 9.00
Straw, per bale25 @ .40
Nicholls Loomis Company quote hay to producers at the following prices: according to quality, f. o. b. Los Angeles, June 29.
Barley Hay..\$10 to \$14.00 per ton
Wheat 10 to 14.00 per ton
Tame oat... 12 to 16.00 per ton
North'n Alf... 11 to 13.00 per ton
Local 12 to 15.00 per ton
Stock Hay ... 6 to 9.00 per ton
Straw 5.00 per ton

Prices to consumers \$1 to \$3 per ton higher according to quantity ordered, delivery, etc.

FEEDSTUFFS.

No beet pulp is offered at present, and alfalfa molasses meal is out of the market, as alcohol distillers are taking all the molasses. Some extra fine middlings have come in and are held at an advance, and rolled barley also is a little firmer.

(Wholesale prices, per ton, carload lots, San Francisco.)

Beet pulp, per tonNominal
Alfalfa Meal, per ton. 17.50 @ 20.00
Bran, per ton 28.00 @ 29.00
Oil Cake Nominal
Cocoanut Cake or Meal 23.00 @ 25.00
Cracked Corn 40.50 @ 41.50
Middlings 35.00 @ 38.00
Rolled barley 29.00 @ 30.00
Tankage 45.00
Rolled Oats 29.00 @ 30.00

VEGETABLES.

The general tendency of prices is still downward, with heavy arrivals in most lines. The canners have stopped buying asparagus, and without this support prices have dropped. Cucumbers and summer squash are now coming in large lugs, so that a seeming advance in the figures is

New York. Tragedy plums averaged \$1.30; Santa Rosa, \$1.27; Formosa, \$1.25; Climax, \$1.12; Burbank, \$1; Simoni, \$1.04; Royal cots, \$1.36; Triumph peaches, 82c.; Hale, 81c.; Bartlett pears bxs., \$4; Bartlett, H. B., \$2; Wilder, \$1.90; Lawson, \$1.86.

Chicago. Bartlett pears averaged \$3.27; Hale peaches, 91c.; Triumph, 90c.; St. John, \$1.26; Tragedy plums, \$1.50; Climax, \$1.17; Burbank, \$1.15; Wickson, \$1.10; Santa Rosa, \$1.38; Thompson Seedless grapes, \$2.39; Royal cots, \$1.59.

Boston. Tragedy plums, \$1.67; Burbank, \$1.30; Santa Rosa, \$1.42; Climax, \$1.37; Botan, \$1.25; Formosa, \$1.47; Triumph peaches, 95c.; Hale, \$1; St. John, \$1.15; Bartlett pears, H. B., \$2.55; Lawson, \$1.65; Royal cots, \$1.10; Thompson Seedless grapes, \$3.10.

[Total shipment to July 3, 2189 1/2 cars; to July 3, 1915, 1495 1/2 cars.]

really a decline. String beans are much lower, while peas are fairly firm. Tomatoes have been weak, with large supplies from Merced, but are now a little steadier.

Cucumbers, lugs75 @ 1.25
String beans, lb.3 @ .5c
Summer Squash, lugs.. 1.00 @ 1.25
Peppers, bell, lb. 6 @ .8c
Asparagus, box 1.00 @ 1.50
Lettuce, small crate ...50 @ 65 c
Eggplant, lb. 5 @ 7 c
Peas, lb. 2 1/2 @ 4 c
Tomatoes, crate50 @ .75
Green Corn, sack 1.25 @ 2.50
Okra, lb. 5 @ 7 c

POTATOES AND ONIONS.

No further change is noted this week. The wide range on potatoes continues, southern stock grown on high ground being held around \$2, while the River offerings are rather poor. With light supplies, however, everything is rather firm. Onions are coming in more freely, and a sharp drop is expected.

New Potatoes, ctl.\$1.45 @ 2.25
Onions, red 2.25 @ 2.50
Yellow 2.25 @ 2.50
Garlic, new crop, per lb .. 6 @ 7c

POULTRY.

The egg ranches in the northern part of the state are shipping in their young stock in great quantities, and with little extra demand here prices are still lower on broilers and fryers, as well as on hens and roosters, the former being in fair supply from Eastern points as well as local. Belgian hares also are easy.

Broilers, 18 lbs. to doz. and less, lb19 @ 20c
do, over 18 lbs, to doz...20 @ 21c
Fryers20 @ 22c
Hens, extra, per lb.....18 @ 19c
Small15 @ 16c
Smooth Young Roosters, per lb...23 @ 25c
Squabs, per doz. 2.00 @ 3.50
Geese, per pair 2.25 @ 3.00
Ducks15 @ 16c
Old14 @ 15c
Belgian Hares 7 @ 9c

BUTTER.

The market shows the usual slight upward tendency for this season, a little extra demand for the holiday causing a 1/2 cent advance. There is little feature to the market, however, no outside demand being noted at present.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra .....24 1/2	24 1/2	25	—	—	—	25
Prime Firsts ....24	24	24	—	—	—	24
Firsts .....24	24	24	—	—	—	24

EGGS.

Extras have gone back to 25c. on a little better demand, and local supplies appear to be hardly as liberal as for some time past, though shipments are coming in freely, and include some Eastern eggs.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras .....24	25	25	—	—	—	25
Sel. Pullets ....22	22 1/2	22 1/2	—	—	—	22 1/2

CHEESE.

Offerings are ample in all lines, and fancy flats and Monterey cheese are a little easier, Y. A.'s remaining as before.

Y. A.'s fancy16 c
Fancy Calif. Fats, per lb.....14 1/2 c
Monterey Cheese15 @ 17 c
LOS ANGELES DAIRY PRICES.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter .....26	26	26	26	—	—	—
Eggs .....24	24	24	24	—	—	—

DECIDUOUS FRUITS.

Arrivals before the holiday were rather light, and with some extra buying the market was quite strong. While more stock is coming in now, some lines still show some firmness. Currants and blackberries, and the best lots of strawberries, are somewhat higher, though a good deal of ripe stock has had to be sacrificed. New apples are arriving more freely and in greater variety, and have found a very fair demand. A good many crabapples are also appearing. Choice wrapped Bartlett pears sell readily as high as \$2 per box, and some other varieties bring \$1.50. Attractive apricots are in light supply and firm at an advance, and peaches also show some firmness, though much of the stock is moving in large packages. Figs also are higher, with lighter offerings of the black variety. Nectarines are beginning to come in. Plums and prunes of various kinds are offered freely at lower prices. Watermelons are easing off a little, but cantaloupes have advanced sharply, with light arrivals. A few Fontainebleau grapes are offered.

Currants, chest\$3.50 @ 4.50
Loganberries, chest 2.00 @ 3.00
Blackberries, chest 4.00 @ 5.00
Raspberries, chest 4.00 @ 5.00
Strawberries, chest 3.50 @ 7.00
Apples, Gravenstein 1.00 @ 1.35
Astrachan75 @ 1.10
Crabapples65 @ .90c
Pears, Bartlett, bx, No.1. 1.75 @ 2.00
Other varieties..... .90 @ 1.50
Apricots, crate50 @ 1.00
do lugs1.25 @ 1.50
Peaches, lugs 1.25 @ 1.50
Peaches, basket50 @ 75c
Figs, black, box60 @ 75c
White90 @ 1.00
Plums, crate65 @ 1.25
lugs75 @ 1.00
Nectarines, crate 1.00 @ 1.25
Cantaloupes, standard crate 2.00 @ 2.50
Watermelon, lb. 1 1/4 @ 1 1/2
Grapes, Thompson, crate 1.00 @ 1.35
Fontainebleau75 @ 1.00

DRIED FRUITS.

The top figure on new crop prunes has been marked down a little, as most of the local packers are unwilling to pay over 5 1/2 c., though apparently they are getting little fruit at that figure, and there are probably some sales being made at 6c. Aside from this there has been no change in the local quotations, and the market as a whole remains decidedly firm, with apricots and peaches in too much demand for canning or Easter shipment to warrant any concession on the dried fruit, even though the consuming demand may be curtailed. There is little doing in apples and pears at present, but the old stock is pretty well out of the way, and the decline is expected. Any figs available are in great demand, as the country is depending on California

Special Livestock Market Report.

Cattle. The local situation has not improved in retail consumption; and a consequent reaction is still felt in buying circles. The country demand for dressed meat is also depressingly short, country butchers finding it easy to pick up plenty of cattle cheap and consequently doing their own killing. Some few feeders are being bought; but so far, range conditions have not warranted any large offerings. The Portland market has been somewhat improved, values running fully 25 cents higher than the week previous.

Sheep. Plenty of sheep are arriving to take care of the none too brisk trade, a few Nevada lambs finding their way to market occasionally.

Later in the month there will be plenty of lambs arriving from Red Bluff and other Tehama county points. Values remain as quoted last week.

Hogs. Market here unchanged except a slight falling off in receipts. No heavy runs are expected now till October 1; and packers are continuing to empty their cellars. Portland reports a "snappy" market, closing strong last week.

Wool. Prices stand as for some time past, being quite steadily held. Local dealers say the spring clips are pretty well cleaned up, and there is little interest in the market until the fall shearing starts, which will be in a few weeks in some sections.

or its entire supply this year, and normal requirements are about three times as large as the crop. New seedless raisin prices should be out by the time this appears. The New York Journal of Commerce says:

"Thus far it seems to be a standoff between the packers, growers and jobbers in all lines of dried fruit, with if anything the advantage slightly in favor of the growers. California prunes are very firm and in some instances a trifle higher in price. Buyers have not yet interested themselves in futures to the extent of anticipating their requirements, but, according to the belief among members of the trade here, the time is not far distant when they will have to place their orders. The chief opposition to prices comes from jobbers who fear that the retail trade will be seriously curtailed by high prices."

Prunes, old crop 5 1/2 @ 6 c
Prunots, per lb., 1916 12 1/2 @ 13 1/2 c
Plums, white, 1916 6 1/2 @ 6 3/4 c
Black, 1916 5 @ 5 1/2 c
Alimony, 1916 9 @ 10 c
Prunes, 4-size basis, 1915 5 c
1916 5 @ 5 1/2 c
Peaches, old 5 @ 5 1/2 c
1916 6 c
Pears 5 @ 6 1/2 c

(Associated Raisin Co. Prices.)
Fancy Seeded, 16 oz. 7 c
Choice Seeded, 16 oz. 6 3/4 c
London Layers, 3-crown,
20-lb. box, 1916 \$1.30
Imperial Clusters, 6-crown,
20-lb. box, 1916 2.75
Bulk, layers, 50-lb. box, 1916 2.75

CITRUS FRUITS.
Valencias in New York with 19 cars sold July 3 were slightly higher than last week, averaging \$2.80 to \$4.75; grapefruit \$2.25 to \$3.40; lemons \$2.40 to \$3.75. Boston took even cars Valencias averaging \$2.60 to \$3.40; grapefruit \$3.85; lemons 3.20 to \$3.30. St. Louis handled even cars Valencias averaging \$2.80 to \$3.75; lemons \$3.40 to \$4.90.

Lemons and grapefruit are moving well in the San Francisco market, with oranges quiet as usual at this season. The latter have been marked up a little, however, in sympathy with other markets; and the inside figures on lemons and grapefruit also are somewhat higher.

Oranges, Valencias \$3.00 @ 3.50
Grapefruit 2.00 @ 3.00
Lemons, box 2.75 @ 4.50
Lemonettes, box 1.50 @ 2.00

HONEY.

There is no quotable change in values as yet, as shipments of the new crop are coming forward very slowly, and there is a good demand from the trade. Fancy extracted is very scarce, and the quotation is firmly held; and water white comb also is quite strong.

Water White, comb 13 @ 15 c
Amber 10 @ 12 c
Water White, extracted 9 c
Light Amber, new 4 @ 6 c
Dark 4 @ 4 1/2 c

NUTS.

During the week the first prices on new crop California almonds were quoted to the eastern trade. One party offered Nonpareils 18 1/2 c.; I X L's, 17c.; Ne Plus, 16c.; Drakes, 14 1/2 c. Immediately following this quotation, other shippers quoted Nonpareils, 18c.; I X L's, 16 1/2 c.; Ne Plus 15 1/2 c.; Drakes, 14c. Still another party quotes at slightly under either of the above.

It is generally understood that these prices are 'feelers,' as the trade seem to be waiting for the California Almond Growers Exchange to determine their prices, which according to the Exchange, will not be done until market conditions warrant, and possibly as late as September.

HORSES.

A few rather attractive lots of hunks and light drafters have ap-

PEARLED IN THE LOCAL MARKET WITHIN the past week, and received more attention than for some time past, though the market cannot be said to show any great animation, as the large local users are only moderately interested at this season. The demand for cavalry and artillery stock is of course strong, but most of the buying is done in the country. The general range of values shows no quotable change.

(Approximate values in San Francisco, based on auction sales.)
Drafters, 1700 lbs and up \$ 250
Drafters, 1550 to 1650 .. 150 @ 200
Chunks, 1350 to 1500 lbs 150 @ 175
Wagon horses, 1050 to 1350 lbs 110 @ 150
Green Mountain range horses, 950 to 1200 lbs 20 @ 75
Farm workers 50 @ 100

LIVE STOCK.

(Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.)
Steers, No 1 6 3/4 @ 7 c
No. 2 6 1/2 @ 6 3/4 c
Cows and Heifers 5 3/4 @ 6 c
No. 2 4 1/2 @ 5 c
Bulls and Stags 4 @ 4 1/2 c
Calves, light 7 1/2 @ 8 c
Medium 7 @ 7 1/2 c
Heavy 6 @ 6 1/2 c
Hogs, grain-fed:
100 to 150 lbs 7 3/4 c
150 to 250 lbs 8 1/4 @ 8 1/2 c
250 to 325 lbs 7 3/4 c
Prime Wethers 7 @ 7 1/2 c
Spring Lambs, f. o. b. country points \$5.00 @ 5.50

WOOL.

(Prices paid in the country.)
Red Bluff, year's 25 @ 27c
Sacramento Valley, year's .. 19 @ 25c
Mendocino, year's 31 @ 32c
Mendocino, 7 months' 26 @ 27c
Southern, year's 18 @ 21c
Southern, 7 months' 15 @ 18c
Imperial Valley, year's 17 @ 19c
Imperial Valley, 7 mos. 14 @ 15c
Nevada 21 @ 23c

Dr. B. J. Cady recently advised Alameda county hog raisers not to depend on cholera serum entirely, but to clean up and keep clean, using disinfectants.

Almonds

Prices to the eastern trade on new crop California almonds are now being quoted by various speculative interests. One shipper came out with a price which was promptly cut by another, and as we write, we hear of a third price, somewhat different than the others.

It is the almonds of the growers who are not members of the Association that are being used to create this confusion and price-cutting—all of which has a tendency to lower the price level for all California almonds.

California Almond Growers' Exchange
311 California St., San Francisco.

Publisher's Department

"I find the edition of 'Second Thousand Answered Questions' simply crammed full of such interesting matter that no person interested in agriculture should be without this. Frederick G. Duncan, Dunedin, New Zealand." Mr. Duncan has been a subscriber to the Pacific Rural Press for a number of years. We have a special offer on this valuable book to subscribers only. Ask for it.

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"Text-Book of Land Drainage" by Joseph A. Jeffery, has just been issued by The Macmillan Company, 66 Fifth Avenue, New York. Goes very thoroughly into matter of low yields of farm crops, too frequently to be traced to either over-drainage or the extended presence, at some time during each year, of excessive amounts of water, with the resultant sickly full stands, half stands, no stands, and drowned areas. The author gives a treatise on soils and comprehensive systems of proper drainage and maintains that if all lands on the farms were properly drained and given a chance to do their best, total yields and averages would be enormously augmented. Cloth bound, 256 pages, 95 illustrations. Price \$1.25.

"Fertilizers" by the late Edward B. Voorhees is another work just issued by The Macmillan Company, 66 Fifth Ave., New York. It explains the source, character and composition of natural, home-made and manufactured fertilizers, and suggestions as to their use for different crops and conditions. Cloth bound, 365 pages. Illustrated. Price \$1.50.

A recipe for raviolis, regular Italian style, is asked by F. M. J., Galt.



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Canadian Government Agent

LIVESTOCK SALES ANNOUNCED.

August 2, Carruthers Farms, Berkshires, Mayfield.

September 2-9, Western American Berkshire Congress Sale, Berkshires, State Fair Grounds, Sacramento.

September 16, Stanislaus County Duroc Breeders' Ass'n, Duroc-Jerseys, Modesto.

September 19, Rhodes-McAllister, Holsteins, Rio Vista Holstein Farm, Riviera.

October 17-18, California Holstein Breeders' Ass'n, Holsteins, Holstein Consignment Sale, Hanford.

Classified Advertisements

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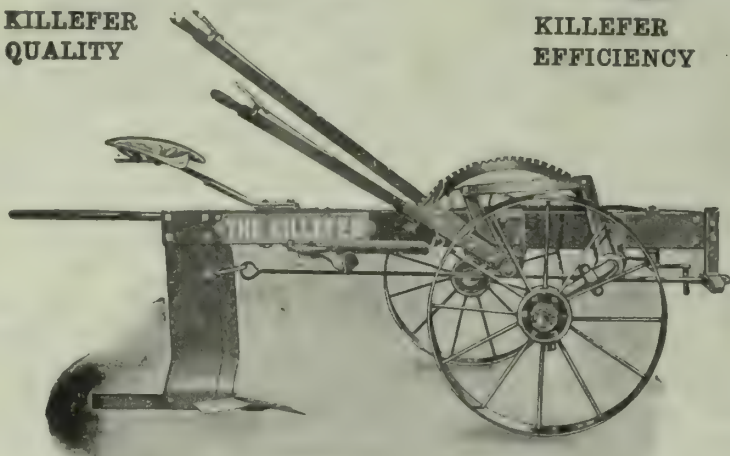
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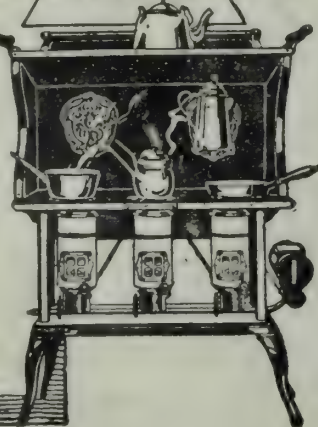
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SAN FRANCISCO

JULY 15, 1916.

LOS ANGELES

The Peach's "Poor Relation."

Tenth of a series of sketches in which the Editor presents suggestions drawn from long experience, of what Californians should think and do for the advancement of California Agriculture.

[Written for Pacific Rural Press.]

WHY does the nectarine, born into the house of the peach with all the ancestry, endowments and consanguineal rights to the family property and honors, stand abjectly beyond the castle walls, unbidden to the feast of commercial popularity and prosperity and denied all satisfaction of pomological prominence which belongs to the species *Prunus persica*?

How Insignificant is the Nectarine?—Pitifully so. The late Professor Budd, pomologist of Iowa, did much roaming in the Asiatic habitats of our popular fruits. At a fair in eastern Russia he "saw tons of nectarines, fresh and dried, brought in by merchants of central Asia as they had been doing for hundreds of years." But this did not impress him greatly for he says the nectarine is nowhere a commercial product away from east Europe and central Asia "except in California, where it is almost exclusively used for canning and drying." Prof. Budd's last visit to California was nearly thirty years ago, if we remember correctly, and he then imbibed nectarine prophecy, which was abundant in those days, and lived not to see the outcome of it.

It seems that the nectarine, which started its drive out of its Asiatic birthplace later than the peach but still early in the Christian era, did revel in some glory at Roman banquets; did subsequently inscribe its sweet name in the pomologies of Europe, gaining new varietal titles in the open air of Mediterranean countries and under glass in Great Britain, but in no place engrafted itself securely upon public favor. Centuries after it started on its disastrous expedition westward from Asia, it unfurled its colors for commercial recognition in California, and is here, apparently, undergoing the final tragedy of its pomological life, for it is less in public thought and confidence than it was decades ago. The records of the day clearly show the relative littleness of it in

California, in connection with the peach, our greatest deciduous fruit, viz.:

	Peach	Nectarine
Number of trees	10,445,744	63,700
Acreage	144,888	637
Dried fruit lbs.	60,400,000	600,000
Canned fruit, cases	3,509,780	1,000

And even these little figures of the nectarine represent it when it was greater, probably, than it now is.

Why Worry About the Nectarine?—Well: it pleases us to worry—for

several reasons. First, we write so much of great things in California that we are fashions to preach about something small. Second, the history of the nectarine in this State is interesting and should be recorded. Third, experience with the nectarine serves to emphasize lessons in commercial pomology not yet too well learned. Fourth, why has the nectarine failed? Fifth, is there any hope for the nectarine?

Before proceeding to consider these problems, it should be noted that botany says peach and nectarine are one and the same distinguishable only by the whiskers, which do not count botanically, because the nectarine sprouts from the peach, and vice versa, both by bud and seed variation, and both are therefore *Prunus persica*. But we have already shown that peach and nectarine, though both equal to the same thing, are not equal to each other. So far as the interchangeability of the two goes, Darwin cites in detail the conclusive data upon which it is established. But of course all this counts for nothing pomologically, for every fruit has all degrees of value and of worthlessness within its own species. Just what external and internal characteristics seem to be involved in



Prolificacy of the Nectarine in California.

the great commercial difference of the two may appear as we proceed.

How the Nectarine Came to California.—It does not appear that there were any nectarines in the old mission orchards. They were introduced by the American pioneers and the most popular budded varieties from the English garden walls and glass houses were secured. In the open air of California they demonstrated the superiority of their new environment. In 1851 there was an exhibit of California farm products held in

(Continued on page 52.)

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EDITORIALS

THE WEEK.

EARLY announcements of the California State Fair of 1916 are now appearing in our advertising columns, and all readers should give heed to them. The State Fair of last year was overshadowed by the Panama-Pacific Exposition; the State Fair this year should be illuminated by the memory, and ennobled by the experience, of that world-beating event. We all certainly learned last year that the place for a good thing is not under a bushel and the general credit for the State and the special credit for an individual, through the public display of good things, was indisputably demonstrated. The non-exhibiting public also received a profound impression of the joy and profit in good industrial displays, which should cause this generation to cherish during its whole life a keener interest in all events of similar form and purpose. The result should be the building up of California State Fairs to a higher standard of excellence and a broader industrial significance than they have had for the last few decades—in fact, they should have in the future greater quality than they have ever had in the past. For we have not only a better appreciation of the great service good fairs may render to education, to industry and to improved living in every line, but we have better live stock, better fruit products, better field crops in higher lines, and we have better systems of agricultural manufacture and commercial handling of them than we ever had before. The announcement of a California State Fair ought to be a heralding to the world of opportunity to see and understand how a State of the greatest diversity of farming interests does more great things than any other State can do. Therefore, we say to all: do something good for this year's State Fair, for the glory of the State and your own!

PREPAREDNESS FOR LEGISLATION.

ONE of our associate editors is making a special air-flight study of the operation of the new fruit standardization law and the other is submarining in the turgid waters of the new dairy legislation. Our columns are showing and will continue to show, how the purposes and motives of the last Legislature, which may be generally regarded as commendable, did not produce altogether commendable results; which are either inadequate or sure to work hardship in operation—so far as the Attorney-General will allow them to operate at all. Nothing but such inquiry as our associates are making, supplemented by such contribution of fact and opinion as our readers, who are most affected, are presenting for public consideration, can yield such better general understanding of the problems involved which is essential to valuable revision of the laws which the next Legislature must undertake. And that reminds us of our old and continual contention that the closer legislation comes to the regulation of industry, the more important

it becomes that the legislators who undertake to respond to the public demand for regulation should know more of the subject-matter, the practical working and the point of view of those whose industry is to be regulated. So long as legislators were only required to ring changes on the Ten Commandments, the situation was different. Any honest, patriotic citizen, who has been well preached-at from his youth up would perhaps do well enough to define a man's attitude toward his Maker and to order him by law not to kick his grandfather, nor to swear, steal, kill, lie, or wish to run away with his neighbor's domestic appliances. But modern legislation aims to go much farther, and properly disposing and arranging its technical details, is far beyond the competence of even the traditional Philadelphia lawyer. It is altogether beyond the power of the ordinarily well informed and intentioned citizen to enact laws of special technical and industrial bearings because he knows nothing of the materials and methods he is aiming to regulate aright. Such a citizen is, however, competent to arrive at good laws when he is enlightened by fellow-legislators who do know the facts and conditions of the industry involved, and as a rule he may be trusted to act honestly and wisely. For these reasons it seems to us most important that the farming industries of the State should give particular attention during the next few months to the nomination and election of a sufficient number of legislators who shall add to general requisites of probity, acumen and force of speech, actual knowledge, born of experience, of the materials, methods, requirements and environments which are involved in production of wholesome foods and fair trade in them. Unless farmers do this in the public interest, all laws about farming are apt to do more harm than good.

TRANQUILITY OF CALIFORNIA.

WITH our Mexican brethren smiling at us while they are shooting each other; with the Germans coming into our Atlantic ports with "submersible merchantmen," with which they can outwit the watchful cruisers of the Allies by diving under them; with the outside Allies pinching the inside Allies, from the flats of Flanders and the steppes of Russia to the pinnacles of the Alps, we in California are not sufficiently grateful for our tranquillity—with our three meat-meals during the day and chicken tamales at midnight. Californians away from California are, however, trying to tell us how grateful we ought to be, and their longings for their California homes should make glad those who are not required to leave them. Here is what Mrs. Inez Haynes Irwin writes from the war zone where she has been doing a writer's duty for several months:

"I cannot fully tell you what California looks like to me from this distance and through the blood-red cloud that hangs between us. California looks a land of hope and plenty—of joy and happiness and health—a land where the social struggle, tense as it is, is a struggle in which victory of the biggest and highest kind is always in sight. And as for the ranch—that is still my idea of Paradise; it always will be—up, up, close to the sky in the highest ether that earth has to offer, while below stretches downward beautiful hills reaching at last equally beautiful valleys. No wonder you people do such brave and beautiful and noble thinking in such a clear and clean and noble atmosphere."

The joy with which Californians who are called to the high places of the earth return to their homes is testimony which we all appreciate by the feeling of it. George T. Marye, recently U. S. Minister to Russia, said this: "I have seen considerable of the world in the past few months, but of all I have seen, I think that no spot is so blessed for human habitation as California. And I am as glad to return to my home in California for its natural charm as I was sorry to leave Petrograd for its pleasant associations."

AVAILABILITY OF CALIFORNIA.

OF COURSE, some distant readers might get the idea, from the emphasis we place upon the glad return of the world-weary to California, that we are conducting here a sort of geographical rest-cure for those worn by activity in industry, in statesmanship, or by too energetic idleness. This

idea should resolutely be combatted. California is not a cozy nook in the shade for rest. California is a place in the sun for achievement, because all our natural endowments, our geographical situation, with its world-relations by land and sea, and the quality of our citizenship, all make for exceptional intellectual and industrial activity. It is not because of California's similitude to Araby the blest that Californians are so charged with love, loyalty and yearning. It is because California is, of all places, the best for getting on, in whatever line of honorable achievement one chooses for himself. It is because California, by most modern standards, stands highest in efficiency in noble human effort, and because California has advanced, beyond other States and countries, in understanding and enactment of the relative rights of woman to man, of man to man, and of true statesmanship to both and to the institutions which they create to serve and not to rule them. It is because in California men and women count, that we love our commonwealth, and this the world notes and admires.

And this attitude of Californians toward each other and toward the State, which is in part the gift of God and in part our own creation, is producing notable results in development, which increases the availability of California for the joy and use of the coming millions which our State can amply domicile and employ.

ROADS ILLUSTRATE AVAILABILITY.

TAKE the single fact of intercommunicability, which lies at the basis of development, is it not satisfactory that the report of the Highway Commission is that 87 1/2 per cent of the \$18,000,000 raised for the public highways is going into actual road building; that of the expenditure of \$13,746,396, in the building and improvement of 1320 miles of road, the cost of administration—meaning salaries, rentals and other expense accounts—is 4.41 per cent, and that other expenses for things not actually in the roadbed itself bring the total incidental expenditures up to 12.59 per cent—leaving 87.41 per cent in the labor and materials of construction. This, we believe, is coming nearer to getting the worth of its money than a State usually approaches in making a great appropriation.

Of course, the existing State highways are only the skeleton of the roads we need. It is quite as important to connect remote localities with them so that every farm-owner can ultimately drive out from his place upon a branch of the great system. And this will come. Looking towards it, Congress has just passed a law providing that during the next five years the general government will expend \$150,000,000 upon roads in the States, if the States will expend an equal sum. Of this amount California is entitled to receive \$2,336,250, which ranks her seventh of the 48 States sharing in government encouragement to road building. It is also very important to our State that the general government will expend a million a year for ten years on road within or adjacent to Federal forest reserves. The Western States were particularly interested in this phase of the question and successfully contended that the national government should protect and develop its own property. This will be a great force in increasing the availability of our mountain regions for settlement and for recreation.

CALIFORNIA IN THE WORLD.

OF COURSE the development of our agriculture, which is our particular hope and purpose, will be governed by the sum of the things which make California well peopled at home and well known abroad. To be great in food products of highest value we need demand which concedes large money in buying. Forty years ago our joy was in wheat and wool. Now we are buying more than half the wheat we eat and much of the wool we wear. We are buying too much of both and more than we shall in the future, we believe, and yet we have done well to get beyond these for our figure in world trade. Probably we never passed beyond fifty millions in value of wheat and wool product; now we are doing ten times that much with other products, and the future will be measured by our advance in trade, manufacture, and everything which makes for population at home and



popularity abroad. We in California will have more joy and pride in California as California wins larger place in the eye of the world. To this the Panama Expositions have contributed and the Panama Canal will contribute. To this also our bustling overland railways will contribute. Last week the first steamer of a new line brought a million dollars' worth of rubber from Singapore to San Francisco and transhipped it from this city to New York on twenty Southern Pacific cars running on an expedited schedule. The world is in a hurry for rubber nowadays. Usually, perhaps, it could float slowly through the canal and up the Atlantic coast, but trade is always apt to get in a hurry about something, and our availability in ships and rails as complementary factors in the world's work will be of inestimable value in our development. But the opening in San Francisco of central coast offices of the line to which this rubber-pushing steamer belongs is important. The new line belongs to the East Asiatic Company, one of the greatest commercial organizations in the world, owning plantations in the Dutch East Indies and operating a large fleet of steamers, which will ply from Copenhagen, via the Panama canal, to San Francisco, and thence to Tokio and Yokohama, running one of its biggest steamers into our port each month. This will be a new outlet for California products—striking the great continuous consuming belt of North Europe and Asia at both ends, by direct shipment.

CALIFORNIA SHIP BUILDING.

BUT great as is the advantage to us of the running in of the world's ships, the building of ships in California for the world's running is even more important, perhaps. While the Danes are doing the former the Norwegians are doing the latter. In Oakland there is now being finished a 7000-ton ship, at a cost of nearly \$900,000, for R. Stolt-Nielsen, one of the most powerful shipping interests in Europe, with headquarters in Norway, and it is to be one of a great fleet of steel freighters to be sent by the Norwegian shipper to the four quarters of the globe. And it was an interesting tale told to a reporter by Captain D. G. Dietrichson, the representative of the Stolt-Nielsen interests. "The shipping business has so developed that the shipowners are crying out for places to build ships. And of necessity, through the war, this means America. That is why the shipbuilders have more contracts than they can handle, and the contracts keep piling up. The Oakland shipyards all have plenty to keep them busy and are enlarging all the time. The result will be one of the utmost importance, of course, for your harbor, as well as for other harbors of the coast."

It may be a far cry from a ship's whistle to a cow-bawl, but every rivet well set in a California shipyard adds value to every acre of good land in the State!

Transplanting Acacias.

To the Editor: I have had very poor success in transplanting acacia trees. I would like to know the best time to transplant them.—J. H., Sebastopol.

The best time is after the coldest rains are over and just before the new growth begins. The ground is then moist and warm. These conditions are to be expected from February to April in different parts of the State. The trees should be taken up with a ball of dirt. Though this is not absolutely necessary if the roots are kept moist, it makes moving so much more sure that the extra trouble is worth while.

Midsummer Corn Planting.

To the Editor: Is it advisable to plant corn at this time of the season, on a few acres of raw land with irrigation and which we expect to seed to alfalfa in spring? Also, what variety would be advisable and latest date?—W. S., Kerman.

Probably you would not get much Indian corn. Some of the sorghums (Milo, Kafir, Feterita, etc.) would do better and would give you some green feed until the frost cuts them down. The tillage and weed killing will help the alfalfa.

Helping the Beet Downward.

To the Editor: I take from your illustration on page 86 of second edition of your "California Vegetables," that you refer to non-irrigated beet acreage, and that the lower or third moist strata is or ought to be subsoiled; or will the rootlets of mangel wurzels penetrate silt loam without subsoiling? The plowing was about ten inch, with tractor disking.—C., Chico.

The illustration you refer to is intended to show rather a shallow soil over a thin layer of hardpan (or even a plow sole) with a good depth of good soil under this impervious layer. Its lesson is that if this impervious layer is broken up the tap root of the beet will make its own way into the benign subsoil. In such a case subsoil plowing is not needed unless it may be required to reach the impervious layer. If you do that the beet will do the rest, if it finds adequate moisture, and it does not matter whether the water has penetrated from irrigation or rainfall.

Local Areas of Bark Injury.

To the Editor: I am sending a sample of bark from our Tuscan cling orchard. We have 80 acres of Tuscans five years old and three trees affected in this way. The infection is on the north side, extending from near the ground about two feet up. The bark on the affected side is very tight to the tree while on the upper or south side the bark is natural. These trees were irrigated three weeks ago and will not be irrigated any more before the crop is off. The fruit on the affected side of trees is about three weeks in advance of other fruit. The growth is stubby although healthy in appearance. What is the trouble and is there any cure, and prevention?—L. C. N., Kingsburg.

What caused the local areas of bark injury we do not know. Whatever it was, it arrested sap movement in the affected area and the accumulation of thickening sap burst out in gum-masses, as it usually does. The branch which received its sap through this bark area, being denied normal pressure for continued growth, took on phases of maturing—ripening fruit, stopping growth, etc., and reddening of foliage may follow. If sap enough does not move to these branches from other avenues they may die later; if they can get enough in these ways they will survive. Cut around the dead areas of bark to healthy bark, remove the dead bark and paint or wax the uncovered wood to keep out checking and decay. The wound will be covered with new bark from the sides, if the rest of the tree remains healthy. Take off the prematurely ripening fruit and cut back the affected branches, painting over the wounds.

You Can Keep Him out of Your Sky.

To the Editor: The party that owns land next to me has planted gum trees all along the fence. These trees will do me a great deal of damage. What action should I take? Is there a law against planting trees near the line?—Reader, Haywards.

As we understand it a man can legally place or plant anything within the boundary line of his property, unless you can prove that it will be a menace to good health. If it should be a building the whole of it must be over his own property and you can compel him to saw off a projecting cornice or any other part which may cross a line vertical to the boundary line and thus trespass upon your sky. If he plant a tree so near the boundary line that its enlargement crosses that line you can compel him to keep hewing it off to that line continually. If branches cross the line you can compel him to keep cutting them back to that line. If you have a good enough lawyer he can probably secure action to compel your neighbor to keep the roots of his trees from trespassing upon your soil rights which extend to the center of the earth—but you would probably have to dig down and demonstrate that trespass is being done. The law punishes; it does not prophesy. For this reason you may not have legal recourse against the planter for what his tree may do in sky and earth trespass: the tree must do it to a demonstrable extent first. If your neighbor is a kindly, reasonable man he will probably remove the trees when you show him that you consider them a danger and a menace. If he is a hard man and disposed to stand upon his rights to plant what he likes inside of his

line (and you do not consider yourself a pretty good talker on your own account) get a lawyer to explain to him what he can be legally made to do to keep his tree out of your earth and sky. He will then probably conclude that it would cost him more to keep from punishable trespass than the trees will be worth to him.

Para Grass.

To the Editor: Would Para grass be advisable to plant in the soft land in Imperial valley? I have some land that is often flooded by neighbors' waste water, so that alfalfa is scalded out. Is there danger of Para grass becoming an undesirable pest?—L., Brawley.

Para grass (panicum molle) is a coarse grass giving much succulent forage in a swampy place, while it is not cut down by frost. During the frostless period it might serve you that way. But it is a perennial, and if it likes the region it may take a strangle-hold. Frank S. Earle, when in the Cuban Department of Agriculture, wrote thus of it: "Para grass grows best in wet, half-swampy places. It is as hard to kill as Johnson grass, and I regard it as rather a bad weed. Still, like Johnson grass, it is a fine thing in its place and yields enormously on lands that are too wet for anything else." As for Para grass in the Imperial Valley, Coit and Packard wrote of it, in University Bulletin 210, that it was introduced in Imperial Valley in 1909, and made remarkable growth in a few patches. It is hard to eradicate when started on wet land, but in an irrigated section it can be dried by withholding water and cultivated out. It can be cut every six weeks or so during the summer in Imperial Valley.

Distinguishing Sex in Dates.

To the Editor: Please tell how female dates are propagated and how they can be distinguished from the male dates.—L. C. L., Brawley.

The seedlings must disclose their sex by their bloom, and they should be held in the nursery row until they do this. They may do it in two years—sometimes they wait from two to five times as long. The male flowers have stamens and no pistils; the female, vice versa. But you can tell the male bloom by its bunchy appearance and the pollen which it throws down as it bursts the sheath. The female bloom is slimmer and discloses a bundle of strands as it opens—developing flowers along these strands and casting no pollen. When you learn this difference you can distinguish the plants nearly as far as you can see them. Remember, of course, that all offshoots or suckers are of the same sex as the plants to which they are attached. In their case, therefore, you do not need to wait for the blooming.

Transplanting Seedling Roses.

To the Editor: Seedling roses from spring sown seed are now 2 ft. high. Is it safe to transplant now?—P. K., Napa.

If the terminal buds have formed and the foliage yellowing indicates dormancy, you can safely transplant, providing you plant out in ground which you can irrigate to maintain fair moisture until the rains do it. Cut back about half the top growth. If, however, the foliage is still active, we would not move until later in the season, when dormancy arrives. You can, of course, stop watering and hasten dormancy.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., July 11, 1916.

STATIONS	Past Week	Rainfall Data		*Temperature Data	
		Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka	0	.13	.07	64	52
Red Bluff	0	1.00	0	104	60
Sacramento	0	.06	0	100	54
San Francisco	0	.03	0	80	50
San Jose	0	0	0	96	42
Fresno	0	0	0	106	58
Independence	0	0	0	98	..
San Luis Obispo	0	0	.01	78	46
Los Angeles	0	0	0	76	56
San Diego	0	0	0	70	58

The Peach's "Poor Relation."

(Continued from page 49.)

San Francisco and A. Williams, who had the honor of presenting a silver goblet to an exhibitor of vegetables and grains, made an address in which he roamed quite widely over the glories of California. Among other things he mentions the nectarine as "mingling with other northern and semi-tropical fruits in the luxuriant gardens of Los Angeles." The nectarine was then introduced before the advent of the gold-seekers by the earlier pioneers who established themselves in Southern California. Obviously several other fruits reached California in the same way.

Nectarines came direct from eastern nurseries to central California with other fruits (in 1851 probably), but they were not largely planted and in the announcements of local propagators during the next year or so they were bunched with apricots and plums at the ends of the fruit lists. And yet they showed distinctive excellence, contrasting with the old standards. W. N. Thompson of Suscol in the lower Napa valley had reached this conclusion as early as 1856: "We have produced apples this year, of beauty and flavor unsurpassed even in the far-famed state of New York, while the nectarine and apricot have been so improved by their removal to California soil as scarcely to be recognized as the same fruit."

As early as 1855 there were to be found at several nurseries in central California as many as 20 named varieties of nectarines, and in 1856 W. B. Osborne had ten varieties in bearing near San Gabriel, Los Angeles county. A. P. Smith, who is credited with establishing "the first general nursery of ornamental as well as fruit trees, two and a half miles north of Sacramento on the same side of the river about 1852," had in 1857 in nursery rows 35,000 nectarines of twenty varieties and 5,000 apricot trees of fifteen varieties. This shows the relative standing of nectarine and apricot in the prophetic pomological eye at that time. Doubtless this early abundance in propagation of nectarines was influenced by its relation to the peach which was planted vastly more largely than any other fruit, as shown in the special discussion of that fruit (Rural Press, May 27, 1916).

Perhaps the first large planter of nectarines in orchard form was G. G. Briggs of Yuba county, but he was a slow starter with it. Though he began planting peach and pear trees in 1851 and continued with other fruits he did not strike in with nectarines until 1855 and then planted 2000 trees. By 1859 he had 1000 acres of orchard fruits, including 49,500 peach trees, on the Yuba, Feather and Sacramento rivers, but there were never more nectarines than in 1855. These orchards were destroyed by the debris brought down by the flood of 1861, and Mr. Briggs did great things with fruits in other parts of the state, but we have no record that he grew any more nectarines.

California Seedlings. — With nectarines, as with other fruits, the

pioneers held that if varieties brought from other countries improved so much in California, certainly native varieties, born from the seed under California conditions, had a good chance of added superiority. This was a true conception, judging by the number of California seedling peaches, almonds, plums and cherries which are now leading in our fruit lists. We should probably have realized the same attitude with nectarines if the fruit itself had any climbing force in it—which it has never had. It is, however, interesting history that B. B. Redding planted a nectarine pit in his Sacramento garden in 1855 and in 1859 the fruit of the tree was pronounced "entitled to place in the list of approved varieties." The performance of the tree aroused wonder, as is shown by this almost apologetic account which was published in 1859: "The original tree is but four years old and yet, incredible as it may seem, it nevertheless positively produced last year one and a half bushels of fruit and this year the perfectly enormous quantity of over five bushels."

Other seedling nectarines were reported from time during following decades, but attracted little attention because the fruit itself was in the discard. The final tragedy of the seedling nectarines occurred in '90s when a grower at Selma produced a group of very large, white seedlings, superior to any of the old varieties, thought to be fit to reach the highest standards in both canning and drying, but after a few years of disappointment through public indifference, grafted over the trees to peaches and thus closed their career.

Thus it is shown that the nectarine had a fair show for achievement in California, by early introduction, by interest of pioneer planters and by exhibition of greater excellence here than elsewhere, and yet it soon fell, never to rise to commercial importance. How can this fact be accounted for?

Sweet Name and Smooth Cheek. — Probably much of the charm which this fruit has had for English-speaking mortals during several hundred years may be attributed to the name "nectarine"—which created the impression that it must have been a sort of breakfast-food or coffee-substitute for goddesses. Whence came the picturesque naming of the fruit in the English, does not clearly appear, for the French simply called it "peche lisse," or smooth peach; following the practice of the East Indians, who called it "moondla aroo"—meaning the same thing. It is possible that the fruit, as grown under glass in English fruit houses, did exhibit some delectable characteristics to which one might find some tributes if he had time to search the literature dealing with the life of the British aristocracy of the eighteenth century. This much we easily know: that the nectarines which came to this country during the latter part of that century or the early part of the nineteenth, bore names predominantly British. We are looking at one English pomology published in 1860 which describes

about forty nectarines, of which thirty-three have British names, five French and one American, but no discussion of the fruit is given by which we might learn why the British went in for it so strongly. Nor does Darwin, who gives much attention to the fruit because of its interesting biology, tell us why growers cared for it.

Neither is it clear, from any records at hand, that much advantage inhered in the smooth cheek of it, though one might imagine that grown under glass its almost translucent beauty might give it claim which the peach loses by its furry coat. But this smooth skin, which might have charmed the British, dispelled the American, because the curculio, seeking guardians for its offspring, avoids candidates with whiskers but chooses the nectarine freely, as though it were a plum. In California, where there is no curculio, a smooth peach would seem to be ideal, but the experience already cited shows that its smooth skin could not secure popularity for the nectarine in California fruit growing.

What, Then, Is the Matter with the Nectarine?—In the writer's judgment the real reason why the nectarine is little and the peach great in popularity, and therefore in commercial value, is owing to the different flavor of it. Why the nectarine, which may be either the daughter or the mother of a peach, or even the sister of a peach and sit beside it on the same branch, has always its own flavor, different and inferior to that of a peach, we cannot explain. Darwin does not undertake to explain it, and he is a wise judge for he does not hand down a decision on a point irrelevant to his determination of the fact of origin, and yet he does establish the fact of different flavor when he writes (on page 364 of Vol. 1 of his "Animals and Plants Under Domestication") these words: "Nectarines, even when produced from distinct kinds of peaches, always possess their own peculiar flavor."

What is this different flavor? Our earlier American pomologists note it in this way. Downing in his edition of 1845 says: "In flavor the nectarine is perhaps scarcely so rich as the finest peach, but it has more piquancy, partaking of the noyau or peach-leaf flavor." Downing evidently disliked to condemn this popular British fruit. Thomas, another American pomologist, writing in 1846, says: "The nectarine is usually inferior and has more of the noyau flavor than the peach."

It makes us smile to think of the combat these contemporary pomologists of 70 years ago must have had over their French; for, of course, noyau is the pit, not the leaf. Downing's retort probably was that the pit, or kernel, and the leaf of the peach have the same flavor, due to the same substance, and let it go at that, for, though in later editions he corrected the spelling of the word noyau, he would not do more.

This ill-flavor of the nectarine as compared with the flavor of the best peaches was early noted in California and may have had much to do with the pioneers' side-stepping of the nectarine. Redding's seedling nectarine, previously mentioned, was said (in the California Culturist of September, 1859) to have "a very delicate flavor for a nectarine, which to our taste is seldom found equal to the peach, though but a variety of it." The writer was evidently trying to do the best he could for this new California seedling which he desired to exalt, but his conscience compelled him to note its inferiority to the peach in eating quality.

Nectarine Handicapped by Acidity. —But this noyau or wild flavor of the pit which persists in nectarines, though it is inexplicable when growing from the same wood as an adjacent peach which has it not, is not, in our judgment, the most unfortunate characteristic of the flesh of the nectarine. In our opinion it is the sharpness of its acidity which even peaches which retain much pit-



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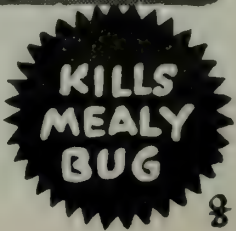
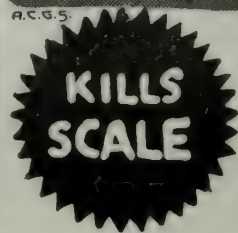


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flavor, do not possess. In an analysis of both in the agricultural laboratory of the University of California this result appeared:

	Acid.	Sugar.
Nectarine .....	.62	17.17
Peach .....	.24	17.00

That is, in this case, the nectarine had more sugar in its flesh and juice than had the peach, but it also had more than two and a half times as much acid, and that much excess acid acts fiercely on the composite flavoring of a fruit. Surely no argument is necessary to establish the preference of fruit-eaters generally for sweet fruit. The smile of satisfaction over a ripe peach, continuing to the very end of it, can be contrasted by anyone with the expressions of inquiry, wonder and finally the serious doubt of liking it, as its acid cuts his taste, is very common experience as one goes through with the eating of a nectarine.

But though the old Greek "nektar" applied primarily to vinous fragrance, such as might appeal to ethereal beings (for their divinities were not always assuming human form and raising Cain on the earth), even with the Greeks nektar signified honey and therefore impressive sweetness. In our notion, then, the English misnamed the fruit when they called it nectarine; for surely no god but old, scorbatic Mars could have had any use for the acidity of it.

But fortunately we have something much more definite on the subject than either our own philosophy or philology. It is from a well-known expert whose life study it is to know what people like and to give it to them, and his conclusion is that they will have sweet fruit. F. A. Dixon of Hunt Brothers Company kindly gives us his judgment as follows:

My experience in the canning business has shown that the trade requires the sweeter fruits, such as the peach and pear; or, to be more exact, fruits with the lesser amount of acid. The proportion of peaches to other fruits in canning is continually increasing. The peach is now 50 per cent of the entire pack and I believe the peach and pear will in time comprise 90 per cent of our entire pack. With other fruits, plums, nectarines, etc., I am satisfied it is on account of their excessive acid that their popularity is waning. I am sure that in the long run the sweeter fruits will prevail and supplant the others.

Why Canners Have Dropped the Nectarine.—In addition to his generalization of the movement of canning toward the sweet fruits, as given above, Mr. Dixon states a specific fact as follows: "We had almost forgotten that there is such a fruit as the nectarine. We have not sold a case of it for perhaps ten years; do not quote it in our price list and have no inquiries for it."

C. H. Bentley of the California Fruit Canners' Association kindly allows us to look at the nectarine problem from another point of view. He writes:

The reason why nectarines have practically disappeared from the list of canned fruits is because they are not good eating unless they are ripe and when they are ripe they will not stand processing. The trade is prejudiced because for many years the canners persisted in handling them too green in order to stand the processing with the result that the consumer rebelled. Nectarines should be an attractive item on the list, but the difficulty is that the average jobber wants a clear, transparent

syrup on his fruit. To attain this we have to pack them green. If they were packed ripe there would be a great deal of fibrous material floating in the syrup.

This is an exceedingly interesting indictment of the nectarines which have been grown in California and it is a good reason why more of them should not be undertaken. It is of course not a demonstration that this defect inheres in the nectarine as a fruit. Canners only use a few of the scores of peach varieties which are grown, and these are selected because of their canning quality. By multiplication and selection along the same line good canning nectarines could also be reached, but there is no inducement to do it which would appeal to anybody but a crank.

The Dried Nectarine.—For forty years this writer has exalted the beauty of the dried nectarine. When skilfully handled the product has always appealed to us as the most beautiful dried fruit California produces because of the beautiful pit-color in connection with the amber translucency of the surrounding flesh. This has always impressed us as handsomer than the opaque whites and yellows of the dried peach. But the sharp acid causes the interior of a man to withdraw the admiring gleam from his eye and to seek the complacent comfort which the well-dried peach produces in the same part of him. But as we desired a broader view of the dried nectarine than this we asked H. C. Rowley of the California Fruit News to give us of his knowledge of the attitude of the dried fruit trade toward this product, as follows:

I should say that no one, either packer, dealer or consumer, has any definite opinion of the dried nectarine as the industry did not develop sufficiently to find markets for itself. Some packers may have specific instances of complaints and loss some years ago, but they are all rather inclined to think now that dried nectarines, if obtainable regularly and generally, would be a desirable article when definite trade outlets are developed. It is the opinion of the dried fruit people in the San Joaquin, south of Fresno, where nectarines used to prevail, that the increased acreage, either being planted or contemplated, is likely to develop a reasonable and regular tonnage a few years hence. I do not find any packers of dried fruits who have any specific complaint over the nectarine situation other than the lack of regular and definite supplies on which to work up a trade.

On the whole, then, the prospect of the dried nectarine may still be considered hopeful, with some indication that the attitude is returning to the bright expectancy which some growers maintained from twenty to thirty years ago.

Nectarines in Eastern Shipments.—So far as our records show, the eastern shipments of nectarines in full carloads began with 5 cars in 1895; 1 car in 1896; 10 cars in 1897; none in 1898; 2 cars in 1899; none in 1900; 2 cars in 1901—and since then no separate mention; nectarine shipments apparently going in with "mixed and various." Of the eastern shipment aspect of the fruit F. B. McKevitt, who has been a grower, shipper and distributor of shipments for many years, gives us these interesting conclusions:

In my opinion the principal reason for the small planting and small shipment of the nectarine lies al-

most entirely in the fact that both tree and fruit are very tender. The wood of the tree is brittle and easily broken and the tree will not continue in bearing as long as the peach. The fruit is not safe to handle: its thin and tender skin makes it a poor shipper. The red varieties are fairly popular at the east and bring satisfactory prices when they arrive in good condition, but it is almost impossible to insure arrival in good order. Besides the fruit closely resembles the peach and there is no business so completely overdone in the east as peach growing. This has practically eliminated the California peach from the eastern fresh fruit market and it would tend to operate in the same way with the nectarine.

Mr. McKevitt is inclined to be a little bearish on eastern shipment of California peaches and is known to have greater faith in plums for that purpose, and may be right, but our eastern shipment of peaches is still running around 2000 carloads a year, about the same as for the last ten years, and we do not feel quite as he does about the future of it.

No matter how many peaches they grow at the east they cannot match the size and style of our fruit nor the earliness and lateness of its maturity. California can surround all they can do with peaches—but this is not a peach story.

Can We Have a Smooth Peach?—Mr. McKevitt thinks the nectarine is too like the peach: our notion is that it is too unlike it. Can we have a nectarine which will truly be a peach in flavor and sweetness, in canners' characters, in shippers' carrying endurance, etc.? Surely. The nectarine has not been bred, trained and selected to meet particular uses as the peach has. We have been trying, more or less, to get values from the natural wildness of the outbreaks. And all that can be overcome while retaining the smooth skin and whatever advantages there may be in that. It needs the thought and effort of the human mind to enable the nectarine to better serve mankind.

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[Written for Pacific Rural Press.]

When Robert Oxnard and his associated wanted to develop their Tapo ranch at Santa Susanna, they decided to grow fruits and nuts distinctively Californian, to avoid any future competition with the rest of U. S. They first chose walnuts; but did not know what variety would be best. They planted a block of 45 Placencia Perfections in nearly a square, in 1907. They kept yearly records of the yield of each tree as given below, and made valuable use of those records later.

They then searched the State for a better variety and chose the Mayette. They planted 250 acres mostly of these, interset with apricots. The first walnuts were set 40 and 50 feet apart—the later, large planting 60 feet.

Two years after planting the Mayettes, they decided that the 4

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12	38	42	60	72	212	53
23	32	41	66	72	211	52.75
32	30	37	58	78	203	50.75
18	30	40	52	67	189	47.25
11	22	43	50	57	172	43
31	20	28	48	66	152	38
36	16	31	48	55	150.5	37.625
3	20	31	45	37	133	33.25
37	20	28	38.5	46	132.5	33.125
0	10	25	44	47	126	31.5
33	7	22	37	56.5	122.5	30.625
7	6	21	41	48	116	29
25	14	17	34	40	115	28.75
24	12	30	25	41	108	27
26	23	29	21	32	105	26.25
5	10	36	12	41	99	24.75
30	13	18	35	31.5	97.5	24.375
41	13	18	28.5	37	96.5	24.125
21	10	14	32	39	95	23.75
29	14	12	33	32	91	22.75
39	8	13	30	35	86	21.5
20	22	19	11	29.5	81.5	20.375
44	10	13	19	35	77	19.25
10	13	16	16	26	77	19.25
14	7	26	31	12	76	19
6	3	17	23	25	68	17
1	15	10	20	51	127.5	12.75
43	2	13.5	21	45.5	113.75	11.375
42	9	7	12.5	17	45.5	11.375
22	3	12	25	40	10	10
40	6	2	12.5	15	35.5	8.875
2	7	14	12	32	8.25	8.25
27	11	13	10	34	8.5	8.5
16	2	5	25	32	8	8
8	4	8.5	17	29.5	7.375	7.375
15	3	10	14	27	6.75	6.75
35	5	6	13.5	24	6.125	6.125
34	1	2	9	2.25	2.25	2.25
28	3	5	8	2	2	2
38	4	4	8	8	8	8

Average of entire block (42 trees) 23.887

to 6 weeks delayed spring growth of that variety which is an asset in colder sections, was a loss at Santa Susanna, where Mr. Oxnard says the temperature is 5 to 6 degrees warmer than at Santa Paula where is located the largest lemon orchard in the world.

Buds from Best Producers.—The 250 acres of Mayettes were budded or grafted over to Placencia Perfection, using buds from the best producing trees of the original 45.

Difference Due to Individuality.—It will be noted that tree 19 was a consistently increasing heavy producer after records commenced at 5 years old. Variations in yield from an average of 61.75 pounds down to 2 pounds per season per tree are not due to disease, insects, or noticeable difference in soil, according to Mr. Oxnard. All have been treated alike. They had been grown without water; though water has now been developed for 1500 acres of the ranch.

The highest producers stand in a diagonal strip through the square.

The land is a light loam on top, getting somewhat heavier down to 30 or 40 feet deep. As it consists of soil washed down from the hills, and has a gentle slope, only careful soil auger experiments might show some difference in soil to partly account for difference in bearing of the trees. Most of the difference is credited, however, to the individuality of the trees; and it indicates that many walnut orchards even of budded varieties, contain trees which do not pay rent on the ground they occupy. Mr. Oxnard, however, will watch future records of the poorer original trees to see if they catch up in their mature years, with the yields of the better ones.

Orchardists who depend on the average or total production of their trees will be interested to note that the average per tree for the entire block for four years was 23.887 pounds. It would have been 61.75 pounds if all trees were like No. 19.

DECLINE STATE CITRUS DISTRIBUTION.

[By G. Harold Powell.]

The California Fruit Growers' Exchange, at a regular meeting of its board of directors on June 21, 1916, (all of its seventeen members being present), unanimously resolved not to become an adherent of the proposed State Bureau of Distribution as outlined by the committee appointed at the San Bernardino convention. This conclusion was reached after a re-investigation extending over several months, of the present distribution of the citrus fruit crop in all markets of the country. There has been no time when the California citrus fruit crop as a whole has been as well and as equably distributed to all markets of the United States and Canada as at the present time; and great progress is being continually made in strengthening the distributing system.

The Exchange is a voluntary association of citrus fruit growers organized without capital and operated at actual cost themselves for their benefit. The doors of the Exchange are open to any grower who is not now a member. Those growers who are not now having their products distributed to the best advantage may do so by joining the Exchange. They may thereby have their products sold through their own organization at the lowest cost of marketing any California fruit product. They may have the benefits of the national advertising of Exchange fruit; and of the large purchasing power of the Fruit Growers' Supply Company. They may participate in the other advantages which the Exchange gives the producer and which no other shipper is in a position to offer.

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kets, the weather conditions, the supplies of competitive fruits, such as cantaloupes, strawberries, and peaches, gives its 8000 members the most complete daily market news service that has been developed for any American crop. At least 66 per cent of the industry is included in the Exchange membership, the organization having recently made the

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HOLD SOMERS, 180 DeKalb Avenue, Brooklyn, N. Y.

WHO ATE THE PRUNES?

To the Editor: We note the statement in June 24 issue of Pacific Rural Press that our figures on the marked decrease in the consumption of California prunes had been clearly controverted. We stand by our guns. Mr. Richmond has not met the issue squarely. He compares the consumption of prunes for a period ending 1905 with that of the consumption of prunes for 1915. Our original statement was that the domestic consumption for the 5 years ending 1902 was very much greater than that of the domestic consumption for the 5 years ending 1914. Mr. Richmond uses the packers' figures for production and we use those supplied by the State Statistician. The packers' figures run a little larger than the State figures and may be more accurate; but of that we are not yet convinced, but even using the packers' production figures for the same periods, Mr. Richmond will arrive at substantially the same results that we arrive at, as we both depend on the same export figures, those of the United States. We believe that Mr. Richmond's figures were put forth, not with the idea of showing up any alleged inaccuracy of ours, but more for the purpose of bulling the market, as it is well-known that he has large interests in the producing end of the game; and consequently desires to see as good prices of prunes as are possible. With the production of prunes in a general way practically stationary since 1899 and with exports very largely increased since that date, it is plain that there must have been a falling off in the domestic consumption. We are willing to admit that during the last three or four years the domestic consumption may not have decreased any and that during the last two years it has probably increased a little.

Growers' Information Bureau.
G. E. Merrill.

[The Information Bureau figures were taken correctly from the State statistician's report. As indicated, the domestic consumption for the first five years in which both production and exports are given (1898-1902 inclusive) was approximately 115,000,000 pounds of prunes. In the last five-year figures available, the domestic consumption was approximately 45,000,000 pounds. Mr. Richmond's corresponding figure was for the one year 1915, for which the conditions were abnormal and the consumption incomplete.]

MORE RATS!

To the Editor: I am pretty sure that there are ten times more rats than human beings in any city, town, village or farm in the United States. We have poisoned hundreds of them at a very little expense for strychnine and sugar. We at first took advantage of their fondness for "hen fruit"; but they got the "back to the land" idea and began to overrun the country around here this spring, taking little chicks by hundreds (some of our neighbors lost 90 per cent of their chicks), and we would find 4 or 5 lying dead with a small hole under the wing in our own brooder yards. As eggs are too high-priced, we tried Rat Corn, Rough on rats, Rat virus. They were too wary to

touch these. We therefore cut up some bread into pieces 1 1/4 inches square, soaked them in milk, put a little powdered strychnine on each piece, rubbed it in to prevent its floating off the bread when we poured a sirup, made from Golden C sugar, over each piece to disguise the bitter taste of the strychnine, and we had the satisfaction of knowing that there is an inexpensive bait that rats will take in preference to all others. The siruped bread was placed on the same piece of board on which were the other poisons that they refused to touch, yet they took all the bread for 12 or 14 nights, and some of them were so fond of it that they lingered a little too long and died before they could get back to their runs.

But unless there is concerted action all over the State, it is only a question of time when it will all have to be done over again.

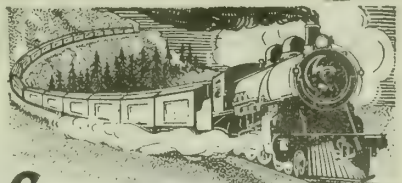
San Jose. S. & B. G. Haigh.

LATE-PLOWED COVER CROP.

To the Editor: We note that you advise no cover crop for dry-farmed trees in regions of scant winter rains. A neighbor here sowed 60 acres to rye and allowed filaree and bur clover to grow on 80 acres, all of which made fair growth considering that winter is the dormant season. But to get a little more growth, he allowed it to stand two weeks after it should have been plowed. Result, cussing by the plowman, no moisture, and a poor, scrubby growth of trees. Trees plowed when the land was prime (same age and same soil) have made better growth with no cover crop. I. L. Sweet. Arbuckle.

BELS FOR FRUITGROWERS

Beautifully lithographed stock labels ready for immediate shipment. Write for free samples—address Label Department, **SCHMIDT LITHOGRAPH CO.,** San Francisco.



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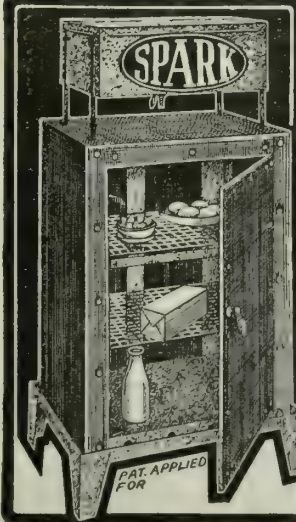


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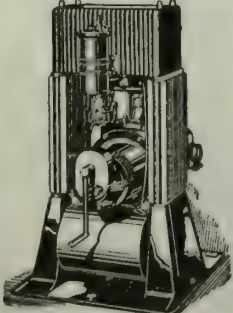
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GRINDING ALFALFA MEAL FOR HOGS.

To the Editor: I find cured alfalfa hay for hogs very wasteful. Please give data on use of alfalfa meal; its advantages or disadvantages, method of preparing for grinding, cost of a small mill, and power to run it.—A. M. MacK, San Jacinto.

[L. H. Twede of Willows was feeding alfalfa meal to his hogs when we visited him a year ago. He writes June 20, 1916:

"Referring to your query, feeding alfalfa meal to hogs, will say that I am still feeding alfalfa meal except when I have green feed. During winter when there isn't any green feed, I mix the alfalfa meal as follows: one-fourth Croley's Pig meal, one-fourth middlings, and one-half alfalfa meal. For pigs 4 to 7 months old I mix three parts alfalfa meal and one part fine ground barley. Brood sows, half alfalfa meal and half fine ground barley. The class of swine we feed it to is pure-bred Berkshire hogs. We have now about 400 head."

Pigs eat all of the meal, but waste part of the hay. Its economy depends on whether cost of grinding and sacking and storage is less than cost of the wasted hay. We believe it is, in most cases. It is useless to bale hay for grinding; unless it must be hauled or shipped far enough to overbalance cost of baling by lessened cost of hauling. Have the hay dry for grinding.

One of several Smalley special alfalfa cutters is built for $\frac{1}{2}$ inch lengths with capacity of $\frac{3}{4}$ to $1\frac{1}{4}$ tons per hour, according to condition of hay, but with greatly increased capacity where adjusted for longer than $\frac{1}{2}$ inch cut. It requires a 15

h.p. gasoline engine, weighs 1900 pounds, and is listed at \$480. They also have a screen attachment to put onto their silage cutters when finely chopped alfalfa is desired. This is much cheaper. This recutting attachment on the Junior mill makes 500 to 800 pounds of meal per hour with a 5 to 8 h.p. gas engine.]

STEAM PRUNE DIPPER.

[Written for Pacific Rural Press.]

A steam boiler furnishes heat and power for the prune dip and grader on the ranch of Visalia Fruit and Land Co., who have 240 acres of prunes, and 80 of peaches. While their outfit might be more economically fixed up, the steam boiler idea seems a good one. A steam engine runs the continuous dipper and the shaker. It keeps a man tolerably busy dumping fruit into the machine. Ranch Supt. F. A. Hogan says that one man put 1600 boxes through in half a day a few years ago. Steam direct from boiler to dipping tank keeps the water uniformly hot.

The water is changed every day; or twice a day if too dirty. A small shovelful of 76 per cent Wyandotte caustic soda is thrown into the boiling water after every 100 boxes have run through.

Two cold water shower jets play on the prunes as they come out of the hot water, to wash off the soda and to stop the cooking quickly.

The dried prunes are never put into bins after heating up in the morning sun. They are stacked in the morning while still cool, and put into the bins. Thus "they come out of the bins bright and lifelike instead of brown and dead."

AIR COMPRESSOR IRRIGATION PUMP.

Air compressor irrigation pumps have low efficiency, but are highly desirable under certain conditions. The Tapo ranch at Santa Susanna, Ventura county, is developing 300 inches by means of air from one electrically driven Kimball compressor pump. A group of 9 or 10 wells is located in each of two ravines on the hillsides above the orchard land. On the ridge between them is the compressor which forces air through simple pipes deep into each well. This raises the water from 18 or 20 wells by using only one pumping plant. Thence it gravitates to the fields and orchards of which 1500 acres are to be irrigated.

Artesian water is secured here at 200 or 300 feet, according to Robert Oxnard, and they flow slightly when not being pumped. Wells have been put down and good water supply secured at the lower edge of the ranch, but these are only for demonstration and emergency.

The American Beet Sugar Co. at Oxnard raises 20,000,000 gallons of water per day on their factory site, by means of similar air pumps.

W. S. Rosecrans of Gardena, Los Angeles county, also has an air compressor pump, run by a 35 h.p. motor, but not used much on account of its low efficiency. Other wells with centrifugal pumps supply most of his irrigation. Where there is much sand in the water, Mr. Rosecrans believes the air pump would be best on account of wear on valves of other types.



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Samson Sieve-Grip 10-25 at \$1250 and 6-12 at \$725, both f.o.b. Stockton.

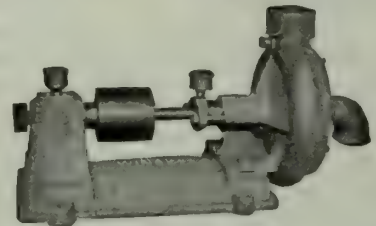
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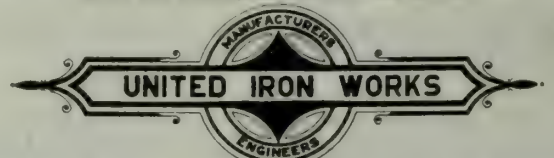
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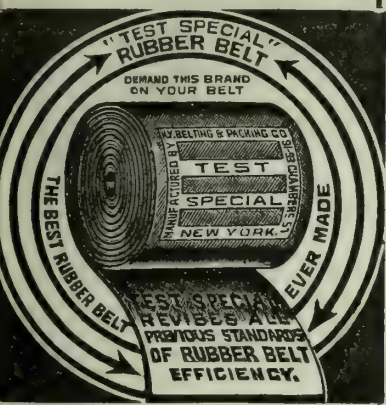
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REDWOOD TANKS—SILOS.

Thirty-five years in this business in Stockton.—A 500-gallon tank, \$8.00. A tank 6 ft.x2½ ft., \$7.50. Other tanks equally cheap. I deal direct with the consumer. You will save 10% to 25% by dealing with me. All sizes in stock. Clear dry redwood direct from the mill by vessel. Write Latest improved machinery. Doors, Windows, Frames, Mouldings.

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STOCKTON, CAL.

L. F. WILSON.

ALUMINUM PISTONS.

To the Editor: What do you know about leak proof cylinder rings made of aluminum?—E. A., Potter Valley.

[All inquiry fails to reveal anything of the nature except aluminum pistons for automobiles and aeroplanes. Several authorities suggest that as aluminum does not spring, it would not do for piston rings; and aluminum cylinder lining might do, but would probably crystallize.]

POWER NOTES.

Epsom salts are recommended for headlight dimmers. Dissolve a handful in a cup of water and apply to inside of glass. The result is said to be a beautiful frosting for several months.

Auto trucks by the dozens have been shipped to Imperial county to haul cantaloupes. This saves the former four-horse or mule teams from breathing the hot dust.

A national tractor demonstration circuit is reported as being operated by a committee of the national tractor and thresher manufacturers' ass'n in the central states beginning Jul. 17 in Texas and ending Sept. 8 in Wisconsin.

A straw spreader for the combined harvester gets best fertilizing advantage from the straw, with least trouble in plowing. It may be fastened onto the harvester, or geared onto a pair of rear wagon wheels, and hooked behind the machine but under a short conveyor.

That a series of deep wells along the Kaweah and St. Johns rivers, for irrigating 15,000 acres in the Lindsay-Strathmore district, would seriously impair the irrigation value of the rivers, was alleged in court proceedings to prevent the well driving.

Tulare county supervisors prohibited the use of grousers on tractors using county roads; but a protest set forth that outside tractors needed during harvest were thus kept out of the county.

A five-ton truck hauled 125 tons of cherries this season from Biceglia Bros.' orchards near San Felipe to Gilroy for shipment.

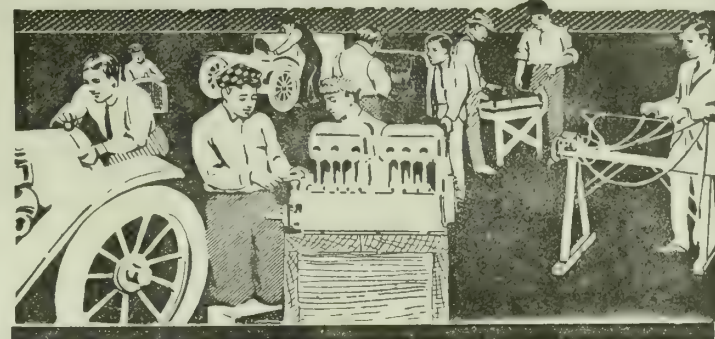
A bean thresher 30 feet long, 12 feet high, containing three cylinders 44x60 inches, was built last season by the Ventura Implement Co. for the Irvine ranch in Orange county. It cost about \$8,500.

A tractor-hauled combined harvester for lima beans was tried out last season in Ventura county.

The basis of most of the best anti-friction metals in use as Babbitt metal, is lead. Fast running journals are babbitted with a mixture of lead and antimony. Where boxings are subjected to heavy weight and wear, tin 89.3 per cent, copper 3.6 per cent, and antimony 7.1 per cent are preferred.

A big tractor demonstration will be held at the State Fair, Sacramento, beginning Sept. 4. Rules will be printed in these columns next week. It will begin with a parade of all tractors at 9:30 a. m. followed by three hours of public plowing and daily afternoon private demonstrations.

A Statewide movement to eradicate rabbits and ground squirrels through the Farm Bureaus was recently started in Kern county.



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Auto machinists—auto repairers and trained men of every kind are in big demand at good pay.

Practical courses, directed by practical experts, will qualify you for any of these positions—

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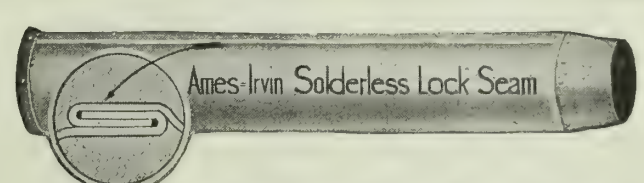
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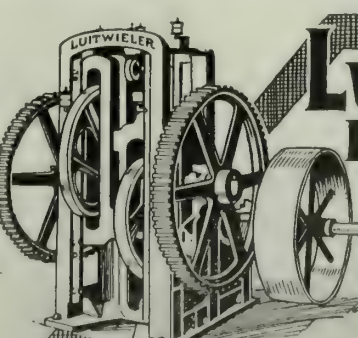
Neither solder or rivets are used in its construction. Each sheet is edged, locked together and then set down under 3500 pounds pressure. Such a seam will not break or leak. It is simple, solid and strong, with no holes in the steel.

Ames-Irvin Lock-Seamed irrigation pipe was the first prize-winner against all competitors at the Sacramento State Fair in 1913 and the Fresno and San Jose County Fairs in 1912.

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We can prove to your entire satisfaction that the Luitwieler Pump, owing to its perfect construction, operates on far less power than any little or no upkeep expense. Our strong claims

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General Agricultural Review.

GRAINS AND FIELD CROPS.

A Davis barley grower reports 600 sacks from 15 acres.

Butte county rice crop is reported in the best condition ever.

A Lake county farmer has made over a swamp into a valuable bean field.

Bean growers in Monterey county are contracting their bean crops at \$5 per cental.

Recent rains in Butte county are reported to have damaged grain and hay very little.

A cantaloupe 30x33 inches in circumference and weighing 17 pounds was recently brought to Brawley.

Turlock cantaloupes have been moving East this week through the Turlock Merchants' and Growers' Ass'n.

The long dry spell is responsible for irrigation in the San Leandro district, said to be the first time in 30 years.

An Anaheim Lima grower recently sold 610 sacks at \$6.35 per cental. They were raised between orange trees.

Delta onions have been moving to Chicago at \$1.80 to \$1.90 f. o. b. landing. Upland onions are practically all marketed.

Rice irrigation at Madison is held responsible for hay crop failures around Davis due to inability to get water at the right time.

Cottonseed in the old cotton States sold at \$30 to \$40 per ton last fall, but farmers who had to replant this spring paid up to \$100 for seed.

About ¾ of Livermore Valley hay was reported last Saturday, sold at \$13 to \$15 for wheat hay and \$11 to \$12 for barley and volunteer.

F. A. Shipley of Santa Paula is the manager of the new Cal. Lima Bean Growers' Ass'n. He draws \$8,000 per year. Good management is necessary.

The Jacks Estate is selling alfalfa land to dairymen in Monterey county, in lots of 100 acres at about \$230 per acre, plus the cost of installing the irrigation outfits.

Oxnard sugar beet harvest is to begin July 17. San Fernando valley beets are a little later. 1800 tons per day will be handled at the start, and 900 tons more daily, later.

Of the 4057 carloads of cantaloupes shipped from Imperial Valley before June 30, 5100 crates were condemned by the inspectors-at-large besides what were condemned at the shipping sheds.

The American Beet Sugar Co. will pay its bonus of 50 cents a ton over the \$4.50 contract price for beets yielding 15 per cent sugar, with the regular payments instead of waiting 10 to 12 months as their contract allows.

The grain and hay crop in Tulumne county was very spotted. Where the ground was summer fallowed and a good seed bed obtained, the barley, oats, and wheat matured a good crop. 50 per cent would be conservative for the whole county.

A four-months beet sugar run to put out 100,000 bags, was commenced early in July by the Visalia factory of the San Joaquin Valley Sugar Co. Beets for this factory have been planted in Kings, Tulare, and Kern counties.

The July 1 Government crop reports and forecasts for Cal. this year, and final estimates for last year respectively are: corn 2,280,000 bushels and 2,624,000 bushels; wheat 4,700,000 and 7,040,000; oats 6,080,000 and 6,963,000; barley 32,300,000 and 39,440,000; rice 4,180,000 and 2,268,000; potatoes 8,790,000 and 10,140,000; sweet potatoes 931,000 and 810,000; hay condition 79 as compared with the 8 year average of 85; cotton 104,000 bales and 28,551 bales; sugar beets condition 90 as compared with 10-year average

of 93; beans condition 86, ten-year average 90.

DECIDUOUS FRUITS.

Many Gilroy prunes are dropping.

The Porterville cannery began operations on peaches this week.

Dried apricots are reported as of specially good quality around Los Gatos.

Several thousand nursery seedlings were raised by Placer county fruit growers last season, writes hor-

tical cultural commissioner C. K. Turner.

Stockton reported scarcity of peaches last week for the local trade.

Sam Samuelson has been appointed manufacturing manager for the Cal. Peach Growers.

Many Healdsburg prunes are developing spots similar to sunburn and are dropping prematurely.

Contra Costa prunes are badly cracked, though there has been no irrigation. Aphids have been rather bad.

Hunt Bros. cannery at Haywards began their summer's run of fruit

and vegetables last week with apricots.

The cannery at Watsonville expects to start July 17 to can four or five thousand chests of blackberries.

Nevada county fruit planting last season was far below that of the four previous seasons, according to horticultural commissioner D. F. Norton.

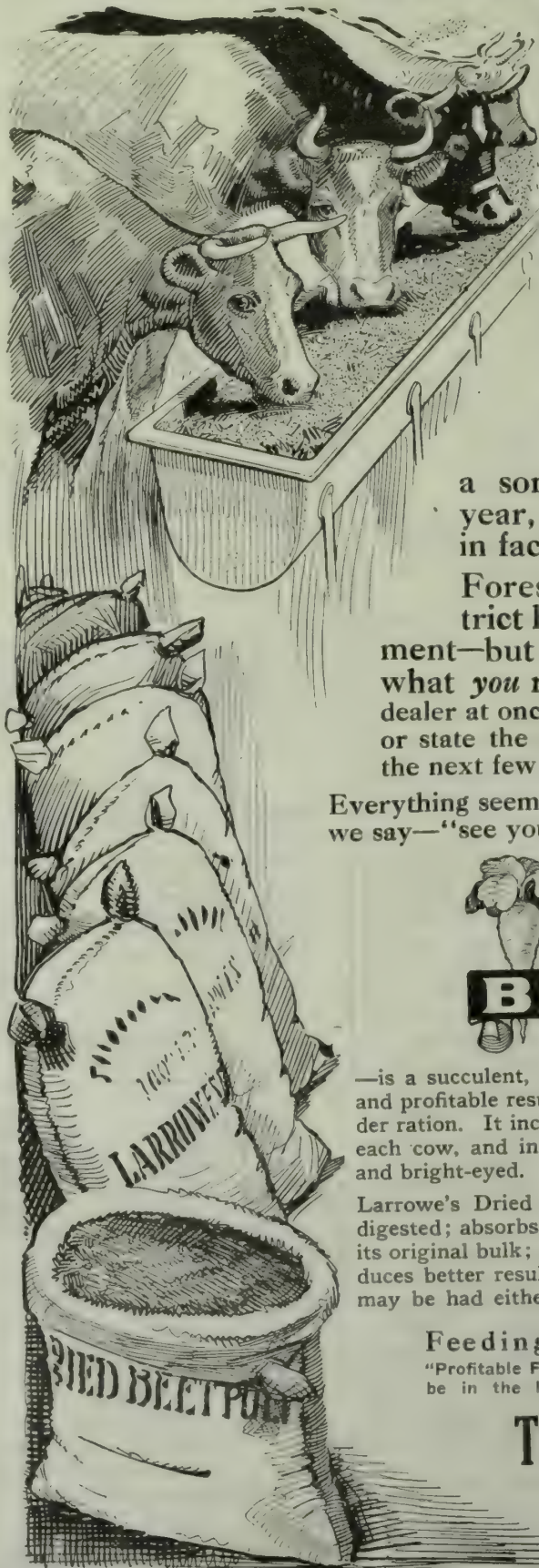
A large quantity of freestone peaches for canning have been purchased by C. F. C. A. around Hanford to fill the gaps between cling peach ripening.

DAIRYMEN !!

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For This Season's
Supply of

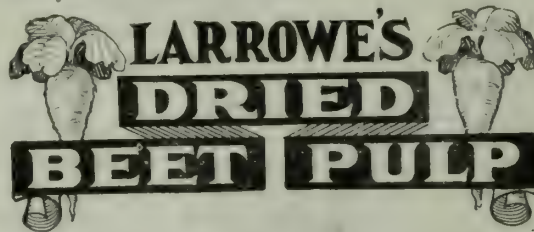
DRIED BEET PULP



The beet sugar factories will soon begin the slicing of this season's beet crop—and that means a new supply of Larrowe's Dried Beet Pulp. While we will have a somewhat larger supply than last year, yet the demand is also larger—in fact, has increased enormously.

Foresighted dealers in nearly every district have already placed orders for shipment—but if you wish to make sure of getting what *you* require it will be well to see your dealer at once and give him an order for early delivery or state the amount you think you will need during the next few months.

Everything seems to favor the man who is prepared, so we say—"see your dealer *now*."



—is a succulent, milk-producing, vegetable feed that gives certain and profitable results. Combine it with alfalfa and it makes a wonder ration. It increases the milk flow from 1 to 5 lbs. per day from each cow, and in addition keeps your cattle healthy, sleek-coated and bright-eyed.

Larrowe's Dried Beet Pulp is light, bulky, succulent and easily digested; absorbs water very quickly and swells to about six times its original bulk; is cheaper than bran and other mill feeds, yet produces better results. It is put up in convenient 100-lb. sacks, and may be had either plain or with molasses. Ask for "Larrowe's."

Feeding Booklet Free—Write for it!
"Profitable Feeding" contains valuable information that should be in the hands of every feeder. Sent free on request.

THE LARROWE MILLING CO.

934 Central Building

LOS ANGELES, CALIFORNIA

An enthusiastic crowd of prune growers overflowed the courtroom at Napa July 8 to hear Col. Weinstock, Jas. Madison, and G. E. Merrill talk about organization.

Two new fruit sheds have been built this season on the Oakland, Antioch & Eastern Ry in Contra Costa county to pack fruit for shipment to the East.

E. B. Anderson's Bartlett pear trees in Contra Costa county have had to be propped to hold the best crop in years. Picking for eastern shipment commenced this week.

Last year was an apple-worm year, and last winter was not so fatal as usual to the overwintering worms, so special vigilance is required this year according to Washington Expt. Sta.

We have recently received a copy of the report of the Fruit Growers' Convention at Visalia, full of fruit and nut facts by authorities of experience in California. Published by the State Commissioner of Horticulture.

M. D. Kennison of Napa not long ago received returns on fancy cherries sold late in June on the New York auction: 10 boxes 9-row Bings @ \$4.25; 2 boxes 8-row Lamberts @ \$6.37½; 20 boxes 9-row Bings @ \$4.50. Such prices are very rare so late in the cherry season.

GRAPES AND SMALL FRUITS.

Recent weather has favored mildew in Fresno county.

There seems to be a legal flaw in the Associated Raisin Co. contracts with growers.

Sultana grapes were sold on the Riverside public market July 6. They were a bit sour.

Twenty-nine cars of grapes had been shipped East from Imperial county before July 1. Fifty sugar tests had been made.

Four thousand tons is a full berry crop for Sebastopol according to Mgr. I. N. Cable of the Berry Growers, but frost got about 25 per cent of it.

As soon as Thompson raisin prices were announced by the Associated Raisin Co. the orders previously taken were confirmed, and very shortly practically the whole crop was sold. Seeded raisin prices will be announced in a few weeks.

Arakelian Bros. seem to have thought themselves immune from the Standardization law in regard to grapes. When it was enforced on them by holding up a carload, they are said to have attempted the removal of the horticultural commissioner through both the State horticultural commission and the county supervisors.

CITRUS, OLIVES, NUTS.

The Arbuckle Almond Festival will come Oct. 6 and 7.

The California Almond Growers' Exchange recently secured a permit to build an \$8,300 addition to its Sacramento shelling plant.

One of the pioneer walnut and almond planters of Contra Costa county is allowing many of his almond trees to be defoliated already by the red spider.

The U. S. Dept. Agr. estimates the condition of Cal. oranges July 1 at 5 per cent better than the past 10-year average, and lemons 3 per cent better. For the U. S., oranges 1 per cent better than a 10-year average.

One corporation brought 242,700 nursery seedlings into Yuba county last season. These were mostly olive and orange with some deciduous and some shade trees, writes horticultural commissioner G. W. Harney.

MISCELLANEOUS.

Stanislaus county has appropriated \$300 per month for squirrel killing.

Over 10,000 ornamental and shade trees and plants and 400 palms were planted in Yuba county last season, writes horticultural commissioner G. W. Harney.

Some 50,000 eucalyptus seedlings and 20,000 cypress were set in Monterey county for windbreaks last season according to horticultural commissioner J. B. Hickman. About 7500 ornamentals were also planted.

PERSIMMON STOCK.

To the Editor: I have a great many deciduous fruit trees and would like to know what I could graft persimmon into.—J. C. S.,

[Japanese and American persimmons are the only stocks we know on which persimmon may be grafted.]

The California Farmers' Library

California Fruits and How to Grow Them.....	\$3.00
California Vegetables in Garden and Field.....	\$2.00
California Hog Book	\$2.00
One Thousand Agricultural Questions Answered.....	\$1.50
Productive Feeding of Farm Animals.....	\$1.50
California Poultry Practice	\$1.00
California Garden Flowers, Trees, Shrubs, Vines.....	\$1.50

Address,

Pacific Rural Press

525 Market St.,

San Francisco.

Ira Vail Won \$2000

Against the World's Great Racing Cars with a

Hudson Super-Six

The Only Car That Kept Going

The Hudson Super-Six is not built for a speed car. And we don't build special racing cars.

Our speed tests are made to show the endurance of our patented Super-Six motor. And here is one test which did it.

Met \$10,000 Cars

The Metropolitan Race on the speedway in New York is the great racing event of the year. The world's best racing cars are entered. Their cost will average \$10,000 each.

Ira Vail, of Brooklyn, entered that race with a Hudson Super-Six, which had been run for months. And everybody laughed. The motor was our regular Super-Six. The car, being a used car, cost him \$1,300. For such a car to meet the world's finest racers seemed like David and Goliath.

It Never Stopped

The other cars ran faster, but they had to stop. The terrible speed called for repairs and adjustments. The Super-Six ran the 150 miles without a single stop. It was the only car that did that.

So the Super-Six defeated most of those racing cars. It won third place and \$2,000. It was only five minutes behind the first car. All because this engine excelled all others in reliability.

1,819 Miles in 24 Hours

Another Super-Six ran 1,819 miles in 24 hours. That is as far as from New York to Denver. And one man drove it all the way.

That was a stock chassis, exactly the same as in the cars we sell. The A. A. officials certified to that. No other stock car has ever run more than 1,200 miles in that time.

That was due to endurance. The Super-Six kept an average speed of 75.8 miles per hour, and kept it for 24 hours.

Like 10 Years' Use

That same Super-Six has been run at top speed for 3,800 miles. And not a part or bearing in the motor shows evidence

of wear. That means more strain than ten years' average use.

That is what we are proving—how the Super-Six will last.

This motor is a Hudson invention, controlled by Hudson patents.

By eliminating vibration—the cause of friction—the power is increased 80 per cent. So the Super-Six—a small, light Six—delivers 76 horsepower.

And that same utter smoothness gives this wondrous endurance.

Hudson Now Supreme

The Super-Six motor makes the Hudson car supreme. The man who owns one feels himself the master of the road. He meets no car so powerful, so speedy or so flexible. No stock car ever built has matched it in performance.

He meets no car more beautiful, more luxurious or impressive. He meets no car so durable. He goes anywhere and everywhere with a knowledge that none ride more safely or comfortably. And yet the owner of a Super-Six pays but a modest price.

Here is a car 80 per cent more efficient than Sixes used to be. When you buy a fine car you are bound to select it. So we want you to know the facts.



7-Passenger Phaeton, \$1,475 at Detroit

Seven other styles of Bodies

Hudson Motor Car Company

Detroit, Michigan

The new Four

Overland
TRADE MARK REG.



What 1000 Cars

These two latest Overland developments again emphasize the enormous economy of enormous production.

No one has ever before made 1000 a day of cars of this size and class—nor half that many.

1,000 cars a day enable us to use materials of a much higher quality and not only permit but actually enforce an accuracy of workmanship which smaller productions of cars in the same price range neither permit nor require.

1,000 cars a day make possible better, larger, much more comfortable cars than

have ever before been possible at anywhere near the price.

* * *

This newest Overland is the largest Four ever offered for so low a price.

In the first place, note the longer wheel base—112 inches.

The enbloc 35 horsepower motor which has made the Overland famous is continued.

True—it is perfected even more and now it is a fitting climax of the experience obtained from a quarter of a million of these Overland motors in daily use.

Shock absorbing cantilever type springs are a big improvement.

The gasoline tank placed in the rear is another improvement. The vacuum system insuring a steady even gasoline flow at all times is still another improvement.

The famous and complete Auto-Lite electric starting and lighting equipment is furnished.

All electric switches are on the steering column—right within reach.

The artistically designed streamlined body with one piece cowl makes this one of America's most attractive new cars.

Catalog on request

The New Four

Model 85-4

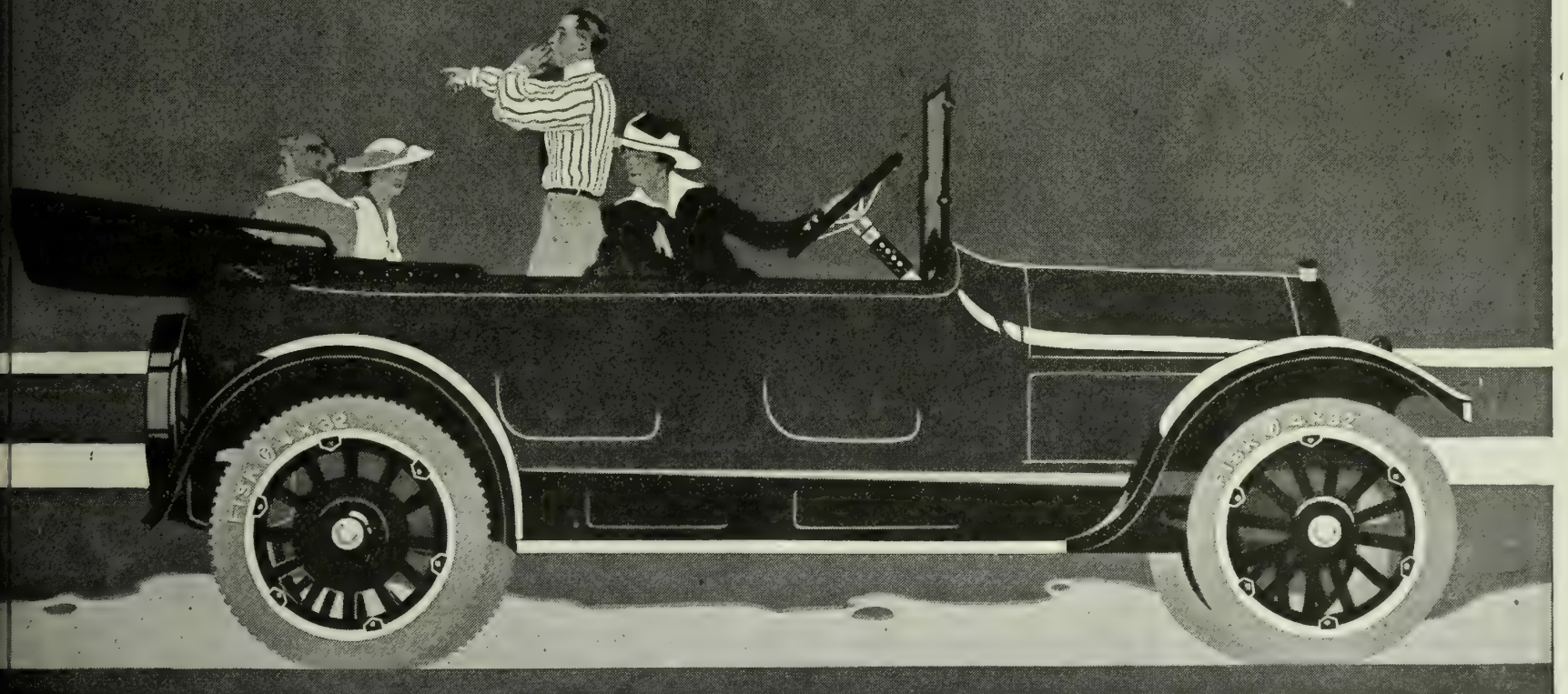
35 horsepower en bloc motor
112 inch wheelbase
32 x 4 inch tires
Cantilever rear springs

Auto-Lite Starting and Lighting
Vacuum tank fuel feed
Gasoline tank in rear with gauge
Electric control switches on steering column

The Willys-Overland

Overland Announcement

The new Six



Day Make Possible

Get the price of this, our greatest four-cylinder value, is less than any car of its class ever sold for before.

* * *

No less a pace maker is the newest Overland Six.

Here is the Six of Sixes! A snappy four-passenger long-stroke 40-horse-power model—easy to handle, light, economical, mighty comfortable, having all the advantages of higher priced Sixes, yet it comes absolutely complete at a lower price than any other six of its size.

Its smart body design is long and low—having lines of artistic simplicity.

And the motor! This will warm the heart of every six cylinder enthusiast in the country.

You've heard all about fast get-aways—smoothness—crawling and climbing on high. This Six does all that and then some!

The wheel base is 116 inches. It has cantilever springs and even-flow vacuum system with the gas tank in rear,

The tires are four inch. It has the complete Auto-Lite electric starting and lighting equipment with all switches on the steering column.

* * *

Some Six! Yet the price is lower than any other Six of its size.

But go to the nearest Overland dealer and see these new models. Go over them—note all the very real and important improvements, and learn the prices.

The Overland dealer is ready to make demonstrations of both models now.

Press Dept. 729.

Company, Toledo, Ohio

The New Six

Model 85-6

85-40 horse power en bloc motor
116-inch wheelbase
32 x 4 inch tires
Cantilever rear springs

Auto-Lite starting and lighting
Vacuum tank fuel feed
Gasoline tank in rear with gauge
Electric control switches on steering column

With the Livestock Men.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

DAIRYING AND DAIRYMEN.

A Colma dairyman is charged with selling adulterated milk.

W. Kaiser recently shipped three cars of dairy stock from Hollister to his new alfalfa ranch near Oakdale.

Eleven cows in the Napa Cow Testing Ass'n produced over 40 pounds fat during the month ending June 15.

For 15 years Fresno has required all city milk to be from non-tubercular cows. Cream may be from tubercular cows if it is pasteurized.

F. M. Hollingshead of Wheatland has sold his 240 acre ranch to a Folsom dairyman who will stock it with purebreds. Sale price \$15,000.

Cow tester Bruno Kaehler began operations last week in the new Orland Cow Testing Ass'n. There are 58 dairymen with nearly 1000 cows in the Ass'n.

C. G. McFarland of Tulare has traded his ranch for an undeveloped place and is selling half his Jersey herd which includes many Register of Merit cows.

Modesto is to have a cheese factory in connection with the creamery, to begin operations by Aug. 15. The building will be 35x100 feet.

Of 750 Holsteins, recently admitted to advanced registry, more than half were with their first or second calves, but they all averaged 390.9 pounds milk containing 13.776 pounds fat, in 7 days.

GRADE COW RECORDS.

Following are records made by grade cows in June in the Gridley Cow Testing Assn.

Owner of Cow.	Breed	Pounds Milk	Percent Fat	Pounds Butterfat
C. Goetz, Tudor.	Shorthorn	1371	4.8	65.8
D. Beale, Gridley.	Holstein	1377	4.4	60.6
H. Berg, Marysville.	Holstein	1557	3.6	56.0
W. J. Condon, Chico.	Shorthorn	1185	4.7	55.7
J. H. Guilli, Chico.	Holstein	1554	3.5	54.4
J. H. Guilli, Chico.	Holstein	1620	3.3	53.5
S. A. Mealy, Gridley.	Holstein	1089	4.9	53.4
D. Beale, Gridley.	Holstein	1575	3.3	52.0
J. Fronchay, Tudor.	Shorthorn	1389	3.7	51.4
J. H. Guilli, Chico.	Holstein	1623	3.1	50.3

State Dairy Inspector C. A. Peairs recently rode two trips in one day with a Tulare county cream collector who started at 5:30 a. m. and finished the second trip at 1 p. m. Patrons on the second route were in-

Register of Merit records of the Jerseys belonging to C. G. McFarland of Tulare are given herewith: Meridale Melia Kissam, 658.5 lbs. butter, 7 yrs.; Philadelphia Glory Zella, 631 lbs., 11 yrs.; Philadelphia Glory Gertie, 592.3 lbs., 13 yrs.; Rieters Miss Gertrude, 584 lbs., 4 yrs.; Raleigh's Meridale Matte, 555 lbs., 6 yrs.; Irene Dew Drop, 530 lbs., 2 yrs.; Lulies Coomassie, 441 lbs., 5 yrs.; Smith's Katy, 440.9 lbs., 6 yrs.; Brown Irmalie, 440.9 lbs., 4 yrs.; Pearl of Willowwood, 378 lbs., 2 yrs.; Dot of Willowwood, 350.6 lbs., 2 yrs.; Bonnie of Willowwood, 350.5 lbs.; Emma of Belevue, 340 lbs.; Elodine B., 324.1 lbs.

SWINE BREEDERS AND STOCK.

H. E. Boudier of Napa recently sold a Duroc boar to Messrs. Chas. Schnepfe and Frank McCullough of Dunnigan.

T. B. Spalding of Turlock has imported two Poland China sows and a "magnificent" boar from Iowa. The boar is sired by Champion Big Ben and out of an A Wonder dam.

Haden Smith of Woodland has sold 1 boar and 1 gilt to Frank Gilloon of Shasta county and service boars to Miss Park of Santa Barbara and F. E. Harcourt, Delano. This makes 53 head sold in the six months ending Jul. 1.

A. B. Humphrey of Escalon has traded a Grand Leader 2nd sow pig to Frank Steel of Grant's Pass, Ore-

structed to wrap wet sacks around their cream cans. Those on the first did not. Of the 18 cans showing temperatures above 70 degrees when picked up, 12 were on the early morning route.

gon for a sow pig sired by Laurel Champion, said to be the sire of more first prize Berkshires than any boar in the Northwest.

SHEEP, HORSES, BEEF.

A carload of three-year steers were sold recently by Devaney & Hayes of Midway at \$90 each.

Thirty-eight mules were burned to death in a barn at Chowchilla July 6. No insurance.

Henry Wheatley of Napa has sold a registered Shire stallion and two mares to M. C. Allen of National City.

Alfalfa hay fed to steers by the Tenn. Expt. Sta. proved worth \$14.20 per ton besides the manure which contained most of the fertilizing value of the hay.

W. R. Madden of Suisun has contracted in Montana for several registered 7 months Hereford calves to be delivered in November. He could not buy 2-year-olds.

Mrs. F. A. Mecham of Petaluma writes that they are nearly sold out of Shropshires, having recently sold 100 purebreds to J. S. Garnet of Wil-lows. They still have plenty of Merinos.

J. W. Marshall and Wilbur Eibe of Dixon have rented the Muzzy ranch near Elmira consisting of 4600 acres grazing land. They bought the 2500 sheep on it, the deal involving \$25,000.

The Texas Boys' Baby Beef Club has over 1200 members. Last March 300 boy feeders of pigs and baby beeves gathered at Ft. Worth Nat'l Feeders' and Breeders' Show to ex-

LIVESTOCK DIRECTORY.

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SWINE.

BILLIKEN HERD OF IMPROVED CHESTER WHITES—The kind that makes the money. Pure-bred—registered—cholera immune. An extra fine lot of weaned pigs—both sexes—representing the best and most popular blood lines this breed produces. Five different sires used. Can mate up not akin. Quality combined with size. Rapid growing—early maturing. A few nice fall gilts that will be bred and ready to ship in September. Write for prices and circular. C. B. Cunningham, Mills, Sacramento County, Calif.

FOR SALE—Big-type Poland Chinas from Iowa's best herds. Big Bone, A. Wonder, Jumbo Fashion, and Smoother Price breeding. Show stuff. Gilts bred and open. Boars ready for service of finest breeding, and a fine two year-old big-bone brood sow, No. 563426, with 8 pigs two weeks old. Five sows and 3 boars, all beauty. Sire, Black Wonder, No. 235117. Sow farrows not less than 8 pigs each little and raises them all. A certain 500 per cent on investment. Dr. T. B. Spalding, importer and breeder of Big Type Poland China Swine, Turlock, Cal.

YOUNG POLAND CHINAS, LARGE TYPE—Boar IBA Wonder won first and Reserve Championship P. F. I. E., weighing 730 pounds under 2 years and in breeding condition. 60-day special—fine young sows bred to IBA Wonder at very low prices; also weanling pigs, either sex. Satisfaction, or money refunded. W. A. Young, Lodi, Cal.

REGISTERED Duroc-Jerseys—All ages. We have produced hogs weighing 240 lbs. at 7 months, at a cost of 3-10 cents per pound, including pasture, grain and upkeep of sow. If you want some of the kind it pays to raise, we would suggest that you order immediately, as our spring stock is growing rapidly. Haden Smith, Woodland, Route No. 1, Box 84D.

BIG TYPE POLAND CHINAS—The profitable money-making hog. The hog for the farmer. The real mortgage lifter. Large herd to select from. Bred sows, bred gilts, open gilts, weanlings of both sex. Boars ready for light service. Extra special prices. Geo. A. Smith, Corcoran, Cal.

REGISTERED Duroc-Jersey—Weanlings, shoats gilts and boars. Unrelated. Many of our hogs are related to the several prize-winners at Panama Exposition. This herd is undoubtedly the finest in the State. Have had as many as 19 pigs to a litter. Grange Stock & Poultry Farm, Yountville, Napa Co., Cal.

HAMPSHIRE SWINE—Both males and females from Grand Champion 700-lb. boar and Grand and Junior Champion sow. Also Guernsey bull calves from Grand Champion bull. **BELLA VISTA HERD**, J. W. Henderson, 1st National Bank Bldg., Berkeley, Cal.

REGISTERED BERKSHIRES—World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapewild Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

BARGAINS IN CHESTER WHITES—Few excellent bred gilts, \$30; sows, \$35. Service boars, \$20 and up. Weanlings, \$10. Best blood lines. Only good individuals shipped. Dallas Bache, Hollister, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

Duroc-Jerseys—Some great weanlings of both sexes by "RIVER BEND HIGH MODEL." Improve your herd by introducing this blood. **RIVER BEND FARM**, St. Helena, Cal.

FOR SALE—Fancy belted Hampshire hogs. Well belted young sows and boars registered. Prices reasonable. Ben F. Thorpe, Manager, Canfield Estate Ranches, Bonsall, California.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

REGISTERED PUREBRED BERKSHIRE PIGS—Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

DEL DAYO FARM—(Old Haggin Bottom Ranch)—Breeders of registered Berkshires. Both sexes for sale. Stephen S. Day, Box 1140, Sacramento.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

IMPERIAL STOCK FARM BERKSHIRES—Registered stock of all ages. Prices and description on application. R. J. Merrill & Son, Morgan Hill.

LAKEVIEW STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

LARGE TYPE POLAND-CHINAS—Now booking orders for Spring pigs from our Nebraska prize-winning sows. H. I. Marsh, Route A. 348, Modesto.

REGISTERED BERKSHIRES—For sale, bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Norato, Cal.

POLAND CHINAS—Young stock; either sex. Write for pedigree. Reasonable prices. Edw. A. Hall, Watsonville, Cal.

POLAND-CHINAS—250 lbs. in six months our aim. Imported sows. None better. Linn & Porter, Route A., Modesto, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

REGISTERED POLAND-CHINA SWINE—Prize-winners. Finest stock in the state. \$20 up. M. Bassett, Hanford.

REGISTERED Durocs—Herd headed by Crimson Monarch 2nd. Write for prices. J. M. De Vilbiss, Patterson, Cal.

REGISTERED IMPROVED CHESTER WHITES—Grizzly Bear Ranch, East Auburn, Cal.

REGISTERED Durocs from best Eastern blood lines. Weanlings, \$10. No culls. E. S. Southworth, Napa, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. B. Beckman, Lodi, Cal.

LARGE, QUICK MATURING registered Berkshires—Both sexes, \$10 each for weanlings. Older ones at farmer's prices. J. H. Bomberger, Modesto, Cal.

REGISTERED Durocs of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boudier & Son, Napa.

REGISTERED BERKSHIRES—Weanling pigs, \$10 each. G. A. Casey, R. 7, San Jose.

REGISTERED Durocs—All ages. One yearling boar. Satisfaction guaranteed. Frederick M. Johnson, Napa.

REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. Mikesell, Manteca.

POLAND CHINA HOGS FOR SALE—Registration papers furnished free. C. A. Cooley, Durham, Cal.

REGISTERED Durocs—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

REGISTERED Duroc-Jersey SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRE PIGS—Write or call Greenwood Ranch, Brentwood, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

POLAND CHINA HOGS—Registered. R. J. Miller, Llewellyn Ranch, Lathrop.

POLAND CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

CHAS. GOODMAN—Breeder of high-class Berkshire Swine. Williams, Cal.

REGISTERED D. I. C. Very reasonable. Geo. Magnuson, Calpella, Cal.

READAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED POLAND-CHINAS and Duroc-Jerseys. H. F. Harrold, Orland.

CURTIS Durocs of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED Durocs—All ages. Either sex. W. A. Pack, Hollister, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

REGISTERED D. I. C. SWINE—C. D. CONWAY, Ripon, Cal.

REGISTERED Durocs—H. N. Leininger, R. D. 4, Chico, Cal.

REGISTERED POLAND-CHINA HOGS—J. W. Wakefield, Acampo.

REGISTERED Duroc-Jersey SWINE—D. L. Henley, Lemoore, Cal.

POLAND-CHINA HOGS—C. A. Stove, Stockton, Cal.

BERKSHIRES—Carruthers Farms, Mayfield, Cal.

SHEEP AND GOATS.

THE BULLARD FLOCK RAMBOUILLETS—Founded 1870. Largest Merinos on Pacific Coast. The Bullard Company, Woodland, Cal.

FOR SALE—Shropshire bucks, yearlings and lambs. Individuals to carlots. Purebred but not registered. J. B. Bloom, Dixon.

FOR SALE—Choice Shropshire Buck Lambs. R. A. Holdridge, P. O. Box 282, Dixon, Cal.

KAUPKE BROS., WOODLAND, CAL.—Breeders and importers of Hampshire sheep.

BREEDER OF MERINO SHEEP—Rams for sale. J. Bidegaray, Fresno, Cal.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillet, Hanford, Cal.

BEEF CATTLE.

FAIR OAKS RANCH, WILHITS, CAL.—Young registered Shorthorn bulls for sale. Sired by Landseer 379318, grandson of Imported Villager 295884.

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Fairclays Ranch Co., 320 Sharon Bldg., San Francisco.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. E. Gable, Diamond Ranch, Esparto, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

DAIRY CATTLE.

REGISTERED HOLSTEINS—Grandsons of King Segs and of world's record cow Creamella Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

REGISTERED HOLSTEIN bull calves. Sired by Lorenza Korndyke Alcarra, whose dam made 29.75 pounds butter fat in seven days as a four-year-old. J. M. Campbell, Escalon, Cal.

REGISTERED HOLSTEINS—Sired by King Korndyke Hengerveld Ormsby 53822. From world record cows. Pleterje Maid Ormsby and Duchess Skylark Ormsby. Geo. Kunoos, Modesto, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs. butter as two-year-olds. A. A. Jenkins, Tulare.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Corra, Cal.

hibit their stock and receive instruction. The baby beebes averaged 850

DAIRY CATTLE.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

VENADERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly record. Guy H. Miller, Route 1, Modesto, Cal.

REGISTERED HOLSTEINS—Colantha Johanna Lad and Aralia De Kol breeding. Young stock for sale from A. R. O. cows. Lester A. Driver, Nicolaus, Cal.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3 lbs. cows. None better. Cheap for quality. N. H. Locke Co., Lockeford, Cal.

HOLSTEIN BULLS—Well marked, large, straight individuals. Tuberculin tested. \$100 up. Packwood Farm Herd. W. F. Mitchell, Visalia.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain Châlos young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

THE McCLLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

BULL CALVES from a grandson of Colantha Johanna Lad and from a son of King of the Pontiacs. J. W. Benoit, Route C, Modesto, Cal.

HOLSTEIN BULLS out of A. R. O. cows, sired by a son of King of the Pontiacs. Prices reasonable. J. H. Harlan Co., Woodland, Cal.

REGISTERED HOLSTEINS—32 high-grade Holstein heifers coming fresh this fall for sale. E. E. Freeman, Route B, Modesto, Cal.

TWENTY-EIGHT high grade yearling and two-year-old Holstein heifers for sale; some bred. K. W. Abbott, Milpitas, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

WILLIAMMOOR AYRSHIRES—Great records; economy. 800 head in herd. J. W. Clise, Redmond, Washington.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS Corp., Importers and Breeders, Woodland, Cal.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

COWS—30 head. Good Grade Jersey Milk Cows at \$60 each. E. H. Webb, Escondido, Cal.

REGISTERED JERSEY BULLS from register of Merit cows. D. F. Conant, R. "B," Modesto.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

BREEDERS OF A. R. O. Holstein-Friesian cattle exclusively. Dirk Dairy Farm, Lemoore.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

YOUNG REGISTERED JERSEY BULL CALVES at reasonable prices. O. J. Ames, Oakdale.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAllister & Sons, Chico, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Querin, R. 3, Box 58, Visalia, Cal.

LINWOOD FARM—Registered Holsteins and Imported Guernseys. Santa Cruz, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Mullbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes, McCoy, Oregon.

REGISTERED HOLSTEINS—Golden West Herd, D. & E. Bowles, Modesto.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Cal.

HORSES AND MULES.

HORSES—FOR SALE—30 head horses and colts; 11 head broken, 5 3-year-olds, 3 2-year-olds, 6 yearlings and 5 suckling colts. Price, \$2200, or will consider rolled barley to full amount in exchange or tractor (track layer type) to \$1,500; balance cash. Box 128, Lancaster, Cal.

REGISTERED SHIRES—Black Hawk Stock Farm Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

MISCELLANEOUS.

CROLEY'S CALF FEED with skim-milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc. 631-637 Brannan St., San Francisco.

D. O. LIVELY, 216 Hobart Building, San Francisco, buys and sells live stock—any kind—any quantity.

DUROCS AND GUERNSEY BULL CALVES—Gilt bred to 900-lb. boar. Ed. E. Johnson, Turlock, Cal.

DOGS.

AN OPPORTUNITY to purchase thoroughbred Collies. Having a greater number of thoroughbred Scotch Collies than I can accommodate, am willing to sell a few one year and older at a great sacrifice. The dogs are all bred by the noted prize-winners of the BROWNDALE KENNELS, Redwood City.

pounds on hoof and dressed 60.8 per cent.

LIVESTOCK IN GENERAL.

The soldier boys on the State Fair grounds put in a complete sewer system in one day. This has been a crying need these many years.

A score of searchlights on top of the State Fair grandstands used to light the militia camp, may be left as a permanent feature.

Sonoma and Marin Agricultural District Fair at Santa Rosa Aug. 7 to 13 inclusive, instead of Aug. 7-12 as announced last week.

"The Stanislaus Livestock Show and Exposition" was tentatively dated for Sept. 16-19 at a meeting in Modesto June 28. Livestock exhibitors are assured of comfortable quarters for stock and suitable premiums.

Prices to producers of hogs, cattle, sheep, and chickens in U. S. increased two-tenths per cent from May 15 to June 15. On the latter date prices of these meat animals averaged about 16.7 per cent higher than a year before; 10.7 per cent higher than two years before and 19.2 per cent higher than the average of the past six years on June 15.

RIO VISTA TO HAVE COLT AND HORSE SHOW.

We are advised by E. W. Westgate, president of the Rio Vista Horse Show and Stock Association, that everything in connection with the second annual horse and colt show is in first-class shape. The supervisors of Solano county have donated \$500 for the show this year, and liberal premiums will result. Cattle, sheep, and hogs will be added attractions this year, but the colt and horse show will be featured. The California Stallion Registration Board has offered a prize of \$50 for the best stallion and three of his get which is expected to bring out a number of entries. Premium lists will be ready for distribution in a short time.

TO INAUGURATE MAIL BIDS AT AUCTION.

[Written for Pacific Rural Press.]

A distinctly novel feature of Carruthers Farms' Berkshire sale is brought out in the announcement of Mr. Carruthers that he has provided for mail bids by securing the co-operation of the following representatives of the swine industry: Prof. J. I. Thompson, Sect'y, California Swine Breeders' Ass'n; W. S. Guilford, Sect'y Western American Berkshire Breeders' Ass'n; and J. L. Thatcher, representative American Berkshire Congress.

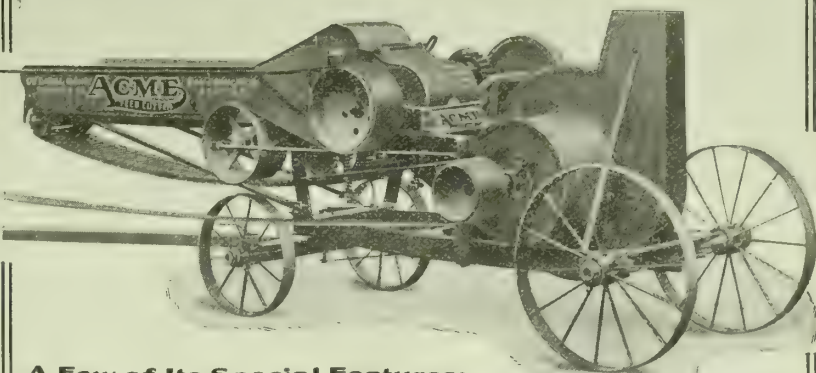
In the Eastern auction sale, distant buyers are always afforded this convenience; but this is the first time prominent breeders have been secured for this service in a California swine sale; and as a result, many who live at too great a distance to attend personally, will doubtless pick their animals from the catalogs and depend upon the above well known Berkshire judges to do the buying.

That the sale will be different in quality of offering as well as in manner of handling is readily agreed upon by all who have seen the offering and their pedigrees.

Included in the lot are three young show herds consisting of three sows and a boar that have been purposely selected because of their outstanding individuality and breeding. These should be eagerly bid on for foundation purposes. Then there are two young sows, Mayfield Lady and Mayfield Lady 2nd which are considered by Prof. Thompson to be the best sows bred on Carruthers Farms.

Mr. Carruthers himself considers the young boar Ames Rival 119th the top boar of the offering; and without question he is one of the finest young prospects in the State. Another one which Mr. Carruthers ranks as among the best is the sow Rookwood Laurel 24th, a young sow that will weigh over 400 pounds by sale day.

The Light Running ACME FEED CUTTER and SILO FILLER Built in Seven Sizes



A Few of Its Special Features:

All Steel Frame	Triple Frame Construction	Low Feed Table	Positive Safety Device
Malleable Knife Head	Accurate Knife Adjustment	Automatic Feeding Device	
Center Hung Blower	Six Arm Blower Fan	Reversible Feed Rollers	
Independent Control of Blower and Cutter Head Spread			

THE ONLY MACHINE WITH THE ANGLE CIRCLE SHEARING CUT,

which produces the "better quality" fine, uniform ensilage the dairyman and stock raiser are looking for. Built on sound scientific principles, every one based on actual tests. Give it any ensilage cutting test you know of. It will make good under every conceivable condition of actual service. Go where you will. Investigate thoroughly. You'll find more real, downright quality, point for point, in the Acme than in any other.

The Acme Alfalfa Meal Attachment

can be fitted to all sizes of Acme Feed Cutters. This attachment will enable the making of an excellent grade of Alfalfa Meal from alfalfa hay at a cost not exceeding that for baling.

CUT OUT THE MILL FEED EXPENSE BILL

By Feeding Silage and Alfalfa Meal Made with an Acme Cutter.

Ideal Green Feed Silos.

Alpha Engines.

DE LAVAL DAIRY SUPPLY CO.

SAN FRANCISCO,

Everything for the Dairy.

SEATTLE.

Berkshires You'll Like At Carruthers Farms First Annual Sale MAYFIELD, CAL., AUGUST 2

The Greatest Sale

of
RIVAL'S CHAMPION BEST
BERKSHIRES.

47 HEAD

BRED AND OPEN SOWS.
BRED AND OPEN GILTS.
SERVICE BOARS.

We feel sure you'll like this grand lot of Berkshires because they are the TOPS from over 200 head we have had to pick from, and **40 OF THEM ARE OF RIVAL'S CHAMPION BEST BREEDING.**

We realize that in making this offering we are cutting deep into our future breeding herd, but we are determined to make our annual auction sale

An Outstanding Berkshire Event

If you are in the market for a Herd Sire, a Foundation Herd of Sows, or Additions to Your Present Herd, don't fail to send for our catalog containing descriptions and pedigrees of stock to be sold.

Address,

Col. W. H. Hord, Auctioneer,
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Registered DUROC JERSEYS

Service Boars from Prize-Winning Stock are money makers.

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NOTICE!

Registered Poland China Hogs, I am Having decided to deal exclusively in offering my entire herd of

REGISTERED HOLSTEIN COWS,

HEIFERS, BULL AND CALVES.

Stock is excellent and my price is right.

Write or call and see me.

OTIS L. LINN, Rt. A.

Modesto, California

Successful Co-operative Creamery.

[Written for Pacific Rural Press.]

One of the most successful co-operative marketing undertakings established during the past couple of years is the Petaluma Co-operative Creamery located in Petaluma and managed by W. B. Hopkins.

This concern was organized by the dairymen of that vicinity about two and a half years ago with a capital stock of \$25,000, of which \$22,500 has now been paid in on 4500 cows.

Altogether there are 5,000 shares in the corporation. At the present time there are 91 stockholders, each of whom is a dairyman and each stockholder holding one \$5 share of stock for each cow milked.

No one but a dairyman has ever been allowed to become a shareholder; and when one of these goes out of business the company buys back the stock at its par value, thus insuring the concern against possible speculators with outside interests.

Each member is paid for his cream on a butterfat basis, receiving a higher premium over the San Francisco quotation than competitors will pay, all cream being delivered by the dairymen themselves. Those who deliver three times a week are paid a little more than those delivering but twice a week.

Each member is provided with a cream cooler; and by frequent visits from the manager, the cream arrives in unusually good condition. The present system of grading is not, however, entirely fair, as it sometimes happens that a dairyman who takes particularly good care of his cream is not so situated that his cream can be delivered three times a week, while one who is less particular, but closer to the creamery, secures the top price because he makes more frequent deliveries.

Besides the additional premium over the San Francisco butter quotation, stockholders receive a bonus of all moneys over and above interest on investment, depreciation, etc. For the first six months of the present year this bonus has amounted to three-quarters cent a pound for all fat delivered. An annual dividend of six per cent on all the stock has always been paid, thus making a good return possible on the original investment.

Mr. Hopkins states that during the present year, they will turn out approximately 750,000 pounds of butter, which amount would have been larger except for unfavorable feed conditions. The larger portion of this butter is sold through a San Francisco commission house which has contracted all the output except that sold locally. Only pasteurized cream is used; and with the quality of cream received, it is possible to turn out a high grade of butter at all times.

PROSPECTS FOR 1916 STATE FAIR.

[Written for Pacific Rural Press.]

With \$5,000 additional premium money and a breeding fraternity that has been greatly enlarged since the 1914 State Fair, it seems certain that the coming State Fair at Sacramento, September 2 to 9, inclusive, will outshine all other livestock exhibitions staged in the State in the

Reports from all parts of the West tell of breeders who will make their initial showing at Sacramento this year. Present prospects are that the swine show will draw more new breeders than any other division, because of the enormous number of new exhibitors, together with the auction sale and futurity contests that will be held during fair week.

Dairy cattle will again take the lead in the cattle divisions, all of the prominent breeders having signified their intention to come out with strong herd shows. That the show will draw breeders from the Northwest is also certain, the impression gained by northern breeders at the P. P. I. E. last year evidently having been good.

The renewed interest in beef breeding is evidenced by the announcement of several new breeders that they will be out with show herds imported from the East since the 1914 State Fair was held.

Horses and sheep promise to be equally as good a show as anything staged in recent years, and better in some classes.

As entries for all classes of livestock close August 2, those expecting to exhibit should write for premium list and application blanks at once, addressing their letters to Chas. W. Paine, State Fair Grounds, Sacramento.

FALL COLT SHOW.

[Written for Pacific Rural Press.]

The movement through the country today is not for more horses, but for better ones; and whatever the future demand may be, the man raising the better class of horse will receive the better price.

Such is the logic of those most interested in the business of horse-breeding; and it is to encourage this belief that the colt show has come into prominence through the Middle West, in recent years.

Last year two of these shows were held in California, one at Rio Vista and one at Livermore. Both were considered highly beneficial in their respective districts. Both will be held again this fall, according to advices just received.

These shows are usually held entirely separate from county fairs, but could be profitably incorporated with such events. There are various ways of securing the necessary funds. At both Rio Vista and Livermore the merchants contribute to the prize fund.

In Minnesota one show is financed by the stallion owners, each giving \$25 in cash prizes, to be divided among the colts sired by his stallion. Another plan is to have the county horse breeders' association or the various farmers' clubs contribute sufficient money to finance the show; still another scheme is for the local bank or banks to furnish the money for premiums and other expenses.

Competent judges can probably best be obtained by taking up the matter with the animal husbandry division of the State agricultural college or with the stallion registration board. Either of these bodies probably will be willing to co-operate with the local committee and furnish efficient judges for the show.

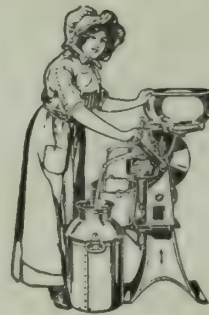
One of these shows could be profit-

Hot Weather

the season a

DE LAVAL SEPARATOR

saves most over
any other separator
or skimming system



IT'S A GREAT MISTAKE FOR any dairy farmer without a separator or using an inferior machine to put off the purchase of a De Laval Cream Separator in the summer months.

GREAT AS ARE THE ADVANTAGES of the De Laval over all other separators, as well as over any gravity setting system, at every season of the year, they are even greater during the mid-summer season than at any other time.

THIS IS BECAUSE HOT WEATHER conditions occasion greatest butter-fat losses with gravity setting and render it most difficult to maintain quality of product with any gravity system or unsanitary separator, while, moreover, the quantity of milk is usually greatest, and any loss in either quantity or quality of product means more.

THEN THERE IS THE GREAT saving in time and labor with the simple, easy running, easily

cleaned, large capacity De Laval machines over all other methods or separators, which naturally counts for most at this time of the year.

HENCE THE GREAT MISTAKE of putting off the purchase of a De Laval Cream Separator in summer, whether you already have a poor machine or none at all, and every dairy farmer should keep in mind not only that a De Laval will pay for itself by next spring but may, if desired, be bought on such liberal terms as to actually save its own cost while being paid for.

EVERY CLAIM THUS MADE IS subject to easy demonstration, and every De Laval local agent is glad of the opportunity to prove these claims to you, in your own dairy, without cost or obligation on your part.

IF YOU DON'T KNOW THE nearest De Laval agent, please simply write the nearest main office as below.

De Laval Dairy Supply Co.

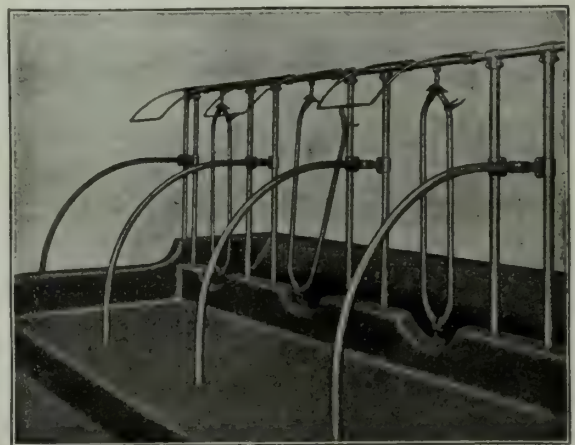
LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST.

We specialize in Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Send for special catalog.

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HOPLAND STOCK FARM REGISTERED SHORTHORN BULLS

REGISTERED BERKSHIRES (Boars, Bred Sows and Glts)
HERD BOAR, ROYAL POINTER 2nd, 197092, First Prize
Senior Yearling, P. P. I. E.

2 REGISTERED HOLSTEIN BULLS from High-Testing Cows.

SAN FRANCISCO OFFICE.

1210 FLOOD BLDG.

Mr. Dairyman or Breeder---

Do you want to improve the butter-fat output of your herd? If so, I have just the bull you want.

Pietertje Cornucopia Creamelle

His dam on her first test made a record of nearly

**25 Pounds, Testing
4.7 per cent.**

He is just ready for service and just the sire for your herd.

Write, or come and see him.

F. STENZEL

Breeder of Holsteins.
SAN LORENZO, CALIF.

ASK YOUR DEALER FOR C & S AXLE GREASE

C. & S. is the highest grade of Axle Grease manufactured. Do not confuse it with grease made of crude petroleum.

C. & S. has created the standard on the Pacific Coast for quality grease:

WHITTIER-COBURN COMPANY
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Tagus Ranch

BREEDERS OF PUREBRED

**Holstein Cattle
Polled Angus Cattle
Duroc Jersey Hogs**

Tagus Switch, Tulare Co., Cal.

Shorthorn Bulls and

: : Heifers : :

On April 21st we arrived from Missouri with a carload of choice registered Bulls and Heifers.

INSPECTION INVITED.

H. L. & E. H. MURPHY,
Perkins, Sacramento Co., Cal.

FOR SALE

850 one and two-year-old
SHROPSHIRE RAMS

By Imported Canadian Sires and Pure-bred Ewes.

For further particulars
call or address:

C. E. Barnhart, Suisun, Cal.

HORSE OWNERS! USE

**CAUSTIC
BALSAM.**

A safe, speedy and positive cure. The safest, most BLISTER ever used. Removes all bunions from Horses. Impossible to produce scar or blemish. Send for descriptive circular.

THE LAWRENCE-WILLIAMS CO., Cleveland, O.

BLAKE, MOFFITT & TOWNE

Dealers
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PAPER
37 FIRST STREET, SAN FRANCISCO
Blake, Moffitt & Towne, Los Angeles
Blake, McFall & Co., Portland, Oregon

ably held in every locality of the State where two or more stallions are in service.

CALIFORNIA POLLED ANGUS CATTLE.

To the Editor: I should like to know all about the Polled Angus breed of cattle, their size in comparison with other breeds, their maturing qualities, and adaptability to foothill conditions.—Subscriber, Sonora.

[Answered by Prof. Gordon F. True, University Farm, Davis.]

[The polled Aberdeen Angus breed are black, hornless cattle originating in Scotland. While in appearance they seem smaller than Shorthorns and Herefords, they attain practically the same weights. The breed is characterized by early maturity, high dressing percentage and such a distribution of fat and lean meat in the carcass as to make a high-class butcher's beast. In thirteen out of fourteen times, Aberdeen Angus carcasses have won first place at the International Live Stock Show at Chicago, while ten out of fourteen championships for best steer in the show have gone to this breed.]

There are two herds of this breed in the foothill regions of California. One of these herds, kept in fenced pastures, I have seen; and they looked as well as animals of any breed. Some of the older stockmen of the State credit the Angus with getting wilder on the range than Herefords or Shorthorns. They have been credited with being shy breeders, but when fenced away from horned cattle they are as prolific as any and no harder to handle. They are probably less profitable under conditions of extreme hardship on the range than Herefords or their close relations, the Galloways.]

WHEN TO FEED PIGS.

To the Editor: I have a sow which killed her last litter of pigs by lying on them. I want to take the little pigs away this time, and keep them in a box near her pen, only allowing them to be with her at feeding time. How often should they be fed?—L. C. L., Brawley.

[Feed every three hours for the first two or three days, or longer if the pigs do not seem able to take care of themselves. If you will cut off the pigs' teeth with a small pair of nippers as soon as born, and provide a guard rail in the farrowing house or pen, there will be less likelihood of the sow lying on them. Most sows do not roll around badly unless irritated. Oftentimes the little fellows bite her teats so hard she cannot stand it. The guard rail also protects them; as it leaves a space around the edge of the building large enough for them to crawl into.—Editors.]

DAIRY COW COMPETITION.

The University of Cal. Circular announcing the Dairy Cow Competition goes to press this week, but will not be ready for distribution until August 1.

The offspring of pampered, overfed, under-exercised mares are most likely to succumb to navel and joint disease, leaking navel, or digestive disturbances, such as have caused great mortality of foals in Wisconsin this spring, according to Wis. Col. Agr.



SANTA ANITA RANCHO

ANOAKIA BREEDING FARM



HOLSTEIN CATTLE The breeding herd of registered Holstein cattle at Santa Anita Rancho is made up of individuals selected strictly upon their merits as producers, high individual quality, and production and proven transmitting power of their ancestors. **PRINCE GELSCHER WALKER**, whose combination of breeding, individuality, and the production of his daughters stamp him as one of the greatest young sires of breed.

Females in the herd are making large official record as rapidly as they freshen, and the herd is being developed to become one of the largest groups of high producers in the West.

At present a few bull calves are offered for sale. These are straight, well-marked youngsters, bred right, and priced moderately.

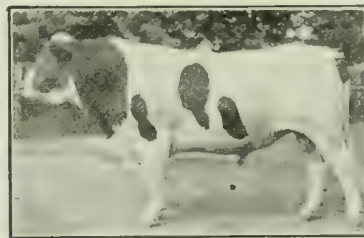
BERKSHIRE HOGS The breeding herd of registered Berkshires has been carefully selected and represents the blood lines that are in the very first rank of the breed. The herd is headed by **KINTYRE LAIRD**, first prize junior yearling and reserve senior champion boar at Panama-Pacific Exposition. He is an unusually good type, and comes from a family noted for uniformity and prize-winning quality.

A few boar pigs are offered at this time.

POLAND-CHINA HOGS In founding the herd of registered Poland-Chinas at Santa Anita Rancho, the choicest individuals of the most noted prize-winning families in the West were drawn upon and for uniformity, desirable size and quality the herd is unexcelled in the West. At the head of the herd is **BANKER'S BOY**, junior champion and reserve grand champion at P. P. I. E.

Anita M. Baldwin W. H. TAYLOR, Superintendent.
Santa Anita, Cal.

GRANDSONS OF TILLY ALCARTRA



Prince Alcartra Korndyke,
Best bred son of Tilly Alcartra.

Our supply of these young sires is always limited, but we have a few now which we are offering at very reasonable prices.

Write us at once, or call and see the herd.

J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

A Jersey Opportunity

Having disposed of my farm, will sell one-half of my herd of 30 Jersey cows and 20 heifers, 10 bull calves, and 2 bulls. Most of the cows are in the Register of Merit class and ten will make 500 pounds or better.

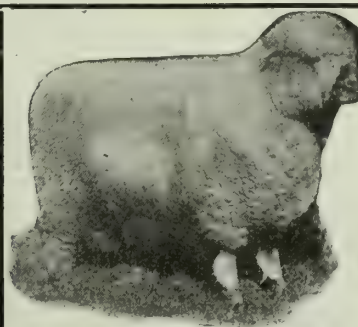
Here is an opportunity to buy richly bred Registered Jersey cows with good records, and daughters of high record cows.

If you want good stock at reasonable prices, come and see this stock.

Willowood Jersey Farm

C. G. McFarland, Prop.

Tulare, Cal.



San Ramon Shropshires WINNINGS P. P. I. E., 1915.

Aged Ram, First and Second. Yearling Ram, First. Ram Lamb, First, Second and Third. Champion Ram. Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of Sire, First. Pen of three Lambs, bred by Exhibitor, First and Fourth. Pen of four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock, one year old, bred by Exhibitor, First. Flock under one year First. Flock under one year, bred by Exhibitor, First. Produce of Ewe, First, Second and Third. Premier Championship for Breeder. Premier Championship for Exhibitor. A total including American Shropshire Specials of 15 Firsts, 9 Seconds, and 6 Championships.

PUREBRED REGISTERED RAMS AND EWES.
Individuals or Carload Lots.
BISHOP BROS., Agents.
Contra Costa County, California. SAN RAMON.

Duroc Jersey Pigs

Forty head of A No. 1 pigs, both sexes, January, February and March farrow, priced to sell, and to sell right now. All registered, well bred, well developed and guaranteed satisfactory, or money refunded. Conditions are such that we must materially reduce our herd. This is your opportunity. Details for a postal.

DIRK DAIRY FARM

Lemoore,

California.

BIG TYPE POLAND CHINAS

Gilts from Weanlings to one year old. Bred or open. Boars from weanlings to 8 months.

THE BROWNING STOCK FARM.

W. H. BROWNING, PROP.

WOODLAND, CAL.

DEVELOPING LAND AND DUROCS.

[Written for Pacific Rural Press.]

Developing red hogs and land is one of the striking things, agriculturally speaking, in Napa county at this time, it having been told the writer on a recent trip there that no less than 20 herds of purebred Duroc hogs have been founded during the past two years in the county.

Among the leaders of this red hog business is W. W. Everett, owner and manager of the River Bend Farm, comprising 240 acres a few miles from St. Helena.

A hundred acres of the land in this ranch is rich river bottom, the balance being hill land sparsely covered with timber. The latter furnishes a good deal of pasture in the spring months and part of it has been cleared and will hereafter be planted to vetch and oats, to increase the yield of spring feed.

The lower land is to be used mostly for hog feed raising; although a small acreage has been planted to vineyard, and a small orchard will be planted later.

Alfalfa and corn will be the chief crops grown, experience showing that corn will yield an average of two tons to the acre. So far only five acres have been planted to alfalfa; but during the spring months, a well was dug that has developed a 750-gallon per minute flow, and by carefully conserving this by the use of a six-inch galvanized iron pipe distributing system, 40 acres will eventually be planted to alfalfa.

Fifteen acres of this will be fenced off into three lots for pasture, 6x8

foot individual houses being used for sleeping quarters and built on runners so that they may be moved.

A lane has been built in front of these lots which extends through an adjacent field where the central farrowing house and dairy barn are to be located. This central house is to be built along the most modern lines, with creosoted blocks for the floor of the sleeping quarters. The chief reason for erecting this building is to reduce mortality in the pigs; for while the average sized litter raised this year was a trifle better than nine, the severe winter storms caused some losses and delayed proper growth.

The site selected for the runways is a gravelly, one might almost say rocky knoll, with a pronounced slope to the small creek which runs through the property, thus insuring well-drained lots in winter. This creek is another natural asset, as it supplies unlimited quantities of gravel for the concrete work which will be extensively used.

Selection is Mr. Everett's hobby in the hog lots. At the beginning he purchased females from older breeders in the State; and from these has gradually selected those nearest in type and color to his idea. While he now has 20 sows, a large percentage of these will go into the butcher pens the coming summer.

With pigs he has set the same rigid ruling; all pigs for any reason inferior, being put into the fattening pens where he believes they belong, rather than at the head of some farmer's grade herd.

Mr. Everett expects to show at the State Fair this year, and is one of the leaders of the Duroc movement in Napa county.

Veterinary Queries.

COW DOES NOT BREED.

To the Editor: A good milking cow had a calf, but I have taken her to the bull six times; and each time, a day later, she passes bloody stuff. Have washed her out twice with baking soda.—A. G., Healdsburg.

[Have your veterinarian examine this cow and prescribe a treatment.]

HORSE VOMITS AND RETCHES.

To the Editor: My horse vomits and retches after eating or drinking. Gets better for a few days, then worse. Been so for two months. Getting thin and weak but coat looks good. Feed green alfalfa exclusively. Excreta dry and hard, urine excessive. Restless, no nasal discharge, breath not offensive.—J. C. F., Alpaugh.

[This is chronic choke. Feed slops for a time.]

HORSE THIN—WORMS.

To the Editor: A three-year colt seems well but does not take on flesh. Works good, eats good in barn but stands around in pasture and is nervous. I noticed in her manure a worm 6 inches long and 1/2 inch across.—D. F. F., Lakeport.

[Give tartar emetic 1 dram, iron sulphate 1 dram, arsenious acid 5 grains, once a day for 6 days; then one quart raw linseed oil.]

SWELLING ON COW.

To the Editor: A well the size of your hand and 3/4 inch high came on my cow's foreshoulder 6 months ago. It is twice as big now and is spreading.—J. H., Ramona.

[Have this cow tested for tuberculosis.]

LIVE OAK STOCK FARM

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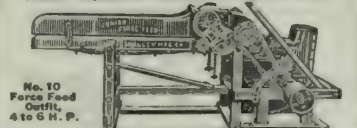
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SOME FEEDING QUESTIONS.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

The feeding question is the one on which hangs the problem of profit and loss in a larger proportion than all other questions; therefore, it is usually the one question first asked. Yet it is a question that the individual poultryman or farmer must eventually answer for himself.

What to feed depends so much on locality, and on what your fowls can pick up on range, or on what you can grow the most of and the cheapest, that it is only possible to give some few ideas that will be helpful in making a selection, in cases where all the feed must be bought.

When fowls have a good range, where they can find plenty of vegetable or grass feed, they will also find some insect life; not a great deal, as in our climate insect life is not so abundant as in a climate where summer rains prevail. If this is supplemented with a feed of grain at night and a pan of sour milk, the ration is both wide enough and diversified enough to bring eggs and keep the flock in good condition. If the range is bare of grass, it will also be bare of insect life, and it affords nothing but room to roam around. In a case like this the feed should cover all the needs of the flock and be served as to yarded fowls.

The feed should include vegetable and animal protein, mineral and fat-forming foods. The grain that can be bought cheapest according to locality is usually the best to buy. The soy bean in any quantity is never harmful; and it is rich in vegetable protein. Cottonseed meal is also rich in vegetable protein, but fed in any quantity it is very hard to digest, and is also very constipating. So here are two articles of about equal value in protein, almost equal in price in any locality in the state, yet of unequal merit as an every-day article of food. Cottonseed meal can be fed in a ten per cent proportion of all mash materials used, perhaps without causing much trouble from indigestion, but soy bean meal can be used in a twenty per cent proportion with an assurance of it doing the hens good without any harm.

Alfalfa meal, if fresh alfalfa cannot be had, is high in vegetable protein. While it is better scalded or moistened, it can be fed dry in mash just as bran is, but owing to bulk should never exceed ten per cent of other ingredients. Beef scrap, blood meal, or meat meal must also form a part of all mash; usually fifteen per cent of beef scrap will be found a fair proportion. Blood meal ranges higher in protein and hens should not be fed over ten per cent, and less if it causes any disturbance in the digestive tract. Meat meal is a less concentrated form of animal food and can safely be fed in the proportion of twenty per cent. But all these things must be watched to see if they are causing any disturbance. The way to tell is to watch the droppings; if fowls are perfectly healthy and their feed is rightly proportioned the droppings will always be cylindrical in form

and be tipped with white. There is no exception to this rule. If the droppings change ever so little, to just that amount is the fowl out of proper condition.

Feed whatever grains you are able to get easiest and cheapest; and if you supply the animal and vegetable food in any proper ratio your flock will be healthy and profitable.

Hens Lose Control of Limbs.—My hens seem to lose control of their limbs as if their backs were broken. They refuse to eat and gradually wither away. Some seem to have blind staggers and have to be killed. My half-grown chickens have become afflicted now. The hens have laid well since January.—J. W. B., Fillmore.

[Your flock must have access to something poisonous. The symptoms are those of poisoning from ergot, usually found in the form of grain smut. Look well to your feed; also clean up your premises, as the chickens may be picking it up somewhere. Give all of them a good dose of castor oil in a little mash for the evening meal, then next day make a strong tea of white oak bark and let all drink of it. You can buy white oak bark in packages at any drug store. Remove all old paint cans and other rubbish from poultry yards and premises; they are all sources of danger.]

Telling Age of Hens.—How can you tell the difference between a one year and a two year old Leghorn hen; also how can you tell a good one from a poor one?—T. S., Boulder Creek.

[Usually the legs of a one-year hen are smooth, and should also be yellow in a Leghorn; but common Leghorn stock has been crossed with other breeds so much that the yellow leg cannot be depended on; and even the smoothness is often removed if the hen has been allowed to run in dirty yards. If they are kept clean and well fed the legs will be both clean and smooth. As to telling a good one from a poor one there are but a few that can do that by just being told. But a good hen is usually alert and active, has a bright eye and a fair-sized comb, is always after the feeder when he makes his appearance, is late to go to roost and early to rise. In fact a good Leghorn hen is as full of business as her egg is full of meat; she is an ever-present active member of the hen family that never misses anything except just while she is on the nest.

RABBITS AND COYOTES.

To the Editor: Please help us get rid of rabbits and coyotes. They are destroying grain, grass, corn, and chickens.—Desperate, Bonsall.

[Strychnine in some fresh meat near the coyotes' usual haunts will likely get them. For the rabbits, we adapt answer from "California Fruits."

Pieces of watermelon rind, cantaloupes, or other vegetable of which they are fond, may be poisoned with strychnine and scattered out of the way of poultry. The rabbit does not get far away from it. The same result can be obtained by mixing 100 pounds wheat and nine gallons of water with a pound of phosphorus, a pound of sugar and an ounce of

oil of rhodium. Heat to boiling point, let stand till morning, and stir in enough flour to make a paste. Rabbits eat it with avidity if it be scattered about.]

SHADY SUGGESTIONS FOR HOT WEATHER.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

Hot weather has surely been delayed this year; but it has to come, even though it is late, so we must use extra precautions for both old and young stock if they are to do well.

If we have natural shade we are lucky, but I have seen some very good artificial shade that answered almost as well. In these days of high prices for gunny sacks that old-time method is not to be thought of. But almost anybody can get a bundle of laths or a few limbs of trees, even though the trees are dead. Just drive four stakes into the ground, and nail a piece of old poultry wire over it, then spread the brush over that as lightly as possible. Anything that the breeze can get through is far better than a tight shade such as would be made of cloth.

Another good idea is to make a fence, either in a circle or square as convenient. Make rather small and if the fence is made from east to west, leave an opening at both ends, not necessarily very wide, because once the chickens find out they will surely make good use of it. Now along the south side lay a few limbs of light brush; and over the top from south to north open up a couple of old gunny sacks to keep sun out. If you can turn the hose on the ground once a day you have a comfortable place for your chickens that they will appreciate.

We never want to forget that very hot, dry weather is not good egg-laying weather. Hens get overheated and depressed. Then it is no use feeding for eggs, for they won't come until we provide more spring-like conditions.

Feed at Night.—By feeding at night so the hens can eat as soon as they get out, and providing shade during the hottest part of the day, we come nearer to spring. Always see that the water is changed often, especially for small chicks, as they will not drink enough warm, dirty water. Water is just as much a necessity for the growth of chicks as it is for laying hens. And we all know that an egg is very largely composed of water; therefore, if hens are deprived of water, the egg supply will be cut off that much.

Cut out most of the corn or other heating feed. Cut green alfalfa mixed with the mash every day is a great help in keeping the hens cool and in laying condition. Remember, the blood must be kept cool if we are going to get eggs during hot, sizzling weather; keep the blood cool by feeding food that is not fat producing. Alfalfa or good tender cabbage leaves have this cooling effect on the hens; and will be productive of eggs. Of course you will have to give meat, for vegetable protein alone does not fill the bill. Where milk can be had, it is the greatest help, filling the bill as an animal food and vegetable, too, in a measure.

Above all things, remember that neither young nor old fowls can be

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healthy and do well if tormented with lice and mites, which grow and thrive so abundantly during these hot days.

October 19, Kings County Poland China Breeders' Ass'n, Poland Chinas, Hanford.

The Home Circle Page of the Pacific Rural Press

MRS. BEST'S LETTER.

My dear Friends:

One of the most interesting places I have visited in my southern trip was a country home. This home was not pretentious, but it had trees around the house and a lawn in front with verbenas bordering the roadway, which gave a very pleasing effect to the passerby. Across the front of the house ran a porch which had been entirely screened, and on this beautiful out-door room there was a big couch with denim covering, comfortable chairs and the sewing machine and mending basket. I thought it was certainly an ideal place for the man of the house to rest for a few moments after meals, and a useful spot for the small children to sleep and the mother to mend. One end was sunny and there hung a slat curtain that could be raised or lowered at will.

This place had water piped into the house and a tank for hot water in the kitchen connected with the range. This made it possible for the wife to use a dish drier, which is a wire tray on which the dishes are placed after washing. They must then be well rinsed with hot water, and then allowed to dry, when they are ready for use again. She told me that there was not only time saved by not wiping dishes, but much washing of dish towels.

The morning before I arrived she had been ironing, and across the back porch had been hung a heavy cord to which were suspended by the snap clothespins all heavy garments that were not thoroughly dry; this let them dry in shape before they needed to be folded and put away.

After the noon-day meal had been cleared away, we went out to look at the yard and garden. The children had a very attractive playhouse made of posts set in the ground with a roof of palm leaves. The sides had quick growing vines, so the rays of the sun were tempered. There was a swing there and small seats that the father had made for them and all the playthings that were in constant use. The driveway at the side of the house had been oiled and graveled to try and keep down the dust during the summer and the mud during the winter months.

The windows on the west of the house had lattice work frames curving from a few feet over the glass to several feet from the house on the ground. These provided a trellis for vines which sheltered from the sun without obstructing the breeze.

Nearly all of these little comforts for the wife and family were the work of the man of the house, so the expense connected with them was not great as compared with the help they were. Devotedly,

Rosabella Best.

DYEING WAISTS AT HOME.

If you have an old crepe-de-chine waist that has grown yellow from washing, try making it a delicate green by adding to your rinse water a piece of green crepe paper. A little experimenting will enable you to decide whether the water has color enough in it.

APRICOT AND PINEAPPLE MARMALADE.

Stone 10 pounds large apricots and cook slowly until soft. When almost done, add 8 pounds sugar and let simmer for 3 hours. Take a large can of sliced pineapple, cut into small bits, add to apricots, and cook until thick. Can in jars or pour into jelly glasses. A few broken walnut meats may be added. It is claimed that dried apricots can be prepared in this same way and make a very good marmalade.

FASHION NOTES.

The new washable corset will prove a boon to the woman who lives and works in the hot districts. It is claimed they can be washed just like any undergarment.

Rubberized rompers are being shown in one of the big department stores. These are just like other rompers only that the water does not penetrate them and are fine for the little people who are wading either at the beach or in streams.

At last, the long threatened has arrived. Hoop skirts made of net, with three rows of feather boning are being shown in the stores.

Towel sets, consisting of bath towel and wash cloth of corresponding pattern are among the new novelties.

Everything in blouses is still long-sleeved although the necks are nearly all low.

Cording is a very popular trimming and you can make the cord you wish to cover any size by taking twine and twisting it and doubling back until the required thickness is arrived at. An easy way to twist the cord is to fasten one end to the bobbin wind on the sewing machine and have the other end held tight and run the machine.

There is a new stitch for trimming garments that is very effective and is really not difficult to do. For the bobbin, instead of thread, use an embroidery silk of the desired color and then stitch on the wrong side of the garment, so that the heavy bobbin thread makes the stitching.

CAULIFLOWER.

Cauliflower will not seem like the aristocratic vegetable it purports to be unless it is carefully cleaned and cooked with care. Even then it will not equal "mock cauliflower" in delicacy unless it is properly dressed and seasoned.

Creamed Cauliflower I.—Trim the outside leaves off a nice head of cauliflower, put on to boil in slightly salted water to which has been added a little milk. Boil thirty to thirty-five minutes, drain, and make a cream sauce to pour over it as follows: Put in a saucepan one tablespoon of butter, let this melt and stir in a tablespoon of flour. When hot pour in one and a half cups of milk, stir briskly and boil two or three minutes, now add a little salt and grate a little nutmeg over it.

PRESENCE OF ADENOIDS.

One of the distinguishing features of the presence of adenoids in children is mouth breathing and the throwing of the head backward in sleep.

THE ELEMENTS OF MAN.

During the hearing of a case involving a small domestic dispute the judge declared that "a patriot is a man who refuses to hook up his wife's lingerie waists. And a martyr," he went on, "is one who tries and fails; while a hero tries and succeeds."

"Then how would you define a coward?" asked the lawyer, who was a bit of a wag himself.

"Oh, a coward," replied the judge, "is a man who stays single so he won't have to try."

VARNISH STAINS.

Editor Home Circle: Would you kindly tell me what would take varnish out cotton cloth?—M. E. W., Corning.

Soaking in lye water, followed by washing is good for overalls, but would not do for fine fabrics.

CARE OF THE TEETH.

The preservation of the teeth rests largely with the care that is given them, but of late, many eminent physicians are claiming that many diseases, heart trouble and rheumatism most particularly, are aggravated by neglecting the care of the teeth and throat.

GLASS STAINS.

If your glass dishes have been used for flowers and become stained with water, use muriatic acid on a small piece of cloth to remove the stains. This is a poison and must be handled carefully and kept out of the reach of children.

SCOURING KNIVES.

The cleaning of steel knives is made much easier if you have scouring brick in a small box with one end removed so that it can be hung up. Use a cork instead of a cloth to scour with.

WIRE TRAYS.

Wire trays are a great convenience for placing hot cake or bread on. The supports which lift the tray from the table allow the passage of air and prevent sweating.

At a certain military hospital a dear old lady could never see that the Tommies objected to her fussing round, and none of the staff had the heart to enlighten her ignorance. "I didn't know you had Russian soldiers here," she said one day. "Russian? We don't," replied the official. "What do you mean?" "At least one is Russian," insisted the old lady. "He told me his name." "Did he?" "Yes, I was asking them about their wounds and what their names were, and this one replied, 'Obuzzoff!' "—Pearson's Weekly.

FLORAL DEPARTMENT.

(By Geo. N. Tyler.)

In my last article on carnations there was a typographical error: use a 2½ inch potful of bone meal, instead of a 12½ inch potful, across a four-foot bench. As soon as the plants begin to send up flower shoots, I give supports; I stretch wire the full length of the benches, about six inches above the soil; and every eight feet, tack a wooden strip across the bench to hold the wires in place. The wires are run between the plants. I then run string across the benches between the plants, taking a turn around each wire. I then put a second support twelve inches above the first or eighteen inches above the bench. These supports insure straight stems and allow the air to circulate around the plants. I do not do any feeding till March, as it is liable to cause the flowers to burst the calyx and the result is a crop of split flowers. In March, I give a light shading on the glass. In the meantime I ventilate night and day. I do not use heat of any kind; but where I do not get a lot of flowers in the winter months I get better and larger flowers later. And the cuttings that I get from the plants make much stronger and more vigorous plants the following year. I take cuttings from only the most vigorous and strongest plants and those that are the most prolific in bloom. In this way I increase the vigor of my stock and in a few years I have a new type of carnation, cold resisting and winter blooming. This is the Burbank system of selection. Instead of a variety running out in a few years from forcing and over-production of cuttings, it gradually increases in vigor.

Disease-free Plants.—Out of five thousand plants that I handled last fall I lost just one from disease, while most of the growers lose ten to fifty per cent of the transplanted stock. I owe my success to the lime-sulphur mixture that I dip plants into when moving them from the field and keeping them free from aphids and other pests.

The aphids I smoke once a week with tobacco dust. I make little piles on the ground in two or three places in the house, pour a few drops of coal oil on them, light them and they burn most all night. For red spider I spray with the lime-sulphur mixture that is described in a former article. I have tried many remedies for red spider, but this mixture that I use does not burn the flowers or cause them to get sleepy like other mixtures of sulphur, and the lime causes the sulphur to stick on the plants and give out the fumes that kill the young spiders as fast as they hatch out. Two applications a week apart will rid a house that is badly infested and it dries up all diseased leaves. The new growth comes clean and green. Water will not wash it off. You can spray any time with clear water; and afterwards the fumes of sulphur can be detected in the house.

Worn table cloth makes good ticking for cushions.

WHEN ELLIE WENT TO RIDE WITH GRANDPA.

"Oh, are you going to the post-office, grandpa?" cried Ellie, the very first morning after she reached the parsonage in Littleton for her summer's visit. "May I go too? May I, Grandpa?"

"Run in and get your sunbonnet, Ellie, for I'm ready to go," said Grandpa. Of course she could go; that question needed no answer. How could Grandpa ever think of going to town without a little girl to hold the reins for him when he wanted to think about his sermon, or to remind him that Grandma wanted him to get oolong tea this time, not just tea?

Rex was used to these trips back and forth, and trotted as fast as though Ellie were not a whole year bigger than last summer. And the high, old-fashioned buggy rattled just as noisily as ever.

It was Tuesday morning, and Grandpa didn't want to think about the sermon which he had preached on the Sabbath before, and he wasn't ready to begin thinking about next Sabbath's sermon quite yet, so Ellie could talk all she wanted to, and she and Grandpa sang "My days are gliding swiftly by" and "I'm a pilgrim" where there weren't any houses along the road. Grandpa pointed out to her the compass-plant, which would always tell her which way was north, and showed her how all the tall sunflowers were saying good-morning to the sun.

Ellie was so glad that the post-

office had been moved three miles way from the parsonage long before she was born, though Grandma always said every morning when they started off: "It's just a shame you have to take that long drive. We ought to have the post-office where it used to be."

When they stopped at the office, Ellie carefully held the reins while Grandpa went in for the mail. Rex stood just as still as though he were tied to a hitching-post, for there wasn't even one green leaf or spear of grass within reach to tempt him.

"Good-morning, Ellie," said a pleasant voice. "Have you come back to help your Grandpa drive, this summer?" And Deacon Templeton came up holding out his hand to greet the little girl. She looked anxiously at the horse, but dropped one rein and politely shook hands with the old gentleman. She almost wished she hadn't come when Mr. Clark, who kept the store where the post-office was, came out to greet her also; and she quite wished so when the two young lady clerks and the "Professor," who was buying some new pencils, although school wasn't keeping, all came out to say how-do-you-do.

"Well, Ellie, what grade are you in now?" asked Professor Allen.

"I'm in the—" Ellie was saying, when there came a funny little rush and tumble right under the buggy seat. Out scrambled Puck, Ellie's little bantam rooster, which lived with Grandpa because Ellie had to live in the city and could not keep bantams or rabbits or any of the delightful pets which she so much wanted. Up the little fellow hopped right on to the dashboard, and out came Pam, his demure little mate, and hopped up beside him. Pam kept quite still, but Puck began cackling his loudest right into the Professor's face, then crowed joyously to the whole crowd. He kept on crowing and cackling until Grandpa came hurrying out to see what was happening.

"Ha! ha! ha!" he laughed, and the whole group began to laugh too. This time Ellie quite forgot the reins. She climbed down and looked behind the leather curtain of the seat.

"O Grandpa," she cried. "O Grandpa! See here! Pam has laid an egg right under the seat!" And she triumphantly brought out a little white egg which caused all the commotion.

"Wasn't that dear of her! Pam laid it right under the seat, Grandpa,—right under the seat while we were riding." Ellie beamed upon the crowd, her timidity quite forgotten.

"I knew you were a kind-hearted man, Mr. Mason; but I didn't suppose you would carry your kindness so far as to take your poultry out for pleasure drives."

"Oh, Professor Allen," explained Ellie, "they stole the nest, you know. We didn't know they were there—really we didn't."

On the way home Grandpa had to drive, for Ellie carried Puck under one arm and Pam under the other, while in one hand she kept carefully the little white egg.

"Grandpa, this is the funniest and nicest drive I ever had," said Ellie when she was lifted down from the buggy, with her pets; "but I think next time we'd better look under the buggy seat before we start, don't you?"—A. L. Pierson, in the Churchman.

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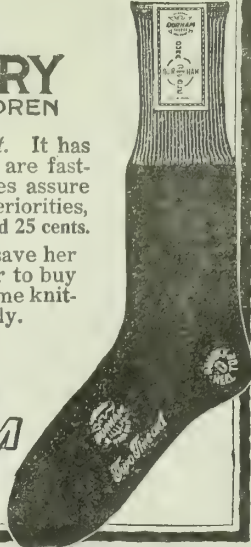
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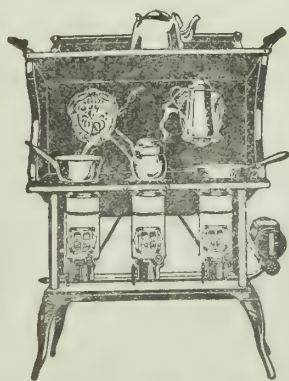
is made strongest where the wear is hardest. It has reinforced heels, soles, toes, and the tops are fastened on for keeps. The famous Durham dyes assure fast, sanitary color. With all these superiorities, Durable Durham Hosiery costs only 10, 15 and 25 cents.

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or without oven.
Also cabinet
models with
Fireless Cooking
Ovens.

San Francisco, July 12, 1916.

WHEAT.

Northern grades are entirely nominal in this market, as there is practically nothing coming in from that direction. The light supply has caused a slight advance in local offerings on the spot.

Sonora Wheat \$1.70 @ 1.72 1/2
Northern Club 1.70 @ 1.72 1/2
Calif. Club, ctl. 1.70 @ 1.72 1/2
Northern Bluestem 1.82 1/2 @ 1.85
Northern Red 1.80 @ 1.90

BARLEY.

Holders are taking quite a firm attitude as to both spot and future barley, and with a strong rail movement and prospects of better sea shipping conditions, both grades have been marked up a little.

Shipping, ctl. \$1.40 @ 1.45
Choice Feed, ctl. 1.37 1/2 @ 1.40

OATS.

New oats are coming in rather slowly, and with a light crop in many sections values show more firmness. Recleaned stock is held still higher, but there is no demand for seed yet.

Red Feed \$1.45 @ 1.50
White 1.55 @ 1.60

CORN.

Eastern yellow is quoted slightly higher, in conformity with advance in primary market. Not much movement here. The sorghum grains are steady, with fairly active demand at many outside points.

Eastern Yellow, ctl. \$1.85 @ 1.90
Milo Maize 1.40 @ 1.45
Egyptian 1.45 @ 1.50

BEANS.

Bean prices stand as last quoted throughout the list, having been practically same for two weeks. The market remains firm, with strong demand for shipment to outside markets, though the movement is limited by the closely cleaned-up condition of spot market. Stocks are light in consuming markets, and if the demand continues some further advance may occur, though in several lines values are higher than ever before. The present condition is of course temporary, and while a few early lots of new beans may bring extreme prices, larger offerings will no doubt bring a general weakening. Growers are taking a firm view, and are not disposed to sell their crops in advance. Some new small white contracts at \$5 to \$5.50 have been reported at Salinas, but local buyers who visited that district did not succeed in doing any business.

(On wharf, San Francisco.)

Bayos, per ctl. \$6.25 @ 6.50
Blackeyes 3.50 @ 3.75
Cranberry Beans 6.00 @ 6.20
Horse Beans 3.25 @ 3.40
Small Whites (south) 9.75 @ 11.00
Large Whites 9.25 @ 9.50
Pinks 6.96 @ 7.25
Limas (south) 6.50 @ 6.75
Red Kidney 8.00
Mexican Reds 5.50 @ 5.60
Tepary Beans 4.50 @ 4.75

HAY.

The local market remains in a slow and uninteresting condition, with city consuming requirements comparatively light and the trade generally showing little anxiety to buy beyond present needs. This is largely due to the difficulty of shipping during the dock strike, and uncertainty as to future. Current arrivals, however, clean up well, and growers generally holding firmly, feeling that buyers are under a misapprehension as to season's production and that better values will prevail than are now obtainable in the city market. In fact, numerous reports are received of country sales at higher figures than those quoted here. The principal movement has been of the better grades of hay, of which there is a large proportion in some nearby districts. Values already show a slight improvement here, the lower grades of wheat hay being a little stronger, while the choicer offerings of alfalfa are \$1 per ton higher.

Wheat, No. 1 \$13.00 @ 13.50
No. 2 10.00 @ 11.50

Special Deciduous Market Report.

By J. L. Nagle.

Sacramento, July 10, 1916.

The shipment of Bartlett Pears is at its height and as a large percentage of the Sacramento river growers are now moving their stock to canners at \$50.00 a ton, the Eastern shipment will be light from the middle of this week.

On account of heavy drop in the Suisun and Cordelia districts, growers were forced to pick their pears earlier than they would have done, expecting to wait until the heavy receipts from the Sacramento river were finished.

There has been a strong active demand for all varieties of Plums and peaches and this will undoubtedly continue throughout the season, or at least up until the first of September, as by that time tree fruit shipments from California will be practically completed. Very little competition has been felt to date from Eastern peaches, though the movement from Georgia averages from 100 to 150 cars a day.

California Elbertas are now moving in light supply from the San

Tame Oats 11.50 @ 15.00
Wild Oats 10.50 @ 12.50
Barley 10.50 @ 12.50
Alfalfa 10.00 @ 14.50
Stock Hay 7.50 @ 9.00
Straw, per bale25 @ .40

These quotations furnished by Nicholls-Loomis Co., Los Angeles, Friday, July 7th:

(Prices as paid to producers.)

Hay to producers, according to quality, f. o. b. Los Angeles, is quoted as follows: Prices to consumers \$1 to \$3 per ton higher, according to quantity ordered, delivery, etc. Prices per ton,:

Barley Hay \$10 @ 14
Wheat Hay 10 @ 14
Tame Oat Hay 12 @ 16
Northern Alfalfa 11 @ 13
Local Alfalfa 12 @ 15
Stock Hay 6 @ 9
Straw 5

FEEDSTUFFS.

The only change is slight advance in rolled oats, to correspond with firmness of whole grain. Rolled barley is firmer.

(Wholesale prices, per ton, carload lots, San Francisco.)

Beet pulp, per ton Nominal
Alfalfa Meal, per ton 17.50 @ 20.00
Bran, per ton 28.00 @ 29.00
Oil Cake Nominal
Cocoanut Cake or Meal 23.00 @ 25.00
Cracked Corn 40.50 @ 41.50
Middlings 35.00 @ 38.00
Rolled barley 29.00 @ 30.00
Tankage 45.00
Rolled Oats 30.00 @ 31.00

VEGETABLES.

The vegetable market has slumped badly in the last day or two, as the strike is delaying shipments, and large quantities are held over from day to day. Asparagus is extremely weak, receiving but little attention from consumers, while the cannery season is over. Cucumbers are in

Joaquin Valley and Placer county. Elbertas will be ready for shipment next week. We look for a strong demand at very satisfactory prices.

The shipment of Imperial Valley Malagas is about completed and this variety of grape from the Fresno district will be ready for shipment about the first of August. Tokays are sizing up well and will be about two weeks earlier than last season.

The following prices have ruled for the week:

New York—Tragedy plums averaged \$1.15; Santa Rosa, \$1.10; Burbank, \$1.02; Climax, \$1.08; Kelsey, \$1.66; Abundance, 70c; Wickson, \$1.42; Bartlett pears, \$3.00; Hale peaches, 70c; St. John, 77c; Triumph 68c.

Chicago.—Bartlett pears, \$2.73; Tragedy plums, \$1.48; Diamond, \$1.40; Burbank, \$1.19; Santa Rosa, \$1.34; Wickson, 83c; Royal cots, \$1.73; Thompson Seedless, \$2.32; Crawford peaches, \$1.16; St. John, \$1.06; Hale, 83c.

Total Shipments to July 10, 1916 cars; total shipments same date 1915, 1951 cars.

excessive supply and cheap, summer squash even cheaper, while okra holds fairly firm. Beans and peas are also well maintained. Bell peppers are lower, tomatoes are arriving in lugs from several points, causing an easier feeling. Green corn moves slowly; with large offerings prices are rather irregular.

Cucumbers, lugs 50 @ 75c
String beans, lb 3 @ 5c
Summer Squash, lugs 40 @ 50c
Peppers, bell, lb. 4 @ 6c
Asparagus, box 50 @ 60c
Eggplant, lugs \$1.00
Peas, lb. 2 @ 3c
Tomatoes, lugs 1.00
Green Corn, sack \$1.00 @ 1.25
Okra, lb. 5 @ 7c

POTATOES AND ONIONS.

Potatoes are as firm as ever, with light arrivals and large shipping demand, choice lots move readily at \$2.25 per ctl. The Delta onion crop is beginning to arrive, and prices are somewhat easier, though still high.

(On wharf)

Potatoes, ctl. Delta \$1.50 @ 2.00
Southern 2.00 @ 2.25
Onions, red 2.00
Yellow 2.00 @ 2.25
Garlic, new crop, per lb ... 5 @ 6c

POULTRY.

There has been a little stiffening up this week as the demand has shown more life, though young stock is coming in too freely to clean up readily. More firmness is noted on small broilers, hens and the best offerings of young roosters.

Broilers, 18 lbs. to doz. and less, lb 20 @ 22c
do, over 18 lbs. to doz. 21 @ 22c
Fryers 22 @ 25c
Hens, extra, per lb. 18 @ 19c
Small 16 @ 18c
Smooth Young Roosters, per lb. 25 @ 27c
Squabs, per doz. 2.00 @ 3.50

Geese, per pair 2.25 @ 3.00
Ducks 14 @ 15c
Old 13 @ 14c
Belgian Hares 7 @ 9c

BUTTER.

A large shipment of butter to Australia a few days ago; this, with a strong demand from various points in the state and irregular arrivals, caused an advance lasting several days. Increased offerings since caused the price of extras to break, though still higher than last week.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	26	27	27	27	27	25 1/2
Prime Firsts	24	25	25	25	25	25
Firsts	24	24	24	24	24	24

EGGS.

Egg prices have steadily advanced all week, extras going up 2 1/2 c. This is attributed mainly to the increased demand from the summer resorts, while local consumption keeps up fairly well. Production has dropped off in some quarters.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	25 1/2	26 1/2	27	27 1/2	28	28
Sel. Pullets	22 1/2	23 1/2	24	24 1/2	24 1/2	25

CHEESE.

Flats are coming forward in good shape, and price has been shaded slightly. Monterey cheese is easy, while Y. A.'s are a cent higher.

Y. A.'s, fancy 17 c
Fancy Calif. Flats, per lb 14 1/2 c
Monterey Cheese 15 @ 16 1/2 c

LOS ANGELES DAIRY PRICES.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	25 1/2	26 1/2	27	27 1/2	28	28
Eggs	24	25	26	26	27	27

DECIDUOUS FRUITS.

The fruit market shows comparatively little change, being rather firm for this time of year. Arrivals in most lines moderate, and there are few large accumulations of poor stock to hold prices down. Strawberries show a narrower range, fancy lots being easier, while common stock is higher. Blackberries have eased off slightly, with currants firm. Attractive lots of apples are quite steady, and country prices are said to be satisfactory to growers. Pears are well maintained, with light offerings. Apricots show less firmness, a good deal of unattractive stock appearing; peaches in good demand and steady at former level, good basket stock finding ready market. Black figs are well taken at slightly better prices. Plums and nectarines arriving more freely, with corresponding decline. Cantaloupe offerings have decreased and prices higher; watermelons comparatively high for this season. Grapes show some firmness.

Currants, chest \$4.00 @ 4.50
Loganberries, chest 2.00 @ 3.00
Blackberries, chest 3.00 @ 4.50
Raspberries, chest 4.00 @ 5.00
Strawberries, chest 4.00 @ 6.00
Apples, Gravenstein 1.20 @ 1.35
Astrachan85 @ 1.10
Crab apples, lug65 @ .90
Pears, Bartlett, bx, No. 1 1.75 @ 2.00
Other varieties90 @ 1.50
Apricots, small box40 @ .50
do, lugs 1.25 @ 1.50
Peaches, lugs 1.25 @ 1.50
Peaches, basket50 @ .75
Figs, black, box, dble layer 75 @ 90c
Plums, crate50 @ .85
lugs75 @ 1.00
Nectarines, crate75 @ 1.00
Cantaloupes, standard
crate 2.25 @ 2.75
Watermelon, lb 1 @ 1 1/2 c
Grapes, Thompson, crate 1.00 @ 1.25
Fontainebleau 1.25 @ 1.50

DRIED FRUITS.

The dried fruit market is gradually showing more activity, as more of the packers and growers are getting together on prices, though there will doubtless be a great deal of fruit unsold for some time. Old apples are closely cleaned up, a sudden revival of demand has brought a sharp advance. A few new apples have been contracted at 6c, but figure is not well established. Packers have reduced offers for apricots slightly, and state that crop in the San Joaquin has been pretty well bought up with 13 1/2 c as the extreme top figure, though Santa Clara growers are firm in their demand for 15c.

Special Livestock Market Report.

Cattle.—There is no quotable change in local buying circles, although offerings continue larger than can be well cared for. Good, medium weight cattle are steady to firm in dressed meat circles, and cheaper cuts are also finding a rather stronger demand.

Sheep.—Mutton demand is rather poor locally, dressed wethers selling at 13 to 14 cents, ewes 12 to 13 and spring lambs 16 to 17. Only a few California sheep are arriving, the bulk of the supplies coming from Oregon, with a few scattering shipments from Nevada.

Hogs.—Hogs are a quarter cent higher and receipts a third off from

those of the week previous. The falling off in receipts is expected at this time of the year which is the tail end of the dairy hog season and the stocking up season for stubble feeders. The fresh pork market is steady to firm, lightweights selling well.

Wool.—There is no reportable change in quotations, the market continuing strong. The London sales opened July 13, five to seven and a half cents stronger on Merino grades, but this can have no effect locally. The Boston market is proving disappointing to local buyers as it is ruling lower than our quotations, making it impossible to ship from here to that market with a profit.

Figs unchanged, but very firm. Spot prunes nearly cleaned up, and a few have moved at a slight advance, future Santa Claras are slow with buyers and sellers apart in their views. A fair movement is reported in other quarters. There are some Eastern interests who apparently regard the 6c price as justified but none are willing to pay that figure except for pressing needs. The new prices on seedless raisins were well received, and it is announced that the entire estimated crop was sold immediately, the Associated Company now refusing to book further orders.

Apples, old crop 7 @ 7½ c
Apricots, per lb, 1916 12 @ 13 c
Figs, white, 1916 6½ @ 6¾ c
Black, 1916 5 @ 5½ c
Calimyrna, 1916 9 @ 10 c
Prunes, 4-size basis, 1915 5 @ 5¼ c
1916 5 @ 5½ c
Peaches, old 5 @ 5½ c
1916 6 c
Pears 6½ @ 7 c
(Associated Raisin Co. Prices.)
Fancy Seeded, 16 oz. 7 c
London Layers, 3-crown,
20-lb. box, 1916 \$1.30
Imperial Clusters, 6-crown,
20-lb. box, 1916 2.50
Bulk, layers, 50-lb. box, 1916 2.75
cases, per lb. 8¾ c
Sultanas, 50-lb. cases, per lb. .8 c
Thompson Seedless, 50 lb.
CITRUS FRUITS.
Eastern markets as a rule are strong for citrus fruits. In New York July 10, 25 cars Valencias averaged \$2.45 to \$5.20; grapefruit averaged \$2 to \$3. At Boston, Valencias averaged \$2.55 to \$4.60; lemons \$2.60 to \$4; grapefruit in half boxes \$1 to \$1.30. At St. Louis Valencias \$3.30 to \$3.75; lemons \$3.05 to \$4.05; grapefruit \$3.70.
There is little new to report in this line locally. Lemons and grapefruit are in seasonable demand at old prices, oranges remain steady, while the top price on lemons has been marked down a little.
Oranges, Valencias \$3.00 @ 3.50
Grapefruit 2.00 @ 3.00
Lemons, box 2.75 @ 4.50
Lemonettes, box 1.50 @ 1.75
HONEY.
Honey prices are still rather firmly held, as all reports so far indicate that the new crop is light.
Water White, comb 13 @ 15 c
Amber 10 @ 12 c
Water White, extracted . . . 9 c
Light Amber, new 4 @ 6 c
Dark 4 @ 4½ c
NUTS.
Prices are quoted for the new almonds, based on what has been paid by packers for a few scattered lots. Apparently the bulk of the crop is going to the Exchange, as that organization has already 260 more members than last year, making 1079 altogether. The Exchange prices to the trade will not be announced until September.
(Prices offered by packers.)
Almonds, 1916
Nonpareils, lb. 17½ c
I. X. L. 15 c
Drakes 13 c
GROCERIES.
Low and medium priced coffees are dull and easy, with large stocks. All kinds of canned and cured fish are firm at high prices. Flour is quiet but steady at \$6.40 to \$6.80 from mills.
HORSES.
There is not much new in the local situation, the larger horse users taking only moderate interest in offerings, and picking up a few of the most attractive animals. There has been nothing of much interest offered for the last week, and local dealers complain that it is difficult to get anything at prices that will permit of resale in this market, owing to the cleaning up by war buyers. Several lots of mules have been offered here of late, but few are wanted for local use. Large shipments of mules for war purposes have been

sent from the Sacramento valley this week.
(Approximate values in San Francisco, based on auction sales.)
Drafters, 1700 lbs and up \$ 250
Drafters, 1550 to 1650 .. 150 @ 200
Chunks, 1350 to 1500 lbs 150 @ 175
Wagon horses, 1050 to
1350 lbs 110 @ 150
Green Mountain range
horses, 950 to 1200 lbs 20 @ 75
Farm workers 50 @ 100
LIVE STOCK.
(Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.)
Steers, No. 1 6¾ @ 7 c
No. 2 6½ @ 6¾ c
Cows and Heifers 5¾ @ 6 c
No. 2 4½ @ 5 c
Bulls and Stags 4 @ 4½ c
Calves, light 7½ @ 8 c
Medium 7 @ 7½ c
Heavy 6 @ 6½ c
Hogs, grain-fed:
100 to 150 lbs 8 c
150 to 250 lbs 8½ @ 8¾ c
250 to 325 lbs 8 @ 8¼ c
Prime Wethers 7 @ 7½ c
Spring Lambs, f. o. b.
country points \$5.00 @ 5.50
WOOL.
(Prices paid in the country.)
Red Bluff, year's 25 @ 27c
Sacramento Valley, year's .. 19 @ 25c
Mendocino, year's 31 @ 32c
Mendocino, 7 months' 26 @ 27c
Southern, year's 18 @ 21c
Southern, 7 months' 15 @ 18c
Imperial Valley, year's 17 @ 19c
Imperial Valley, 7 mos 14 @ 15c
Nevada 21 @ 23c
PORTLAND LIVE STOCK REPORT.
North Portland, Ore., July 10.
Cattle.—Receipts were fairly liberal today with an excellent price outlet. Best steers sold as high as \$8.50 and cows at \$7.00. Even very common steers brought close to the \$8.00 mark, and taking the market as a whole excellent strength and advances were prevalent in all classes.
Hogs.—An advancing hog market on little heavier receipts was the feature of the day. Top hogs sold at \$8.90, an advance of 30 cents over last week. Bulk of sales \$8.70 to \$8.80; market closed strong.
Sheep.—Sheep prices were well in line with last week. Top lambs were \$8.25 and all others classed in line with former prices. Market closed steady.
WEEKLY BUTTER AVERAGES.
Cents per pound for Extras.
Week Ending San Francisco Los Angeles
1915 1916 1915 1916
Jan. 2... 28.60 28.00 26.80 28.20
" 9... 25.33 26.66 26.00 28.10
" 16... 27.50 27.83 26.83 28.16
" 23... 30.66 28.25 30.66 28.50
" 30... 28.66 36.33 28.00 36.66
Feb. 6... 26.68 30.25 26.80 32.33
" 13... 26.74 31.40 27.00 33.25
" 20... 29.00 32.00 27.16 32.00
" 27... 29.10 30.90 27.00 35.25
March 6... 27.00 24.08 25.25 24.16
" 13... 24.66 29.91 24.00 28.83
" 20... 23.00 28.33 22.50 27.16
" 27... 22.91 28.50 23.00 28.08
Apr. 3... 23.00 28.50 22.23 28.83
" 10... 23.08 29.31 22.00 28.00
" 17... 23.00 27.33 22.00 27.50
" 24... 23.00 25.25 22.00 25.00
May 1... 23.08 24.33 22.00 25.33
" 8... 23.00 24.10 23.08 25.00
" 15... 23.16 22.25 22.30 20.83
" 22... 23.75 23.16 21.96 22.50
" 29... 23.08 24.16 21.83 24.58
June 5... 23.90 25.50 23.00 27.00
" 12... 24.38 25.83 23.83 27.00
" 19... 25.16 24.50 26.00 25.91
" 26... 25.50 24.50 26.16 25.91
July 3... 25.83 24.60 26.16 26.00
" 10... 25.50 26.40 26.00 26.00
" 17... 26.58 26.00 26.00
WEEKLY EGG AVERAGES.
Cents per dozen for Extras.
Week Ending San Francisco Los Angeles
1915 1916 1915 1916
Jan. 2... 38.50 35.60 42.00 35.00
" 9... 32.66 31.41 35.16 32.00
" 16... 31.00 30.33 30.33 30.75
" 23... 30.50 34.83 30.00 34.33
" 30... 28.16 36.33 26.66 36.66
Feb. 6... 23.33 35.66 23.75 35.50
" 13... 23.00 28.90 25.10 28.00
" 20... 23.60 32.66 23.58 20.33
" 27... 21.40 20.30 20.80 18.50
March 6... 20.50 18.33 19.00 18.00
" 13... 20.66 19.50 19.00 18.91
" 20... 21.00 20.00 19.66 19.08
" 27... 20.83 21.41 18.50 20.83
Apr. 3... 21.75 21.00
" 10... 22.00 21.16 23.08 20.91
" 17... 21.80 21.83 22.25 22.58
May 1... 26.16 21.00 22.09 22.58
" 8... 23.33 21.20 22.00 21.41
" 15... 23.58 24.58 23.00 25.66
" 22... 23.58 25.46 23.00 25.00
" 29... 23.50 25.33 23.00 26.50

The Wheat Yield Tells the Story

of Western Canada's Rapid Progress

The heavy crops in Western Canada have caused new records to be made in the handling of grains by railroads. For while the movement of these heavy shipments has been wonderfully rapid, the resources of the different roads, despite enlarged equipments and increased facilities, have been strained as never before, and previous records have thus been broken in all directions. The largest Canadian wheat shipments through New York ever known are reported for the period up to October 15th, upwards of four and a quarter million bushels being exported in less than six weeks, and this was but the overflow of shipments to Montreal, through which point shipments were much larger than to New York.

Yields as high as 60 bushels of wheat per acre are reported from all parts of the country; while yields of 45 bushels per acre are common. Thousands of American farmers have taken part in this wonderful production. Land prices are still low and free homestead lands are easily secured in good localities, convenient to churches, schools, markets, railways, etc. There is no war tax on land and no conscription.

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June	5...	22.50	25.00	20.70	24.41
	12...	22.00	25.00	21.00	24.16
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July	3...	23.83	24.60	22.50	24.00
	10...	25.50	26.30	25.00	25.60
	17...	24.33		24.66	

Publisher's Department

We receive many letters asking for advice in helping solve problems, and where the letters are properly signed, we are always pleased to do our best in replying. Some days we receive as many as fifty such letters and it is some effort and expense to take care of the correspondence entailed. Among these requests we frequently get letters signed "reader," "subscriber" or "xyz," etc. These letters are not answered. Our "query and reply" department is maintained for the benefit of subscribers, and unless a subscriber's name is signed to the letter we cannot be expected to reply, as only a fraction of the queries received are answered through our columns, the rest being written to directly. Kindly sign your letters and give post-office address and we will do our part as quickly as possible.

Yet another poultry raiser has developed into author; this time Herbert W. Brown of Saugerties, N. Y., with "A Living from Eggs and Poultry." The author announces he has written for the encouragement as well as a warning to persons desiring to make a living from chickens; that he has no interests to serve in exaggerating pleasant features or withholding unpleasant truths—just plain, unvarnished facts as he met them and gives for what they are worth to those desirous of building up a little plant of 1000 or so hens. Orange Judd Company, New York. Cloth bound. 178 pages. Illustrated. Price 75c.

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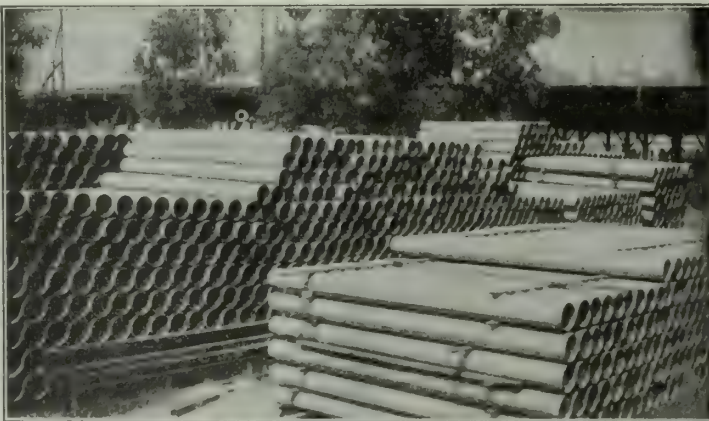
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SAN FRANCISCO

JULY 22, 1916.

LOS ANGELES

Preparation for Robber Cow Competition

Intending contestants for the California State Dairy Cow Competition, which starts November 1, and will continue till March 1, 1918, may well begin preparation now.

[Written for Pacific Rural Press.]

THE main reason why farmers continue to keep "robber cows" or "boarders" is that they do not know how much milk or butterfat the different cows produce, how much feed they consume, or its cost. Such has always been the belief of this journal, as has been shown by the mass of evidence, supporting more progressive methods, which has appeared in these columns for 45 years.

It was to supplement this fight against poor cows and poor methods that we first suggested, about a year ago, the holding of a State dairy cow competition under the auspices of the University of California, which would be wide enough in its scope to reach every part of the State in which dairying is carried on with grade or purebred cows.

That the plan met popular favor was shown by the immediate and generous support of breeders and business concerns, who subscribed several thousand dollars to a prize fund, as well as much valuable dairy equipment. But apparently other agricultural journalists opposed the effort because they did not start it, and they were able to retard the enterprise for eleven months—until Nov. of this year.

While it is still three months before the commencement of the contest, the necessity of preparedness is fully appreciated by those who have had experience in testing cows. In the hope of enlarging this knowledge for the benefit of all contestants, this journal has acquired, by special writers, an even larger number of experiences for publication than usual, which will be printed in forthcoming issues.

In view of the fact that the coming contest is largely a duplication of the Wisconsin Dairy Cow Competition, held during 1910 and 1911, the present article will deal primarily with experiences secured at that time and later compiled for general distribution by the University of Wisconsin, by F. W. Woll, who will supervise the California contest.

What Cows.—First of importance to all intending contestants is, what cows are eligible? In the Wisconsin contest, as in the coming California contest, any cow, either purebred or grade was eligible, the breeds competing among themselves for the main prizes as did the grades among themselves, special prizes, however, being given for the best cow, or groups of cows, irrespective of breeding. That young cows might be given a fair chance, a certain percentage was added to the records of those under 5 years, according to their age.

While it is generally conceded that Wisconsin cows are, on the

whole, higher producers than California cows, the fact that the Wisconsin contest was started six years ago, when, it is probable, the average production there was no higher than it is in this State now, leads to the assumption that records of winning cows in the Wisconsin contest are fair standards for intending California contestants to go by, in entering individual cows or herds.

Of the 395 cows for which yearly records were secured, which number will undoubtedly be greatly exceeded in the California contest, nearly two-thirds of the cows produced over 400 pounds of fat during the twelve months. As the California competition will only recognize a ten-month lactation period this average may, perhaps, be lowered accordingly.

Eight per cent of the records came below 300 pounds of fat for the year, 28 per cent were between 300 and 400 pounds, 39 per cent between 400 and 500 pounds, 17 per cent between 500 and 600 pounds, six per cent between 600 and 700 pounds, and two per cent over 700 pounds.

A requirement of the Wisconsin competition was that all cows should be safely in calf five months after freshening, to compete for prizes. In the present contest it is proposed to limit this to four months; and it is important to know that of the total number, 20 per cent of the Wisconsin cows were not bred within that period and were therefore not given prizes. This should be taken into early consideration by intending contestants.

The Best Cow.—The highest producing cow in the first competition also produced the largest net profit of any cow in the competition, having produced 888.157 pounds of butterfat during the 12 months at a cost for feed of \$129.40, this indicating that high-producing cows in the coming competition will consume large amounts of feed, but at increased profits.

The owner of this cow supplied the information that prior to her entrance in the competition she had made a yearly record of 613 pounds of fat in a local cow-testing association and that she was dry, but in a thrifty condition, a little over a month before freshening. She was fed a grain ration, and silage and clover hay for roughage, the former being cut down after the first eight months when she went down in production. He states that it was his object to keep her in about the same condition of flesh, that she was supplied with plenty of fresh water and was milked four times a day, finishing her year's work apparently in good condition.

The 10 Best Cows.—The winner of the first prize for the largest production by ten cows in a herd secured an average yearly production of 589.695 pounds for his 10 best cows. In his opinion, it is necessary that a cow to produce heavily must be raised right as a heifer. He also advocates the feeding of a great deal of roughage before the first calving.

When his cows were in the competition they were fed and milked three times a day for the first eight months, after which they were fed and milked two times a day, punctuality in feeding and milking being a

(Continued on page 88.)



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EDITORIALS

THE WEEK.

THE crowning agricultural event of the passing week is unquestionably the signing of the congressional rural credit bill by President Wilson on Monday, July 17. This is likely to be regarded by coming generations as most significant in the history of American agriculture, for it opens the way to the capitalization of farming on terms as favorable as those commanded by commerce, transportation and other forms of big business. The law, of which we gave an operative outline in our issue of July 8, provides institutions and ways and means by which farmers can secure loans by their own co-operative initiative and will be helped thereto by the treasury of the United States. This may develop into one of the greatest financial activities of the country, but no one can measure it now, except by his own favor or prejudice, because we have no American experience to teach us. This, however, seems a conclusion which is warranted by experience: if the attitude of individual capitalists and of great financial establishments to agricultural credit changes as much toward generous favor during the first five years of the operation of the new law as it has during the five years of discussion preceding its enactment, it will matter rather little whether the transactions under the law be small or great. Banks are certainly beginning to do things toward fairer financing of agriculture which a few years ago they would have sworn themselves idiots for even dreaming of. No one can now say that they will not yet beat Uncle Sam at his new game of helping farming. They can do it if they wish: it is up to them. They too have the advantage on their side: they have plenty of money and plenty of desire to trade in bonds. They too can trade with the unorganized, up-standing farmers singly, if they wish, and they can handle such farmers in large or small loans as their wishes and security may warrant. Their advantage is that American farmers as a rule prefer to deal man with man than bunch with bunch. It will be interesting to watch and see how they will adjust themselves to keep in touch with the greatest dependable money-using class of our population. We have an idea that the new law may endow agriculture with fairer prosperity not more by what it will directly do for them than by what it will force other custodians of capital to do.

Thus, it seems to us, the responsible farmers of the country may catch the capital they need, both coming and going, as one might say. The event which opens a vista to such a condition is surely of great national importance, and for this reason we present, on another page, a picturesque word-sketch of the way it was done in Washington on Monday of this week.

FINDING OUT WHAT COWS CAN DO.

WE ARE throwing a lot of heavy dairy shells in this issue for the purpose of clearing a path for the solid-column advance against worthless cows, announcement of which we expect to make soon. This is really the same

attack which we launched last December and which failed because our allies were scared off by the cry-baby tactics of rival infantry. It was a great mistake, because caterwauling should not have been allowed to pervert a purpose for which the agricultural press should present a solid front. It was indeed rather a sad spectacle of inconsistency for California journals which are preaching co-operation to their readers to fall to impeaching each other and refusing to co-operate on an enterprise which they all approve. But we will not scold any more about that: it has gone into history and has caused everybody to lose about a year's time. But now we are to make a fresh start and we hope all will resolutely advance together. The movement will respond to the same initiative (which was manifested in our issue of December 25, 1915) because delaying a thing which has started cannot destroy the primal impulse of it. It will proceed in the same way that was first pronounced; that is, under the personal supervision of Prof. F. W. Woll of the University of California. It will follow the same methods, will hold in view the same purposes and will move toward attainment of the same beneficent ends and there will be the same stimulants to interest and reward full activity. Let all who have good cows and are treating them well, keep their eyes wide open for the coming announcement and get ready to start in the race for which it will prescribe conditions.

EARLY EFFORTS TO ATTAIN COW VALUE.

EFFORTS to find the value of cows in terms of their product are not altogether new to this writer. Upon page 84 of this issue is an abstract of work which he did in the cheese districts of New York State 41 years ago, to demonstrate how much better some dairy herds were than others. The method chosen to demonstrate this fact was quite satisfactory. All the herd owners were sending milk to co-operative cheese factories, the managers of which were forced to compute very accurately each contributor's share of the money secured by the sale of cheese, because every man's eyes were upon him and every man's tongue ready to cry out if he could see any discrimination of a fraction against him. As the factory books contained record of every pound of milk furnished by each patron during the season's run and the individual ledger showed the payments made to each, and as all figures had to be checked back and forth in the manager's preparedness for kickers, there could be no doubt of the milk each delivered and the cash each received. The numbers of cows each patron had in milking was also recorded, for there were often neighborhood discussions of the facts and the managers armed themselves with defensive figures—which they also needed for offensive purposes, for all the factories, which were not widely distant from each other, tried to argue or shame their patrons into getting more milk from their acreage. There was also much canvassing among factory managers to get for themselves the "good dairies" which had large milk yields and to shunt to their competitors "poor dairies" because such dairies yielded less milk and more kickers. As we look back upon it, it was a very interesting undertaking and the publication of the results, which are outlined on another page, attracted much attention.

HOW INDIVIDUAL COW TESTING BEGAN.

THE figures to which we allude yielded only herd averages, but they disclosed differences which were a surprise to most people. If we remember correctly the pall-performances of so many cows had not been gathered and averaged previous to that time. And these were herd averages, not performances of individual cows, and they were all of herds in common dairy business—not of herds expensively promoted, though evidently some of them must have been expensively neglected. It is interesting to note that at about the same time very significant tests of individual cows were being made. One was by a Herkimer county (N. Y.) dairyman and it was very freely quoted about 40 years ago. This man found by book-keeping experience that the feed of his cows

averaged a cost of \$35 per cow. He found by measuring milk of the cows that the best five of them averaged 554 gallons of milk each and that the worst five of them averaged 243 gallons. The average value of milk during the test season was 11½¢ per gallon and figuring showed that his best cows were averaging a product of \$63.11 and that the poorest averaged \$27.95. In other words he was making \$28.71 clear profit on each of his best cows and he was losing \$7.06 on each of the others. This demonstration is at least forty years old and yet some cow-feeders are slow to get into cow testing associations even now. We do not exactly know when careful cow testing began. It is probably a very old art, but not old enough. If old Noah had had a Babcock test and platform scales in the receiving room of his ark he might have settled the poor cow question for all time!

EARLY COW-TESTING IN CALIFORNIA.

THE publication of such figures as we have cited, in the farm papers of the time, excited interest in California as in all other States. There was then no Babcock test and one could not find out exactly the value of a cow as is now possible. The test was by weighing and measuring the milkings and then monkeying with cream-gauges, miniature-churnings, lactometers, etc. Of course if a man was selling whole milk to a cheese factory, as in the case of the Herkimer dairyman, he did not need to worry how much water the cow was putting off on him—all he had to do was to determine the weight of the milk, such as it was. And that was what most of the testers of that time satisfied themselves with anyway. And even that sometimes upset them a good deal. The common elementary testing was to buy a spring-balance; hook it up in a doorway; tag the cows; tack up a sheet of paper on the back of the door; weigh the two milkings of each cow on the first and fifteenth day of each month; at the end of the year add the weights for each cow and multiply by fifteen. This gave a rough approximation to the weight of milk the cow had given. That was the way the first test made in California, which we remember, was carried out. It was by a dairyman in the lower part of the Napa valley. He knew of the figures we have given above and had concluded that if the best New York cows averaged 554 gallons of milk (or about 4450 lbs.) a year he was certainly not going to keep any worse cows in California, where they had grass all winter, and so he started his record, announcing that any California cow which did not give 4500 lbs. of milk in a year should "go to the chair." We did not see him for several months, but then asked him how his cow record was coming on. He was sad a moment and then said, quietly: "I had to tear the paper down. I figured after a few weeks that I did not have any 4,500-lb. cows and that even if I put the life-limit at 2500 lbs. and killed off at that, I would not have cows enough left to keep my milkers busy. You know a man cannot have a decent-sized dairy without plenty of cows." And so our old friend dropped his cow-testing and, like the merchant who marked all his goods to sell a little below cost, started again in pursuit of the phantom of getting rich through the increased volume of business transacted.

Still it was very clear, even forty years ago, that some of the herds were making their owners rich and some were keeping their owners poor. And it is not very creditable to human progress to be obliged to admit that some herds are doing one thing and some the other, to the present day. Still it is encouraging to note that there is wider interest in cow testing than ever before: that associations for cow testing are rather new and are making great progress, and that a State contest for premiums is to be taken up in California, because all these things awaken still wider interest in knowing whether individual cows are working for their owner or whether he is working for them.

WHAT A COW TEST IS GOOD FOR.

WE ARE enthusiastically in favor of the State cow contest which is soon to begin and made our first move toward securing the operation of it in California, because we have

strong convictions of the awakening power of it and because its results define standards which will shine brightly in the eyes of all those who have to do with dairy cows. These standards will be influential in breeding, feeding and handling operations for all cow people for years to come. They will concretely demonstrate what is practicable and available and therefore to be striven for. The cow contest has a value of its own. Economically it is not comparable in importance with the work of a cow-testing association, which appeals to us as basic and fundamental. It will, however, illuminate the pathway of cow-testing associations, set new standards for them and therefore operate as a new lifting-power in their progress. It strikes at once at the most advanced positions of purposeful breeding and selection, at the highest operation of nutritive functions and materials and at the most vital phases of man's relations to the productiveness of the animals which he employs. We hope no dairyman or woman will go into this cow contest with more idea of beating other men and women, with the work of his cows, than of advancing and improving his own understanding. The contest has in fact a much higher educational than economic or competitive purpose. It is not a matter of simple recipe or formula; it involves understanding and judgment of all recipes and formulas. If, for instance, Jones makes a desperate effort to find out how Smith feeds cows and imitates him he stands a good chance to be beaten by Smith, and perhaps by many others, because his conditions may be different from all of them. This contest ought to compel every contestant to find out exactly what his conditions are and how his animals react to the forcing agencies he will desire to employ to develop highest efficiency in them. This is only to be safely done by understanding the fundamental principles involved and watchfully applying these principles to one's own problems. Therefore in this matter of feeding it is a great deal better to study a careful treatise, in which nutritive principles and practices are clearly connected up, than to hunt for other feeders' methods. For example, it will be vastly more profitable to get a copy of Prof. Woll's "Productive Feeding of Farm Animals" and study it for days in the shade, with note book and pencil than to waste gold or gasoline in lathering around in heat and dust trying to get other people to tell what they are doing. Suggestions of individual practices may be, however, very valuable—to one who can understand the principles involved in them, for he alone is able to judge their applicability to his conditions and adopt or avoid them on that basis. And the same is true of the method of mastery of problems of breeds, of breeding policy, of labor-saving appliances, of keeping records and of everything else which participation in a great cow contest involves. Roughly speaking we are inclined to indulge in the sententious declaration: that the operation of a Cow-testing Association is chiefly for the improvement of cows, and that active and alert participation in a Cow-Contest is for the improvement of cow-owners. We hope that our readers who enter for the coming cow-contest will go in for all there is in it.

Salt and Sulphur for Mice and Horses.

To the Editor: Will salt and sulphur sprinkled on the loft floor in equal proportions under hay, keep out mice? If so, is the sulphur apt to prove injurious to horses to which the hay is fed, or can it be used with impunity? What is the proper proportion of salt per 100 pounds of hay to be used at the baler where hay is being baled?—E. C. H., Independence, Oregon.

It will have no effect on mice. If they do not like it they will climb up in the hay. Sulphur in such amount as they are likely to get will not hurt horses. The way your grandmother filled you up with sulphur and molasses ought to teach you that. But too much salt is not good for horses. Hay should only be salted lightly—say 10 or 12 lbs. to the ton.

Getting Rid of Stumps.

To the Editor: I sawed down two immense eucalyptus trees. Will you or any of the readers tell me how to kill or get rid of the stumps?—C. E. P., Williams.

If there is a stump-puller in your vicinity the operator of it may help you out. Powder will also do it and you can find out all about that by sending to the Giant Powder Co., Kohl Bldg., San Francisco, for their pamphlet on the subject. Other ways take more time. You can keep the stump from sprouting by chopping off the bark, down as far as you have patience to go, and the stump will soon decay, for that is the way with blue gum stumps. Another way takes less time and more work, viz.: grubbing out, and some of our readers think that the most convenient way for quick work with a few stumps. Prescriptions for boring holes and putting in saltpeter, coal oil or other things we have no faith in, so readers will please not repeat those stories.

Nematode Galls Not Bacterial Nodules.

To the Editor: I have 3200 tomato plants which are looking fine except that here and there one turns yellow and withers. On examining the roots I find them quite knotty. Is it a disease or an overdose of bacteria? My soil is a sandy loam; my seed bed was in soil where I raised tomatoes last year.—H., Hemet.

The root you send has galls or swellings made by nematodes, which are too small to see without magnification. The enlargements are not bacterial nodules, which are only found on legumes, and the tomato is not a legume. About the only way to fight nematodes is to run away. If you only have a few plants infested you might use the land a little longer for tomatoes, if desirable. If not plant next year on new land, not recently used for any vegetable—for nematodes take to scores of them. In any event, make your seed bed next year on soil which has been in pasture, summer fallow or grain but not in a vegetable crop.

Erinose of the Walnut.

To the Editor: Kindly tell me what this is on the enclosed English walnut leaf. The tree is 3 years old and the disease is spreading. There is no noticeable effect on the tree. Is it serious? What is the control, etc.?—R. S. T., Los Angeles.

The injury appears as tufted spots on the upper side of the leaf; the under sides of the spots being also raised from the surface but smoother. The under sides of the spots are generally light brown—the upper, generally darker by exposure. The injury is caused by a microscopic mite. Spread of the pest might be checked by spraying with kerosene emulsion as soon as the first sign of the injury appears, or by dry sulphuring. But though the blemish is conspicuous and threatening, it usually does not pervert enough of the leaf surface to affect the thrift of the tree and treatment is usually negligible.

Disease of Swiss Chard.

To the Editor: We have a Swiss chard patch that is troubled with a disease similar in appearance to the fire blight on the pear. We had it two years ago and it ruined our patch in short order. If we can combat this disease we believe that we have found the ideal green feed for chickens, as it can be carried over for at least two seasons. Can you give us a remedy?—C. B., Napa.

The Swiss chard is a beet and the beet has a blight which begins with a small brown spot with purple edges and may proceed until the leaves blacken and die from the tip to the base. If this is what you have, start in with Bordeaux spray as soon as you see the brown spots beginning. But we are not sure you have this blight; you send no specimens and we are not good at absent treatment. We have to see the patient and even then we often do not know what the matter is with him.

No Permanent Grasses on Dry Foothills.

To the Editor: On this foothill land when brush has been removed what grasses make best permanent pasture without irrigation? Also time and

way to seed?—H. M., Amador county.

We know of none. You can get green pasturage during the rainy season, and dry feed after that, by sowing bur clover, wild oats, filaree, etc. Other good annuals will also appear naturally—so that you will get much pasturage if you do not overstock and keep all plants from seeding. But for perennial grasses on dry foothills you need water; not very much for rye grass, orchard grass, red-top, tall oat grass and a few others—but you must use some water to keep them alive through the dry season so that they can grow the rest of the time. Sow all such grasses with the fall rains.

Black Aphis of Citrus Trees.

To the Editor: Am enclosing a small insect that is killing our orange trees. This is the third year. Please tell me how to kill them.—S. P., Parlier.

It is the black aphis, or plant louse, of citrus trees. It is found in all citrus districts, but is usually held in control by its natural enemies. Where it gets the upper hand it can be checked by thorough spraying with soap and tobacco wash. This would probably give the enemies a chance to catch up. Your specimen shows the larvae of the syrphus fly among the lice and dining on them. As for killing the orange trees, lice are not apt to do that unless the trees are made unthrifty by some other adverse condition.

Selling Walnuts.

To the Editor: What would you think of a walnut grower in our valley (where there is no local of the State Ass'n) putting up this year's fancy nuts in 1, 2, or 5 pound cartons and selling to a private trade to be developed? Where can we obtain such cartons?—E. F. S., Concord.

Some individuals are doing it and selling by parcels post, but we have no details of their results. We understand that the Walnut Growers' Association welcomes members at large in places where there are no local associations and we should be inclined to look into such membership, furnishing of cartons, etc., before going it alone. The manager is Carlyle Thorpe, Los Angeles.

Cutting Seed Potatoes.

To the Editor: I note in your reply to R. W. H. Sanger, on what kind of seed potatoes to plant, in your issue of June 17, you advise "small medium" planted whole. This question was tested many years ago in England and it was found that "medium large" cut two eyes to the piece, gave the best returns per 100 lbs. of seed. Many eyes produce many stalks and more than two stalks to a hill generally means small spuds. Also cut off the cluster of small eyes at the bud end.—F. W. C., Watsonville.

Yes, and such tests have been repeated hundreds of times since, both in Europe and this country, and all kinds of conflicting results have been attained so that it now seems to be fairly demonstrated that the only important thing is that the seed piece should have not less than three or four ounces of substance to start strong shoots; that removing the seed end is waste of time and substance; that planting whole potatoes gives more crop than cutting but not enough more with big potatoes to pay for the extra amount of seed required and therefore large potatoes should be halved or quartered, according to size, and that only one piece or one whole potato should be planted in a place.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco, for the week ending at 5 p. m. July 18, 1916.

STATIONS	Past Week	Rainfall Data		Temperature Data	
		Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka	1.16	1.29	.11	62	48
Red Bluff .....	.02	1.02	0	96	58
Sacramento	0	.06	0	92	52
San Francisco	0	.93	.01	84	52
San Jose	0	0	0	92	46
Fresno	0	0	0	100	58
Independence	0	0	0	94	
San Luis Obispo	0	0	.01	74	52
Los Angeles	0	0	0	78	56
San Diego .....	.02	.02	0	70	60

Contra Costa Pear Drying.

[Written for Pacific Rural Press.]

Only California and New York produced over a million "bushels" of pears in 1909 according to the census; and their nearest rival is Michigan with a little over half a million. Most of these are canned or shipped green—so much so, that dried pears are not segregated in any statistics we can find of production or export.

However, there are many windfalls which in ordinary years are not sought by canners and cannot be shipped East. Where shipping fruit is worth \$60 per ton, windfalls may be worth \$22, which the canneries are said to be offering for them in Contra Costa. If the canners take them all at that price not many will be dried, for that would make dried fruit cost about \$120 per ton besides the drying. This is more than much of the dried pears sell for.

Probably the most extensive pear dryer in Contra Costa county is E. B. Anderson whose own crop is supplemented by purchase of all his neighbors' windfalls.

According to A. R. Munroe and C. B. Jones, experienced fruit handlers now working for Mr. Anderson, the first operation of proper pear drying is to cushion the earth under all trees with dry manure or straw—the former serving two purposes with the same labor, if obtainable.

Pear picking for shipment East began in Mr. Anderson's orchard last week. Fruit suitable for drying had begun dropping a week or so earlier. If it drops onto hard clods and breaks the skin, such breaks must be cut out before drying. Ordinary bruises with unbroken skin may be slightly discolored but "the sulphur clears that up."

Piled until Ripened.—Pears for drying are gathered before they sunburn, stored in piles a foot or two deep, and covered with straw or hay to keep them cool and dark.

When they have turned yellow and become nearly soft enough to eat, drying commences, perhaps a month after picking commences. Drying season may close Aug. 30 to Oct. 1, according to amount of fruit.

When drying commences, the piled-up pears are picked over, selecting those suitable, and sending them to the women cutters.

Kinks on Cutting.—Each fruit is cut endwise into halves, leaving both the stem and blossom calyx on the same half. This permits the calyx to be cut out and the stem pulled out more quickly than if on separate pieces. The stem pulls out much smoother and quicker than it could be cut out. It is hard to keep the cutters from cutting off the stem end of a pear before halving it. But when allowed to do this they get careless and cut off half the neck. The waste in cutting the stem off at all, amounts to considerable in a ton of pears. If there is any bad place in the pear, the knife runs through its center. Then the bad part can be cut from the edges of the halves without wasting good meat. Cores are left in, unless wormy. At one time the cores were cut out, but there was much waste and no better prices. Mr. Jones used to make high-speed cutting, by

grasping the pear in his left hand so that he could turn it over with his thumb after setting the knife into it and holding the knife comparatively still, with very little waste motion. Eyes are kept on the tray rather than the lug box. About 8c per 50-pound net box is paid for cutting. A good cutter gets about two boxes onto the usual prune tray which is used for pears. Close packing on the trays is desirable.

How Pears are Sulphured.—Sulphur houses are of wood covered tightly with tarred paper. They hold a carload of 20 trays each. A "heavy dose" of four to six quarts sulphur is put in a kettle set about two feet deep in the floor of the sulphur house. If too close to the fruit, the heat of burning sulphur would cook it.

The first dose lasts about six hours; and two of less quantity are burned before the fruit has been in the fumes 18 hours. Pots must not be filled full, for burning sulphur liquefies and would run over.

To start the sulphur burning, a canvas strip is buried lightly in it. This is better than paper, which burns too quickly. Mr. Jones discovered that the strips work better if previously dipped in sulphur liquefied by heat. He has fixed a whole season's supply of such "wicks" at once. They are hung up to dry after dipping, and then stored till used.

If fruit is specially ripe, one big dose of sulphur sometimes does the work. At any rate, the pears should become so soft that the core can be pushed through the meat, with a finger. It will mash if picked up and dropped onto the tray. Juice does not seem to run out as with peaches, but the sides are moist and will discolor if trays are dirty or are made of unseasoned redwood.

Drying.—They are left on the dry ground in the sun, in Contra Costa county, one to three days. When the edge of the skin turns brown and begins to curl in, they are ready to stack, according to Mr. Munroe. If left longer, the brown color would extend into the meat and not come out. The sooner they can be stacked, the better, thinks Mr. Anderson. Some are piled up with inch strips between trays for ventilation, but the better way seems to be to stack them in ricks with trays end to end and resting on each other. The centers would sag with weight of fruit, so a strip must support each center. They are left in the stacks one to three weeks according to weather—the longer the better. When they can be handled without breaking the skin, they may be stored in lug boxes until packing time. They have better color if there is no dew. They dry away 5½ or 6 to one—less when full of sugar as those grown on adobe land. It seldom pays the grower to sort them unless there are too many black spots. Seldom are any but Bartlett's dried.

The St. Helena Vintage Festival will be held Sept. 1 to 4. A dramatic allegory and new scenery will portray the delights of tilling the soil. A floral and industrial parade will be held Monday.

Destroy Pests

with "Corona Dry"

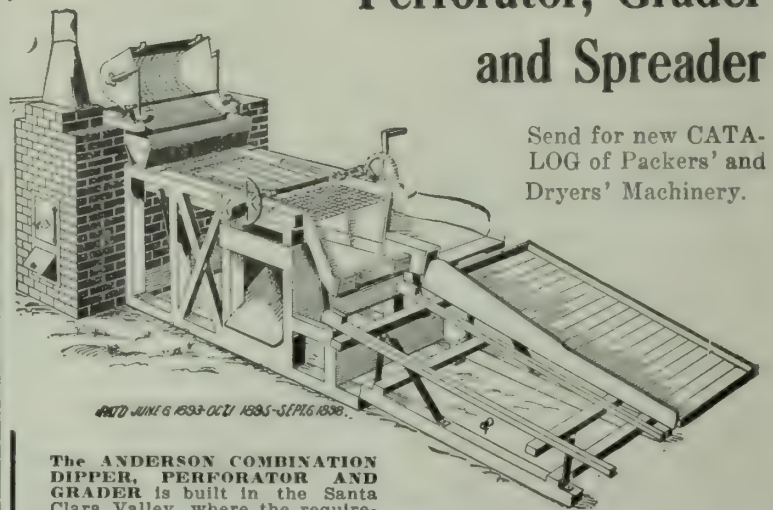
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"Corona Dry" is the most successful pest destroyer on the market. It is now being used by thousands of large fruit and vegetable growers throughout the United States. Costs little and produces wonderful results. No sloppy mixture required—"Corona Dry" is applied in dust form. For corn, dust on silk only—no danger to ear or fodder. Write or call for booklet "Garden Pests and their Control." Ask your dealer for "Corona Dry."

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It illustrates and describes the entire Anderson-Barngrover line of Fruit Packers and Dryers' Machinery. A copy will be sent free to all who are interested. A postcard will bring it.

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Three Hundred Million Bushel Crop in 1915

Farmers pay for their land with one year's crop and prosperity was never so great.

Regarding Western Canada as a grain producer, a prominent business man says: "Canada's position today is sounder than ever. There is more wheat, more oats, more grain for feed, 20% more cattle than last year and more hogs. The war market in Europe needs our surplus. As for the wheat crop, it is marvelous and a monument of strength for business confidence to build upon, exceeding the most optimistic predictions."

Wheat averaged in 1915 over 25 bushels per acre
Oats averaged in 1915 over 45 bushels per acre
Barley averaged in 1915 over 40 bushels per acre

Prices are high, markets convenient, excellent land low in price either improved or otherwise, ranging from \$12 to \$30 per acre. Free homestead lands are plentiful and not far from railway lines and convenient to good schools and churches. The climate is healthful. There is no war tax on land, nor is there any conscription. For complete information as to best locations for settlement, reduced railroad rates and descriptive illustrated pamphlet, address

Superintendent of Immigration, Ottawa, Canada, or apply to Gilbert Roche, Canadian Government Agent, Canadian Bldg., Exhibition Grounds, San Diego, Cal.

Canadian Government Agent.

Reasons for Sour Sap---Stocks for Plums.

[Written for Pacific Rural Press.]

To the Editor: Your summary of the three causes producing "sour sap" (June 24) is most helpful; as it harmonizes the hitherto conflicting and often contradictory theories advanced. Cause number three is rarely, if ever, realized—injury by frost—but when it is remembered that in March, the thermometer rose frequently to 90 degrees, and in May fell below 32 degrees, what wonder is it that the flow of sap was seriously interfered with! These conditions prevail every spring. However, there is not often nearly 60 degrees difference in temperature during the spring. Such variation, together with the two other causes you mention, will readily explain why it is that so many young trees are sour sapped almost every year.

Stocks for Plums.—In the same issue of Rural Press, Farm Adviser E. O. Amundsen of Placer county gives good advice in regard to plum stocks. I introduced both the Diamond and Grand Duke into California from Rivers & Son of England nearly twenty years ago, and since then have imported many other varieties from the same firm. The non-union of Diamond with peach was well-known then; and any good nurseryman could have saved growers lots of trouble if they had asked questions through the Rural Press, instead of making costly experiments. There are comparatively few varieties of domestica plum which unite well with the peach; and it is useless to try to work them together. Those who have peach trees which they desire to change into Diamond plums, or some others, should do so by first grafting onto the peach some variety, like Damson; and then work that over to the plum which will not make a direct union with the peach.

Morganhill. Leonard Coates.

SAVES BREBA FIG CROP.

To the Editor: In your issue of June 3, the item under the above head is misleading. Undoubtedly the pseudocarica is the capri referred to. The mamme crop of capris fertilize the breba crop of Smyrnas. That is why the pseudocarica may become a big factor in Smyrna production. It is the only capri we have, whose mamme crop carries pollen. Now the mamme crop ripens in January in Imperial Valley, so the crop your correspondent saw in May was the profichi crop which pollinizes the main crop of Smyrnas. The breba crop if pollinized would undoubtedly have been ripe in May.

Mr. Markarian of Fresno tried pseudocarica on his breba crop without success. He reports no pollen, possibly due to the young age of the trees. I believe he got the capris from the Clovis district.

Early in 1915, Mr. Heiny sent me some pseudocarica mamme. They contained pollen and blastophaga. They were the last of their crop, but too early for use in this district.

Kerman. Walter C. Ficklin.

[The capris referred to were pseudocarica and their mamme crop had pollinized the Smyrna brebas which were set well when seen in May and about ripe. The article referred to was awkwardly stated in that it seemed to say that the insects emerging in May were the ones that pollinized the Smyrna brebas. Mr. Heiny has produced seven gen-

erations of wasps in a year near Brawley. The first of these was late in February; the last in December. It was the generation which matured when the Smyrna brebas were receptive that pollinized them. We are glad to get Mr. Ficklin's criticism.]

YOUNG PRUNES DEFOLIATED

To the Editor: About 40 of my coming year-old prune trees were totally defoliated by stray goats. Will this kill them (the trees) and is there anything I can do?—C. H., Gilroy.

[If your trees were vigorous, they have enough reserve food material in their trunks and roots to put out new leaves before they starve, provided they have plenty of moisture. Trim off ragged twigs and branches, keep the ground well cultivated, set a board vertically on the southwest side to shade the trunk of each, and irrigate them if the ground is at all dry.]

WOOD RATS IN ORCHARD.

To the Editor: In a recent letter from Ira Avery of Newcastle, he says that last year he experienced considerable trouble from wood rats climbing young pear and plum trees and cutting off the small limbs. He also states that the rats gnawed the base of some of the pear trees quite badly. By setting steel traps at the trees where they were working he got the rats and since then has experienced no injury. He also relates that on large cherry trees he has from time to time noticed spurs and small limbs cut off by the rats.

We have heretofore always laid such work at the door of the ground squirrels and it is very interesting to know that Mr. Avery has trapped these pests at their work. Never having before known of such injury by woodrats, we pass the information along through your columns for the benefit of other orchardists.

Loma Rica Nursery.

Grass Valley.

GRAPE LEAVES CUT OFF AT NIGHT.

To the Editor: When the grapes on my pergola were nearly ripe, something heretofore has bitten a few bunches off through the stem every night. This year I find a few leaves on the ground every morning, bitten off in the same way.—R. H. S., Menlo Park.

[Look them over with a flashlight after dark and if you find cut worms at work, place some poisoned bran around the bases of vines and in crotches or on horizontal parts. Formula adapted from "Second Thousand Questions in Agriculture": Mix an ounce white arsenic with ½ pound dry bran and stir in 1-5 pt. molasses diluted with enough water to squeeze out very slightly between the fingers when a handful of the mash is squeezed in the hand.]

If your raspberry canes have reddish or brownish spots with purplish borders, they have anthracnose and will have it again next year unless they are thoroughly sprayed with Bordeaux just before buds begin growth in spring.

John Deere Implements

John Deere Spreader

The Spreader With The Beater On The Axle

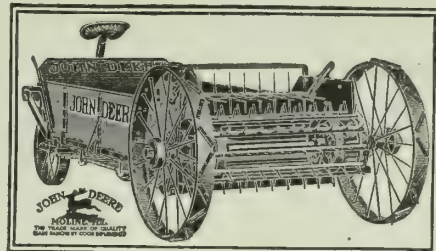
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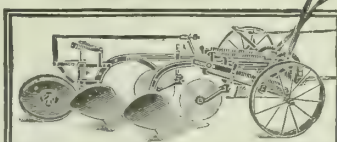
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Deciduous Fruit Maturity Standards.

[Written for Pacific Rural Press.]

Maturity standards for fruits and certain vegetables shipped East are widely desired as a part of the new standardization law.

There are, however, difficulties here that are not encountered with grapes and oranges. The desirability of maturity standards easy to enforce and fair to all cannot be doubted after seeing their effects on the market for the two fruits mentioned.

Deciduous fruits, being so perishable, must be picked in most cases too green to eat, that they may not be spoiled at the end of the six to twelve day trip East. Certain of the largest Eastern buyers want the fruit so green on arrival that it can be re-shipped to interior local points before breaking down.

A conscientious shipper of Placer county whose efforts for maturity and standardization have made his markets most stable, and have impressed higher ideals on California legislation, recently showed us a daily market report in which the highest priced lots, as a rule, had been shipped much greener than our friend's standard. He also mentioned having shipped a car of peaches f. o. b. some time ago, which he felt were considerably too green. He wired his customer in Minneapolis that if there should be any loss, satisfactory adjustments would be made. The Minneapolis house reported that the fruit was exactly what they wanted, since much of it would be reshipped to the Dakotas in smaller lots. They suggested that the shipper had been losing money by insisting on his standard of greater maturity.

On the other hand, a house in Lincoln, Neb., wrote in 1915 complaining about the immaturity of the first car received that season. They stated that they "would have to wait until the trade had forgotten their experience with it before they could order more." And Manager C. E. Virden of the Cal. Fruit Distributors is constantly pleading for less immature fruit to market. The largest city markets consume a large part of our fruit without reshipment. This should be ripe and eatable on arrival.

Irregular Maturity within each package, probably hurts our deciduous fruit markets more than immaturity; and this, the law will prevent when fully enforced. We have seen many lots of plums, apricots, cherries, and peaches, which sold low because only one or two messy or moldy fruits showed in the sample crate or box, on which the rest of the lot was judged.

What Kind of a Maturity Test?—The difficulty of establishing standards for the reshipping and local-consumption purposes of Eastern buyers, is complicated by two other factors.

How to make a sugar test of fresh fruits picked only partially ripened, when as one inspector said, "it would take a whole boxful to get juice enough for a test," is the subject of a problem on which the University is already working on Bartletts at the suggestion of Acting State Horticultural Commissioner Geo. P. Weldon. Inspectors now sometimes bite into a few to judge their maturity

by relative sweetness to taste. Pears too immature when picked, shrivel instead of ripening.

Most deciduous fruits except cherries and grapes develop sugar after being picked, so if a suitable sugar test can be devised the questions would still have to be answered, "How long will the fruit be on the road and at what temperatures?" "How much sugar develops under given times and temperatures in each kind and variety of fruit after each condition of maturity at the start?" and "Is the fruit to be consumed locally or reshipped?"

Cantaloupes.—The maturity test being practiced this season on cantaloupes was agreed upon by practically all the shipping companies in Imperial Valley. A melon is considered mature if, in picking, the stem pulls entirely off smoothly (full slip); if it leaves part of the stem, it is "half slip" and immature, especially in the early part of the season. Government chemists have been working on a sugar maturity test this season.

But the great difficulty in fixing maturity standards would be to get some that would be fair to all sections.

Color Test Unfair.—A color test

is certainly out of the question on account of its varying relation to maturity in various counties; due to "different climatic and soil conditions and various altitudes."

Color is not a reliable index to eatableness, which is the final vital test. With strawberries in Sacramento county last season Deputy F. C. Brosius noted that "lots of green berries were colored by the north wind while still not eatable—lacked sugar—would shrivel on the vine" or in the package.

With plums, etc., there is irritation between foothill and river and other districts because foothill plums have higher color at the same maturity, but some of the growers do not realize it.

GRAIN FOLLOWED BY CORN THE SAME SEASON.

[Written for Pacific Rural Press.]

Grain followed by Indian corn the same season is the rotation practiced by E. A. Parkford who has leased the Ontario sewer farm for 25 years. Alfred Allen, who was in charge last spring, told how Indian corn was planted in July and August last year. The last 10 acres grew 7 to 8 feet tall before being cut for silage. The earlier planted corn grew a foot or two taller. It had been irrigated just before planting.

Sixty acres of corn filled two 130-ton silos.

After the corn was off, the land was gang-plowed and sowed to grain just before Jan. 1. It was expected to have the grain off in May, irrigate with the sewage water, and plant corn again. The soil is deep and light, underlaid with gravel.

GOOD BYE! Morning Glory

Don't let this troublesome weed sap your soil and ruin your crop.

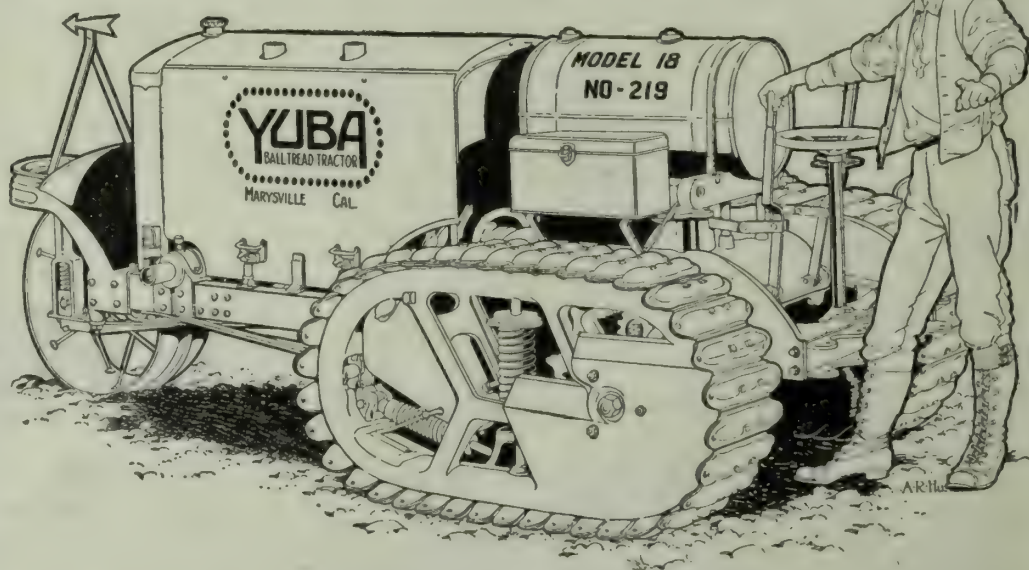
NONPAREIL

is the one sure exterminator that does the work without injury to the ground. Read what Luther Burbank says: "We find that Nonpareil destroys not only morning glory but also horse-radish. We consider it a thoroughly satisfactory weed exterminator"—Luther Burbank.

One gallon of Nonpareil is sufficient to kill 250 plants. It does not prevent the ground from producing regular crops. It acts as a tonic to the soil. It is easy to apply and economical to use. Write today for interesting folder on this profit saver.

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State	Grain..... Hay.....
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How the Rural Credit Bill Became Law.

WASHINGTON, July 17. — President Wilson today signed the rural credits bill passed recently by Congress. Just before signing the measure, which creates a system of twelve land loan banks under direction of a federal board, the President made a short address.

"I cannot go through the simple ceremony of signing this bill without expressing the feeling that I have in signing it," said the President. "It is a feeling of profound satisfaction and real gratitude that we have completed this piece of legislation, which I hope will be immensely beneficial to the farmers of the country."

"The farmers, it seems to me, have occupied hitherto a singular position of disadvantage. They have not had the same freedom to get credit on their real estate that others have had who were in manufacturing and commercial enterprises, and while they have sustained our life, they did not in the same degree with some others share in the benefits of that life."

"Therefore, this bill, along with the very liberal provisions of the Federal reserve act, puts them upon an equality with all others who have genuine assets and makes the great credit of the country available to them."

"I look forward to the benefits of this bill not with extravagant expectations, but with confident expectation that it will be of very wide-reaching benefit and incidentally, will be of advantage to the investing community. I can imagine no more satisfactory and solid investments than this system will afford those who have money to use."

The President used two pens and gave one of them to Senator Fletcher of Florida, who asked permission to present it to the Southern Commercial Congress.

In addition to the number of members of the House and Senate, the signing was witnessed by David Rubin of California, one of the originators of the bill, and by representatives of the National Grange, the Farmers' Educational and Co-operative Union, the Farmers' National Congress and the National Council of Farmers' Co-operative Association.

NAPA FARMERS ACTIVE.

To the Editor: There were four gatherings of farmers in Napa on July 8: the farm bureau directors, the Napa county poultrymen, the cow-testing association, and the Napa Valley prune men.

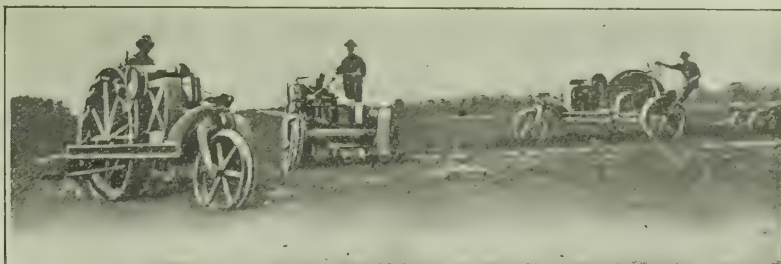
Mr. Weinstock addressed the last group and made a very favorable impression. All whom I have talked with since the meetings think that Mr. Weinstock will accomplish what he is after.

After the meetings the front page of the Rural Press of July 8 came in for an inning. All over town could be seen groups of farmers discussing our all-star school. What the farm adviser and farm bureaus have done for Napa county is nothing short of a miracle. All county seats are largely made up of dyed-in-the-wool conservatives. It is less than two years since the movement was started. It was advertised in the local papers that Professor Baade, our farm adviser, would be at the Chamber of Commerce on a certain date at a certain hour to meet the farmers. Just one lone farmer showed up to give him a welcome.

That's ancient history now; the farmers have made amends for their slackness. They are doing better all-around farming today.

The counties that are without a farm adviser are making a great mistake.

I wish also to say that J. J. Fox, our horticultural commissioner, has been of great assistance to Mr. Baade in making the farm bureau a success. They use the same office and whenever Mr. Baade has been absent from the office Mr. Fox has done everything that he could to help the cause along. Chas Blom. Napa.



3 Big Bull Tractors employed on Moulton Irrigated Lands Co. ranch near Colusa.

Before Buying Your Tractor

1. Compare the simple and strong construction AND PLOWING CAPACITY of the BIG BULL TRACTOR selling for \$645.00 f. o. b. Minneapolis—with any tractor on the market selling for \$500 and \$700 more.
2. Get in touch with BIG BULL owners—they will tell you.
3. Bear in mind the fact that in plowing the BIG BULL steers itself.
4. Consider carefully the testimony of hundreds of BULL TRACTOR owners which proves the bottom of the furrow is broken up by the subsolling action of lugs on the Bull Wheel—they have increased their crops from 10% to 15%.
5. Investigate the remarkably simple and accessible motor of the Big Bull, which delivers a full 20 H. P. for belt work—direct and does not go through any gearing.
6. Compare prices of Big Bull Tractor repair parts with any on the market. The result will surprise you.
7. Notice that the Big Bull has fewer parts. Inspect their strength, quality and accessibility.

THEN SEND IN YOUR ORDER FOR A BIG BULL EARLY ENOUGH TO SECURE DELIVERY!
Tractors are cheaper to work than horses—it doesn't matter which make you get, you will save money.—only with a BIG BULL you save more!!

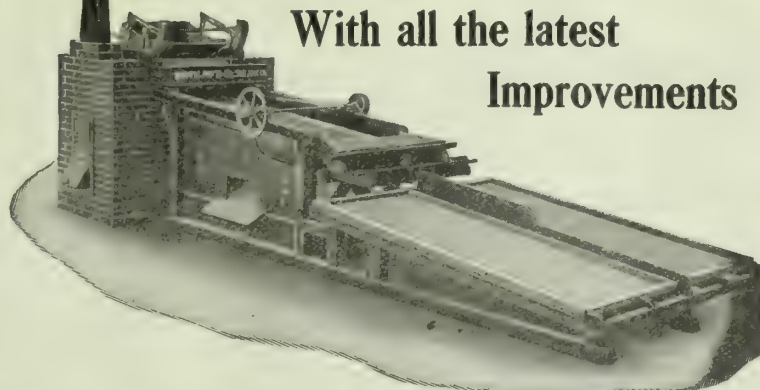


HUGHSON & MERTON, Inc.

530 Golden Gate Ave., San Francisco.
1229 South Olive St. 329 Ankeny St.
Los Angeles Portland.

Prune Dippers and Graders

With all the latest Improvements



Combined Dipper, Grader, Automatic Spreader.

Best and Cheapest on the Market

Dipper-Graders, Spreaders, Field and Transfer Cars, Etc.

Perfect in Efficiency.

Lasting in Durability and Fully Guaranteed.

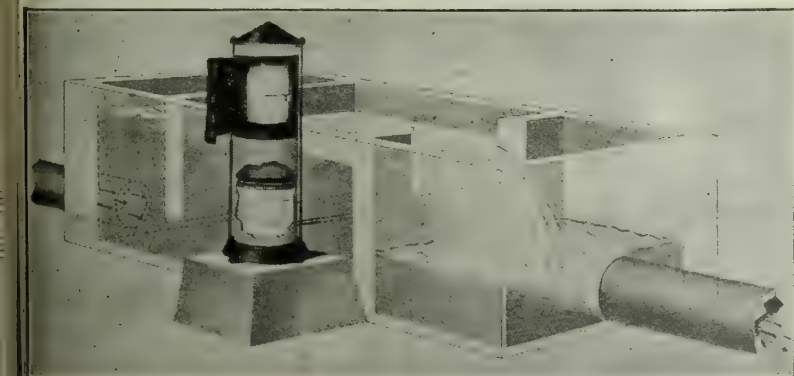
Write for Catalog and Prices.

SMITH MANUFACTURING CO.

Stockton Ave., near The Alameda.

SAN JOSE, CAL.

Do You Know How much water you are using?



THE SENTINEL RECORDING WEIR-GAUGE

automatically checks and records every variation of the flow over your weir—and the time it occurred.

The Sentinel is on duty every minute. It gives you an accurate check on the water you use.

Just send your name and address on a postal for full information, asking for Catalog "R."

R. W. SPARLING

Power and Pumping Machinery and Supplies.

945 North Main Street,

Los Angeles, Cal.



One of the many styles and sizes of Fruit Trucks I manufacture. Sixteen years of experience has taught me how to make trucks that will stand the hard knocks and that will last. For prices and particulars, address

BROEDEL ORCHARD TRUCK CO., 552-556 South First St., San Jose, Cal.

BEEKEEPERS' SUPPLIES

Everything for the Honey-Bee.

Catalogue sent free on request.

THE A. I. ROOT CO.,

245 Mission Street,

San Francisco,

Calif.

Established 1878.

Incorporated 1906.

Leonard Coates Nursery Co.

MORGAN HILL, CAL.

"We Grow Everything Worth While"

Send for Catalogue.

Mechanical Power on the Farm.

STATE FAIR TRACTOR DEMONSTRATION.

Parade of all tractors in front of grandstand 9:30 a. m. Sept 4. Public demonstration 10 a. m. to 1 p. m. Sept. 4. Private demonstrations daily 3 to 5 p. m.

No exhibitor will be allowed more than one tractor of each size on the field at one time during the public demonstration, which will be confined to plowing. Disking and seeding may be shown in private demonstrations. Each manufacturer will be confined to two tractors during the public demonstration.

The land available for the tractor demonstration will be divided up

among the various exhibitors, space being allotted to each tractor on the basis of the number of 14-inch plows it will pull during the demonstration.

The sum of \$25.00 shall be posted with the Secretary of the State Agricultural Society Aug. 25 for each tractor entered in the demonstration. This money will be forfeited to the Association in case the entry made fails to take part in the demonstration. The money to be refunded at the close of the Fair if no forfeits are made.

All plowing must be to a depth of six inches during the entire demonstration.

In the public demonstration, the motor or tractor must not be run at more than ten per cent above its catalog speed. Tractors may be run on high gear with normal engine speed when disking, harrowing, seeding, etc., in private demonstration.

Positions on the field will be drawn by lot at a meeting to be held on the field Saturday, September 2nd.

No decisions or awards will be made during the demonstration. This is purely an educational demonstration, not a contest.

Each tractor shall bear a placard showing the brake horse power of the engine, the revolutions per minute, the plowing speed in miles per hour, and the kind of fuel used.

All tractors on the demonstration field belonging to one exhibitor must be kept on or along the land allotted him for that day's demonstration, until the hour designated by the management for returning to headquarters.

No machine will be allowed to operate with special equipment other than that designated for practical use with same. No spectacular methods will be permitted on the part of salesmen, or others, to attract crowds.

Each tractor exhibitor may burn any kind of fuel he desires, but no one will be allowed to burn fuel of higher gravity test than that used by his competitor burning the same kind of fuel.

Each company exhibiting at this demonstration shall appoint one manager, who will be accountable for the work of his company and will receive all instructions and make all requests or complaints.

The interpretation and enforcing of these rules shall be left to the director in charge.

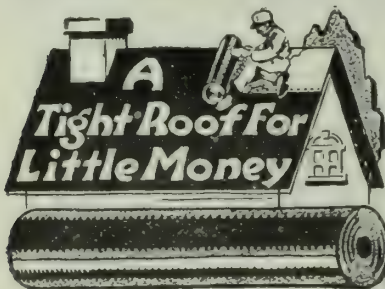
Entries to this demonstration to close with the Secretary of the State Agricultural Society, August 25.

JUST A LITTLE ENGINE.

(Written for Pacific Rural Press.)

There is nothing unique about the little 2 h.p. gas engine used by C. W. Troyer of Concord, but why don't more people have them, and why isn't it hooked to the washing machine, poultry feed grinder, etc., as well as to the grindstone and the pump?

The engine is on a concrete foundation. A belt runs into the house where it works a pair of vertical arms by which the pump plunger is raised and lowered. A tank seven feet deep, high up, may be filled in three hours; and it furnishes very



Just as surely as the roof tops the house, does the question of what roofing to buy top all others when it comes to how best to protect property against wind and weather.

Wood-Crane Prepared Roofing

is so far and away above all others that it is in a class by itself. It is a roofing that you can put on your home, on your church, on the town hall. It will ornament the building and vie with the foundation stones in wearing qualities. It never fails to make good. Anyone who can use a hammer can lay it. Every roll is 36 in. wide and guaranteed to cover 100 sq. feet.

PRICES
\$1.35 to \$2.55 per Roll
Nails and Cement Free

Send for Free Samples. Test them for weight, strength, flexibility, fire resistance, and compare them with any roofing costing from \$1.00 to \$3.00 per roll. We are the largest distributors of America's Best Goods on the Pacific Coast. We can save you money and guarantee to give you satisfaction. Write today for Roofing Samples and our big catalog—a postal will do.

Wood-Crane Company

141-149 Main Street
San Francisco, Cal.

Thousands of Feet, New and Second-Hand WATER PIPE

Positively lowest prices—all sizes. Finest water pipe, well and water casing, riveted and irrigation pipe, wrought iron fence posts, etc. Big stock. Prompt shipments anywhere. Write, phone or wire for quotations.

Adams Pipe Works

Under entirely new management.
2025-39 Bay St., Los Angeles.
Broadway 1264—F1917.



BLASTING Saved this Orchard

"The use of Farm Powders in the orchard industry is rapidly being learned and appreciated," writes E. H. Shepard, editor of *Better Fruit*. "The worst looking orchard I ever saw, suffering from lack of drainage, was blasted two or three years ago and now looks as fine as any well-kept orchard in the Hood River Valley." By blasting the soil of your orchard with either of the

GIANT FARM POWDERS

STUMPING — AGRICULTURAL

you can insure better drainage, save fertilizer, and keep your trees in heavy bearing. By planting in blasted holes you can make your new trees grow faster, bear earlier, and yield better, bigger crops.

Using just any dynamite for soil blasting is like taking medicine in the dark. Get Eureka Stumping Powder, one of the Giant Farm Powders. It has a slow, disruptive, heaving, far-reaching effect, entirely different from the quick, shattering, cutting, localized action of most powders and dynamites. Its use in your soil will prove profitable, because it does the work right.

Five Books FREE

Now—before you lay this down—write us to send you our book, "Better Orchard Tillage." It contains information that is worth many dollars to you. Other books—on Stump Blasting, Boulder Blasting, Ditch Blasting and Subsoil Blasting for farm crops—also free on request. Mark and mail the coupon.

THE GIANT POWDER CO., Con.
Home Office: San Francisco
"Everything for Blasting"
Distributors everywhere in the West

FREE BOOK COUPON

The Giant Powder Co., Con.
216 Kohl Building
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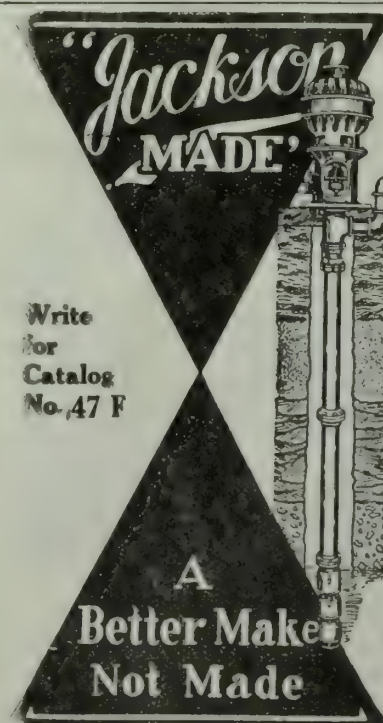
Send me your illustrated book on the subjects which I have marked X.

Stump Blasting
Boulder Blasting
Subsoil Blasting
Tree Planting
Ditch Blasting

Name

Address

Write below your dealer's name.



For Water Deep Under The Ground

Jackson Deep Well Turbine Pumps give continuous and efficient service. They do not get out of order as they have no valves or plunger rods. Very little care or attention needed as they are oiled from the surface. Are much lower in cost than other types of deep well pumps when the expense of dug pits, cribbing and timbering is reckoned. They raise water from the very bottom of the well, thus eliminating heavy vacuums and delivering all the water the well yields. They develop slow wells and increase their flow.

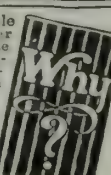
Like all Jackson Made Pumps These Deep Well Turbine Pumps Are the Very Best Pumps Made for the Purpose—They are Dividend Earners, Not Expense Makers

Whatever your water problems may be our Expert Pumping Engineers will help you out free of charge—write

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The liveliest little Engine Book ever published. Tells the principles of gasoline construction so plain and so interesting that any man or boy will enjoy reading it. Write today.
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Placed anywhere, DAISY FLY KILLER attracts all flies. Neat, clean, ornamental, convenient, and lasts all season of metal, can't get over, will kill anything. Guaranteed. Ask for Daisy Fly K. Sold by dealers, or by express, prepaid. HAROLD SOMERS, 180 DeKalb Avenue, Brooklyn

Belting

That Must Make Good



When you buy a rubber belt you should know what service it will give you or have the belt service guaranteed by a responsible firm who will make good in case the belt falls down. Every belt-buyer should know how to judge a rubber belt, and we would like to send you a free sample of Test Special together with our folder that will tell you just how to judge a rubber belt so that you may know just what service you will get from any belt you buy.

Fill out the coupon and mail it to us and we will recommend a belt that we will unqualifiedly guarantee to do your work satisfactorily. We have had seventy years' manufacturing and selling experience.

NEW YORK BELTING & PACKING CO.
519 Mission St., San Francisco
Established 1846
FILL OUT THIS COUPON—MAIL IT TODAY

New York Belting & Packing Co.,
519 Mission St., San Francisco.

Send me samples of Belting that you will guarantee to give satisfactory service on my work and quote prices delivered at _____

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H.P. { Gasoline Engine _____
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Diameter of Driving Pulley _____
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Kind of Drive { Cross _____
Straight _____
Perpendicular _____

Width of Belt _____ Ply _____

Distance Between Centers of Pulleys { _____

Revolutions per Min. of Driving Pulley { _____

Kind of Machinery Driven { _____

My Dealer's Name _____

My Name _____

Address _____

A pocket memo booklet giving speed and power tables will be sent FREE to all who mail this coupon.

FAMOUS LUITWIELER PUMP

Correct in every detail. No trouble. Cheaper water. Perfect satisfaction. 2 Irrigation Booklets free. Luitwiler Pump Eng. Co., 713 N. Main St., Los Angeles.

desirable fire protection as well as water distribution to the house and poultry yards.

The grindstone has been fitted with a big wooden pulley wheel, on its axle and inside the frame. A belt from this to the engine saves many backaches and takes the place of the small boy who is sometimes unavailable when rush work is to be done.

TRACTOR RUNS SILAGE CUTTER.

[Written for Pacific Rural Press.]
The Hollister Estate of Lompoc recently bought a No. 15 Acme silage cutter and alfalfa chopper. They expect to use it on their next cutting of alfalfa, according to the De Laval Co., though storage room must yet be built. The same is true of the silage and silos. A tractor engine is to be used to run the cutter, which is mounted complete with blower, on a truck. It is designed to chop 1800 pounds alfalfa meal or 10 tons green corn per hour with 7 to 10 h.p. The engine may be placed on either side and in front or behind the machine, to provide a chance to place it in the most convenient position.

To avoid damage if hard substances should get into the knives, a soft bar keys both the fly wheel and the belt wheel to their shaft. If the knives stop, the bar is sheared, and the wheels whirl on harmlessly until stopped.

FALL APRICOT IRRIGATION.

[Written for Pacific Rural Press.]
Irrigation and pruning of apricots right after the fruit is off are greatly favored by G. H. Waters, characterized as the fruit man around Pomona, Los Angeles county. One of his orchards, near Ontario, contains 37½ acres of 14-year Royal trees besides 7½ of peaches. He irrigated twice last fall, the first time in furrows, the second by flooding. He pruned in Sept. having to change around to keep out of the water. This is held responsible for the best crop prospects last spring, of any in his neighborhood. The orchard had a fine crop in 1915 also.

The soil is light and sandy for 12 feet down, below which is gravel. He has a well 356 feet deep from which the water is lifted 100 feet with a Layne & Bowler pump developing 125 inches, being run by a 50 h.p. motor.

GOOD MACHINES POORLY KEPT.

[Written for Pacific Rural Press.]
A capital example of shiftless care of expensive machinery was seen in San Bernardino county last spring. A 60 h.p. General Electric motor was set on a concrete pedestal in the horsebarn without partitions or cover. Hens roosted on it and the interior of the frame was correspondingly filthy. The barn had no floor and was not cleaned regularly. Dusty, dirty So. Cal. Edison Co. transformers, switchboards, and electric meters were partitioned off with chicken wire.

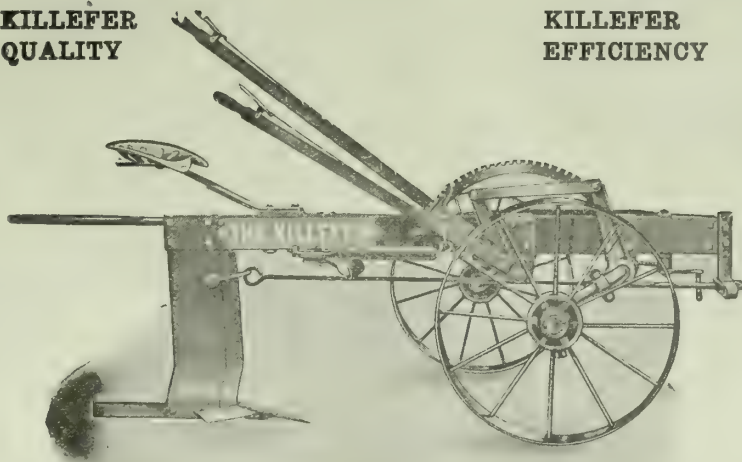
At the other end of the little shack was a big Layne & Bowler centrifugal pump whose base was buried in manure and straw. It had an 8-inch outlet pipe to a Western Pipe & Steel tank outside, set on a tower 10 feet high. Direct connection with the fields was secured at pleasure by running the water into a 30-inch concrete standpipe 8 feet high, instead of into the tank.

1 or 2 Row Beet Plow



**KILLEFER
QUALITY**

**KILLEFER
EFFICIENCY**



Was designed for the smaller grower where traction power was not available for handling the larger plows. The draft is very light and no more weight has been used than was necessary to give the proper strength.

The axles are large with long wheel bearing. This plow is equipped with a compound lever which enables the driver to level it to any of the irregularities of the ground. At the same time it is only necessary to use the one lever to raise the plow at the end of the row. The compound lever works in connection with a heavy coil spring, which assists materially in handling. The foot lever controls the shifting hitch and is below the frame, making it much easier on the driver than the old style.

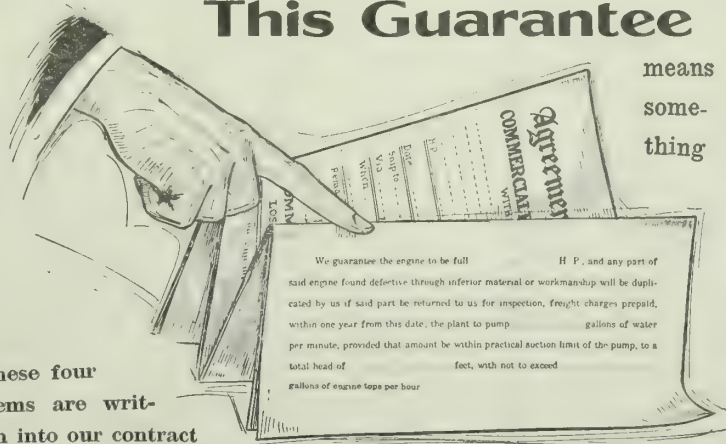
We build this plow with either straight, sloping, or bent standards and with any style of wing or point required.

The Killefer Manufacturing Co.

2209-21 Santa Fe Ave., Los Angeles, Cal.

This Guarantee

means
some-
thing



These four
items are writ-
ten into our contract

AN IRONCLAD WRITTEN GUARANTEE PROTECTS THE PURCHASER OF EVERY COMMERCIAL ENGINE

You don't have to depend on oral statements. We write in the contract a definite guarantee stating exactly what the installed equipment will do in volume, power and cost. Write for our handsome new Catalog, explaining the superior features and economies of COMMERCIAL ENGINES.

Commercial Engine Co.

PORTER ST., LOS ANGELES, CAL.
Branch: 1228 "H" St., Fresno, Cal.

Studebaker

HAS BEEN CONTINUOUSLY MAKING
WAGONS—BUGGIES—HARNESS
FOR EVERY FARM USE SINCE 1852

SEE THE STUDEBAKER DEALER

General Agricultural Review.

GRAINS AND FIELD CROPS.

Lake county Agr. Club boys are raising fine corn.

Lovelock, Nevada, hay ranchers need more men for the season.

Many Alpaugh beet fields have yielded 18 to 20 tons per acre this season.

A Tulare county farmer raised 13,000 sacks of wheat this season at 9 sacks per acre.

West side San Joaquin barley growers are said to have sold practically all their crop.

Turlock watermelons opened at \$12 per ton. Standard crates cantaloupes \$1.50 to \$2 per crate.

About 40,000 tons of new barley are said to have been shipped east by rail previous to July 14.

The Turlock Merchants and Growers' Ass'n sold a lot of cantaloupes in San Francisco at \$2.25.

Beet sugar in U. S. is estimated at 2,000,000,000 pounds this year as against 5,000,000 pounds in 1890.

Two British ships have been loading barley at San Francisco for Great Britain. Others will follow.

Imperial Valley barley was short and the Valley is buying from San Francisco through Los Angeles.

Chino beet growers get their 50 cents bonus per ton for 15 per cent beets, on delivery instead of next year.

A splendid yield of blackeye beans is promised in Stanislaus county. A large acreage has been contracted at 4 cents.

Barley sales at \$1.50 to \$1.52 1/2 f. o. b. Port Costa are reported from Tracy and \$1.41 1/4 f. o. b. bank at Grayson.

A Humboldt county cauliflower grower wants to know why the county does not produce all the vegetables they eat.

Two of the biggest San Francisco barley buyers are reported to have recently gotten busy after holding off all season.

The good Santa Ynez hay and grain crop is being used within the county this year instead of selling outside as usual.

The third crop of Stanislaus alfalfa is all cut and the last irrigation for the season being applied. It is selling at \$9 in the field.

Oakdale Alfalfa and Almond Festival Sept. 22 and 23. All growers urged to exhibit their best of all agricultural and livestock products.

The American Beet Sugar Co. has leased 10,000 acres in Kern county on which they hope to colonize Belgians and build a factory.

Livermore valley hay is over half sold. Prices are \$13 to \$15 for wheat hay and \$11 to \$12 for barley and volunteer.

Imperial Valley cotton crop is estimated at \$7,000,000 from 100,000 acres, an increase of 20 per cent in acreage and 42 per cent in yield per acre over last year.

Harvesting cantaloupes and melons has started in the Turlock district. A good crop is on the vines and a good profit expected by the Turlock Merchants and Growers' Ass'n.

Heavy rains have prevented many Michigan and New York bean growers from planting. Cal. is estimated to produce about 1/4 of the beans of U. S., Mich. one-half, and N. Y. 1/4. It is estimated that 10,000,000 bushels are produced per year in U. S.

Arakelian Bros., who "did not know" that the cantaloupe and grape standardization law applied to them, have 1940 acres of cantaloupes near Calexico and Heber, from which they have shipped about 975 carloads. They have taken temperatures on carloads of cantaloupes going East, in order to find the conditions of fruit and temperature en route so they can recommend improvements in refrigeration and de-

termine proper maturity at which to pick.

CITRUS, NUTS, SEMI-TROPICAL.

The second annual Esparto Almond Festival is to be held this fall.

There are about 2000 carloads of lemons still to be sold this season.

Esparto almond growers sold Nonpareils Jul. 13 at 17 1/2 cents, IXLs 15 cents, and Drakes 13 cents.

The unusually large size of navels this year required a special advertising campaign by the Exchange.

An inquiry for 10,000 gallons olive

oil came to the Cal. Associated Olive Growers a few days ago from a New York firm.

Average navel prices have been 35 cents per box higher this year than either of the past two years, according to Ass't Mgr. E. G. Dezell of the Exchange.

Stanislaus fig crop will be heavy and is being contracted at 7 7-8 cents. B. W. Acock, who has 10 acres of Smyrnas, expects to average two tons per acre from his 14-year trees.

Oroville olive growers at an enthusiastic meeting Jul. 13 were addressed by Col. Weinstock who advocated State inspection and a State

label to give confidence to the market and make financial loans easy.

Citrus shipments this season have not been quite as large as last year, but the price has been uniformly better so that the crop will return \$34,000,000 to growers this year as against \$32,000,000 last year according to the Anaheim Gazette.

The California Associated Olive Growers, a reorganization of the recently gasping Cal. Ripe Olive Ass'n, took \$40,000 subscription to capital stock on the Associated Raisin Co. plan during the first ten days of July according to T. E. Foster.

A meeting of olive growers, packers, etc., July 10, agreed that Mis-

MID-YEAR MODEL
73 New Ideas

Mitchell
SIX

\$1325 f.o.b. Racine
26 Extra Features

He Spent \$5,000,000 To Create This Model Factory and to Perfect This Car

What we offer you here—in this Mid-Year Mitchell—is John W. Bate's finality. He says that his work is done.

John W. Bate is the greatest efficiency engineer in America in machinery-making lines. He has been for 30 years.

Years ago we brought him to this plant. We gave him free rein, and paid him his price. We gave him all the time he wanted. Since then he has applied his genius in efficiency to this factory and this car.

Cut Our Costs 50%

He has spent on this plant and its ideal equipment nearly \$5,000,000. He designed every building, selected every machine.

He has made 10,000 factory savings. He has cut our costs 50 per cent. No other factory in the world could build this Mitchell at anywhere near our cost.

He has also built car after car, perfecting each separate part. This Mid-Year Mitchell is his 17th model.

He has studied simplicity, studied lightness and strength. He has displaced hundreds of castings with light, tough steel. There are 440 parts in this Mid-Year Mitchell which are either drop forged or steel stamped.

He has used a wealth of Chrome-Vanadium steel. He has figured big margins of safety. The result is almost a lifetime car.

One Mitchell has run 218,732 miles. Six Mitchells have averaged 164,372 miles each—over 30 years of ordinary service.

Experts Select It

Famous engineers, when they buy cars for themselves, are choosing the Mitchell now.

Your Mitchell dealer has a list of them—men of nation-wide fame. They are men who know cars as you know soils. All bought for their own use this Mitchell car, built by John W. Bate.

73 Things You Want

This Mid-Year Mitchell brings out 73 new conceptions. At the New York Show our experts and designers examined 257 of the latest models. And all the best new ideas—all that people liked best—are combined in this single car. You never saw a car so handsome, so up-to-date and complete.

In addition, this car gives you 26 costly extras. Each is something that you want, but in other cars they cost an extra price.

One is a power tire pump, one reversible headlights, one a costly carburetor, one a cane control. One is cantilever springs, of which not one has ever broken. There are 26 such extras in this Mid-Year Mitchell, all paid for by our factory savings.

New York's Favorite

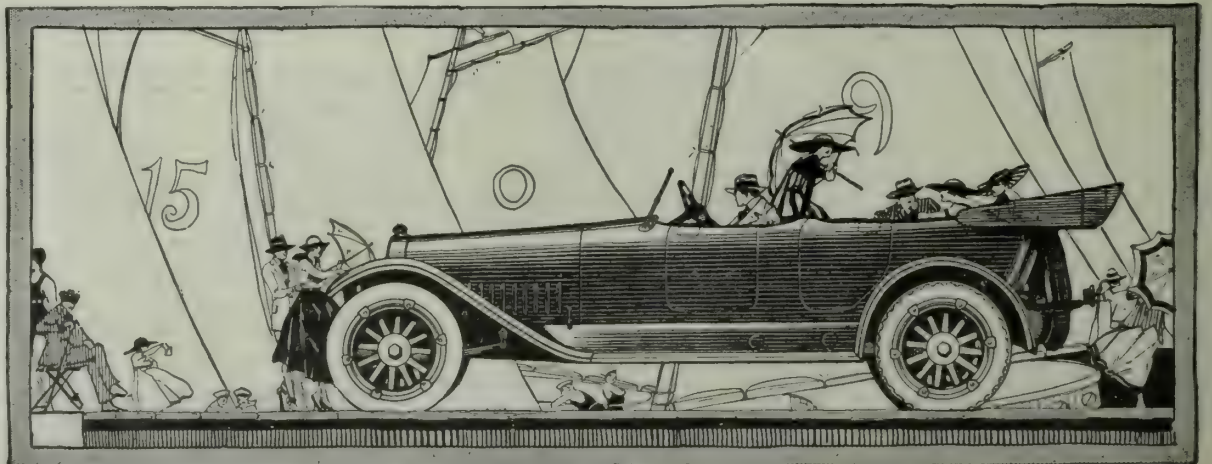
When this Mid-Year Mitchell arrived in New York it became the fine car sensation. Our New York dealer at once ordered 2000 to supply the metropolitan demand. Ever since his demand for this car has been greater than he could supply.

This car will surprise you. You have seen nothing like it in beauty and luxury. You have never seen a car built like this, and never a car so complete. You have never seen a car so easy to drive, so trouble-proof, so durable. And never such value for the price.

If you don't know your Mitchell dealer ask us for his name.

MITCHELL-LEWIS
MOTOR CO.
RACINE, WIS., U. S. A.

\$1325 F. o. b. Racine
For 5-Passenger Touring Car or
3-Passenger Roadster
7-Passenger Touring Body \$35 Extra
High-speed, economical Six. 48 horse-power; 127-inch wheelbase; complete equipment, including 26 extra features.



sions and Manzanillos for ripe olives should not be picked until part of the surface is red or darker, that for the season Oct. 15, 1916, to Mar. 15, ripe olives ready to ship should have 15 per cent oil, not more than 120 per pound, must be palatable, sanitary and of good texture in the judgment of a State Inspector, and uniform coloring by exposure to air is not harmful.

GRAPES AND SMALL FRUITS.

Humboldt farmers are thinking of planting more dewberries.

The big wine plant at Guasti was completely burned July 4, with wine valued at half a million dollars.

Keystone and Brawley Thompsons and Malagas will total 55 carloads as estimated by the Brawley Fruit Exchange.

The Fresno county grape grower who last season thought himself independent of the standardization law and appealed his case when fined by a jury in a lower court, was convicted again in the superior court, and the appellate court refused to consider further trial.

DECIDUOUS FRUITS.

The Porterville cannery started July 12.

Two cars of canning peaches were shipped from Atwater Jul. 13.

Over 5,000 tons of dried peaches have been shipped from Cal. since Jan. 1.

Eastern peach shipments from Tulare and Fresno counties started this year.

Madera county growers say there will be more fruit planted there next year than this.

The Cal. Canneries plant at Yuba City started with about 300 employees last week.

The Healdsburg section expects to put out 12 to 15 cars of Gravensteins this season.

Ventura apricots for canning were all shipped before Jul. 7; and drying was finished last week.

The U. S. apple crop is about 5 per cent shorter than last year according to U. S. Dept. Agr.

Coast markets have been taking most of the Gravensteins, but Eastern shipments are commencing.

Armona, Kings county, reports having shipped a carload a day of Early Crawfords to Los Angeles.

Fresno keeps a municipal employment bureau which sent about 1000 fruit workers to jobs last season.

Visalia Tuscans are reported a better crop than for several years, and have been sold at a better price.

At the Campbell, Santa Clara county, canneries, apricots are all packed and peaches and pears are coming in.

The Kingsburg cannery, which opened on Fosters and Tuscans last week, reports short tonnage available.

The Beaumont Fruit Growers' Ass'n shipped its first carload of apples July 6. They were Summer Champions and went to Tucson, Ariz.

Fruit pickers and other workers may enroll for jobs free of cost at the State Employment Offices in Sacramento, San Francisco, Los Angeles, and Oakland.

Vacaville carload fruit shipments for the week ending July 12, 1916, were 122 and for the season to that date 723. Corresponding figures for 1915 are 57 and 385.

The National Apple Growers' Ass'n was recently organized in St. Louis to promote consumption of apples. The Santa Clara Growers' Information Bureau sees here a strong competitor for prunes and all the more reason for organization.

An acreage voting scheme for co-operative associations, which reduces the proportional voting power per acre of the larger growers, so that there would be less possibility for them to control the organization, is proposed by S. H. Shelley of San Jose.

The California Fruit Exchange has not refused to join the proposed State Market Distributing Bureau. Most of the other shippers agreed to it and the Exchange directors simply put it up to their manager, J. L. Nagle, to decide after further investigation. The Exchange has been widely misquoted as having refused.

William Glass of the Fresno Republican, who has for the past year given so liberally of his time and auto facilities for the organization of the peach growers, was elected president of the association; but now that it is well on its feet, he has resigned to spend his time at his own work.

Fifteen counties were represented at a horticultural commissioners meeting in Fresno July 15. They recommend that the standardization law be made uniform and State-wide, favor Market Director Weinstock as the enforcer of the law, and praise his activities. They also discussed county horticultural quarantine ordinances with a view to uniformity, according to horticultural commissioner O. E. Bremner of Sonoma county.

MISCELLANEOUS.

The Solano Farm Bureau is trying to get the county supervisors to clean thistles from the roads.

The Byron Times is out with its

Fifth Booster Edition and it reflects great credit on its editor, Harry Hammond. Besides being a booster edition for San Joaquin and Contra Costa counties, it contains valuable information about dairying, farming and fruit raising in these counties and the Delta region, is beautifully illustrated and written by men prominent in the agricultural field.

Farm products shipped from Byron during the past year were 7000 tons hay, 2500 tons barley, 500 tons wheat, 30 tons alfalfa seed, 5 cars horses, 50 cars lambs, and 5 cars cows.

"California Garden Flowers."—\$1.50 Postpaid . . . Pacific Rural Press



ON even the best of farms there are uncultivated "bald patches" caused by old stumps, rocks, or a bit of swampy ground. There may be some on yours.

Under the methods formerly employed the expense of clearing such a patch seemed more than the land was worth. But every foot of unproductive land is costly to you—is worth clearing if the clearing can be done cheaply enough. It can be by means of

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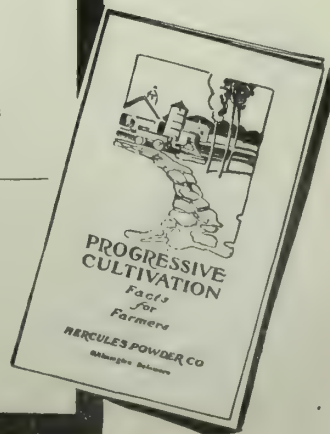
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Easy Way



What Dairy Herds Did 40 Years Ago.

Now that interest in cow-testing in California is to be stimulated by a State-wide contest to show producing superiority, under the direction of the University, in which we hope many of our readers will take part, the following outline of a report on herd averages seems pertinent. It is from the Report of the U. S. Department of Agriculture for 1876, page 422:

The eleventh annual convention of the Ohio Dairymen's Association was held in Cleveland, Ohio, in January 1875, and was well attended by representatives of the dairy interests in this and other states. Edward J. Wickson, of Utica, N. Y., in an address on the future of dairying, said:

"I have authentic reports from ninety cheese-factories and creameries, located in widely different localities, giving the average net return per cow to patrons, the highest average per cow to a single patron, and the lowest average per cow to a single patron. The figures are drawn from the actual records of the yields of more than 36,000 cows. In these factories, during the season of 1874, the average yield per cow was \$39.57. In the individual factories the highest average per cow reported was \$55.07, and the lowest per cow in a factory running the same number of days was \$31.22. Taking all the cows into the account, it appears that the average return per cow for the season of average length was \$39.57. It will be remembered that these figures are factory averages, not average yields in single herds.

"It appears from comparing the reports of these ninety factories that the average return net to patrons per 100 pounds of milk has been \$1.22. The highest net yield is \$1.38, and the lowest 99 cents. I have been much interested in comparing the average returns per cow with the

average selling-price of the factory, and the pounds of milk required to make a pound of cheese, in order to determine how much of the large yield per cow was due to the dairyman and how much to the cheesemaker and salesman. In the factory reporting the highest average per cow (\$55.07) the selling-price of the season averaged 14.11 cents, and the milk taken was 9.76 pounds to a pound of cheese. Comparing this with the lowest average per cow (\$31.22), I find that the latter sold cheese for one-quarter of a cent less per pound through the season, and used nearly one-half a pound more milk to a pound of cheese on an average. But this difference in manufacture and price can form only a small part of the difference between the low mark at \$31 and the high mark at \$55.

"The main points in the profitability of dairies are vested in the farm, not in the factory, as the following figures show. Of the dairies sending milk to the sixty factories, the best season's average per cow is \$82.17, and the average of all the highest dairies reported by the factories is \$50.04. The lowest yield in a single dairy carrying to the factory during a long season is \$14.50 average money to a cow and the average of all the poor dairies reported is \$29.34 per cow. Now, the question arises, and it is of the utmost importance to the man who is working for the profits of the dairy, whence comes this great difference in the returns from the dairy-herds? Is it in the soil, the pasture, the cow, the feed, and care in the factory, and how much influence does the final resort, the market, exert upon the dairyman's receipts? I believe that all of these things are factors of the result, and that every one of them should be scrutinized to see whether there cannot be some element of improvement introduced."

Orchard Man Keeps Sheep.

[Written for Pacific Rural Press by John J. Fox, Napa.]

Interest in the small flock is increasing all over the State not alone because of the value of sheep for their mutton and wool but because they must become a great factor in the upkeep of farm and orchard.

Now that the large ranges are disappearing and small ranches taking their place, the cost of raising meat has gone up and better quality in both meat and wool is demanded. That this demand will be satisfied is shown by the scientific interest evinced by the new growers. Once a man becomes interested in sheep, he finds there is a lot to learn in the matter of their selection, breeding, feeding, and management. No live stock pays so well for the cost of care expended.

In September, 1913, E. C. Spear of St. Helena bought the well-known Hood band of 500 Merino ewes. Mr. Hood of Mendocino county had been buying the best bucks he could get and culling his ewes for 20 years always with a heavy fleece in view.

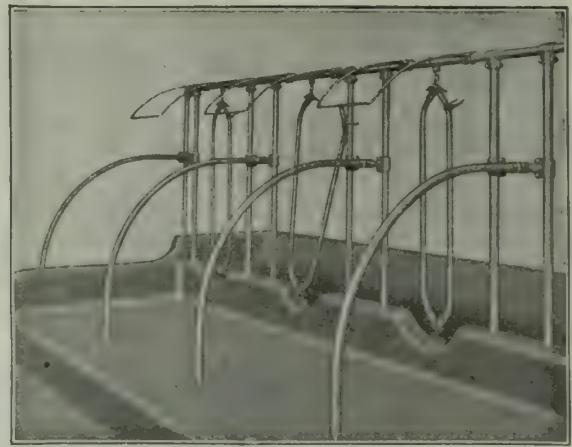
Mr. Spear is a prune grower at St. Helena and also has a piece of rich bottom land that is well farmed.

Alfalfa, beans, corn, and roots are grown every year. He keeps his choicest sheep on the home place, the balance of the flock being kept on rented pasture.

Mr. Spear says, "In culling my ewes at shearing time every ewe's teeth are examined and her fleece weighed. Then she is judged for size, type, and vigor. If she falls below my standard she is branded with the cull mark and drafted out of the flock. I draft in the pick of my two-teeth ewes every year.

Type Aimed For.—The "C" type is the most desirable though it is considered good practice to use occasionally a light "B" type heavy shearing ram to increase the weight of the fleece.

"I am a strong believer in good sires. Have had three shear as high as 30 pounds each. Last fall I purchased a yearling ram from I. W. Jackson of Washington that was a winner in the "C" class at the P. P. I. E., sired by the Grand Champion. This yearling sheared 36 pounds, the fleece having been left long for the Exposition. I expect to use him on

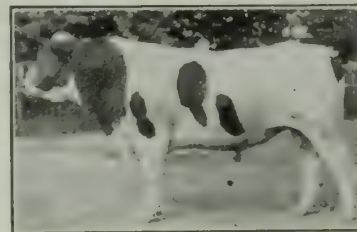


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When you buy a son of our herd sire, Prince Alcartra Korndyke, you get more than a Holstein bull with registration papers—you get a grandson of the world's greatest milk cow out of a high-testing A. R. O. dam. Our herd of females has been developed into one of the best in the State.

Our supply of these young sires is always limited, but we have a few now which we are offering at very reasonable prices.

Write us at once, or call and see the herd.

J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

A Jersey Opportunity

Having disposed of my farm, will sell one-half of my herd of 30 Jersey cows and 20 heifers, 10 bull calves, and 2 bulls. Most of the cows are in the Register of Merit class and ten will make 500 pounds or better.

Here is an opportunity to buy richly bred Registered Jersey cows with good records, and daughters of high record cows.

If you want good stock at reasonable prices, come and see this stock.

Willowood Jersey Farm

C. G. McFarland, Prop.

Tulare, Cal.

large smooth "C" type ewes that have this year sheared not less than 13 pounds each.

"I also purchased a 2-teeth ewe, also a winner in "C" type at the P. P. I. E. that sheared 24 pounds.

"I keep 25 ewes and their lambs here on my home place; and don't feel the cost of keep, as they get most of their living on what would otherwise go to waste. Last winter they did well on bean straw fed to them in the barn, also going out in the prune orchard when it was dry enough. From the 25 ewes I raised 30 lambs. One ewe that sheared 13 pounds of wool raised twin lambs; and one of these twins at 4 months old, went to the butcher weighing 100 lbs. at 8 cents a lb. The other lamb will weigh 60 lbs. So far the butcher has had all the ram lambs.

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A safe, speedy and positive cure. The safest, **Best BLISTER** ever used. Removes all bunions from Horses. Impossible to produce scar or blemish. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Cleveland, O.

"My range sheep average 10 pounds to the fleece, sold at 27½¢ a pound f. o. b.

"My main flock of ewes runs from 2 to 4 years old. I have two unrelated Hood bucks, 4 yearling bucks purchased of F. Meacham, and two one-year bucks purchased of E. Bulard, besides the Jackson buck."

Where live stock is needed to keep up fertility of orchard, and to eat waste apples and weeds round the fences, the sheep, even in small numbers, is coming to stay.

Milk 27 Cents Per Hundred for Hogs.

[Written for Pacific Rural Press.]

One of the few dairymen in Humboldt county who find it more profitable to feed their skim milk to hogs than to sell it to the creamery for casein manufacture at 27 cents a hundred is Nate Hauck of Alton.

Mr. Hauck has been a breeder of purebred hogs for a great many years, until just recently being compelled to sell his surplus locally and to the mountain trade.

Originally he raised Berkshires, but in 1905 he changed to medium type Poland-Chinas because his mountain trade requires a hog that does not become wild on the ranges, and the Poland-China filled this requirement better than the Berkshire.

In 1910 the change from medium type to large type Polands was started, the larger boned and framed hog being more popular with the mountain buyers. And it is from some of the best large type boars that have been brought to the State from Middle Western breeders that Mr. Hauck's present herd is the offspring.

In developing his hogs to the desirable size at an early age Mr. Hauck has special feed and climatic advantages, the weather being cool at all times, and a wide variety of

feeds being available most of the time.

Alfalfa, clover, rye grass, oats, and vetch comprise the different pasture crops, supplemented in the fall and winter with carrots and beets. As a further supplement, all of the skim milk from the 16 cow dairy is fed in connection with ground barley and other concentrates in the combination farrowing and fattening house.

This house has a central feeding alley, with five large farrowing pens on both sides and a commodious feed storage and mixing room at one end. It is well ventilated and lighted with windows on the south side and equipped with a concrete floor that drains to gutters along the feed alley.

Each farrowing pen is equipped with a movable platform or floor, large enough to provide the sow and her litter sleeping quarters, off from the cold concrete. These are placed in one corner of the pens, guard rails being provided. Division panels are movable, upward and downward, by having them run in grooves at the ends. This sliding division panel is unusually convenient in transforming the pens into larger fattening pens when conditions warrant it. Except during farrowing seasons, the enlarged pens are used in feeding the young stock.

Adjoining the building on either sides are open-air pens, which in turn are connected by gate with the pastures. In some pens where young stock is being fed, self-feeders are provided.

Ten sows are usually reserved, but more are being kept now, owing to the enlarged market available, since rail connection has made outlet to other parts of the State possible.

That Mr. Hauck not only gets good returns from his skim milk, but from all other feeds, is indicated by the weights he secures. One pig farrowed March 5, taken at random from 40 or 50 others of the same age and weighed at the time of the writer's visit, June 16, weighed 120 pounds. A nine-months sow which Mr. Hauck expects to exhibit at the fall fairs tipped the scales at 355 pounds.

But feed and cool climate are not alone responsible for such gains. Breeding is also a factor, and while this herd has been rather isolated from the rest of the State, Mr. Hauck has been a crank on good boars, having used such boars as Iowa Wonder, by A Wonder, Longfellow 3rd, and Long Model. The last named is capable of making 1,000 pounds or better when fat and is still in use in the herd. During the past winter Cantrall's Ideal, a son of Big Joe, has been purchased. As a yearling, this boar weighs 500 pounds and is a model of refinement. He will be used as herd sire in the future.

Taken as a whole Mr. Hauck's disadvantages in the way of distance from the large hog-raising districts and his high-priced milk, seem to be more than overcome by cool climate, variety of feed, and choice breeding.

W. S. Corsa of Illinois recently bought a daughter of the Berkshire Laurel Champion from Winona Ranch, Grants Pass, Ore.

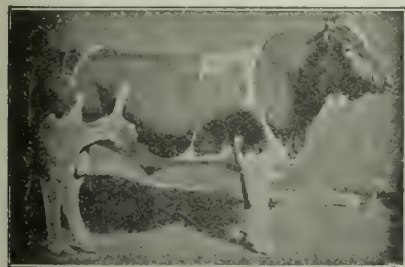
Son of Segis Pontiac De Kol Burke READY FOR SERVICE.

We are offering at a very low figure a splendid son of this coming young sire. Born March 6, 1915.

His record dam has the following records:

Butter 7 days 26.41 Milk 605.5
Butter 1 year 755.40. Milk 20260.2
She is a daughter of Ignaro De Kol, ten of whose daughters have records above 20,000 pounds milk, including Aralla De Kol 28,090. Three nearest dams of this bull average 26.68 lbs. butter, 668.8 lbs. milk. Dam and sire's dam average 920.27 and 24,543 lbs. milk in yearly test. A full sister to his dam has produced 885 lbs. butter in one year.

Price and pedigree on request.



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1st Prize 2-year-old Cal. State Fair 1914.
Segis Pontiac de Kol Burke.

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Shropshire Rams

By Imported Canadian Sires and Pure-bred Ewes.

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now and you can pay September 1 without losing the cash discount.

Prepare to take care of your corn crop and last cutting of alfalfa. Prepare against high cost of feed again next Winter.

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HERD BOAR, ROYAL POINTER 2nd, 197092, First Prize
Senior Yearling, P. P. I. E.

3 REGISTERED HOLSTEIN BULLS from High-Testing Cows.
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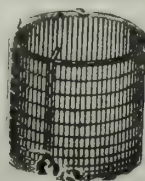
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On April 21st we arrived from Missouri with a carload of choice registered Bulls and Heifers.

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With the Livestock Men.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

SWINE BREEDERS AND STOCK.

A. M. Smith of Visalia has received four bred sows from Winona Ranch.

Geo. Barton, Clements, recently bought a Poland China boar from W. A. Young.

A. B. Humphrey has bought a young daughter of Laurel Champion from Winona Ranch.

H. P. Thornton of San Francisco recently bought 50 acres near Alpaugh for an alfalfa-hog ranch.

Donald H. Graham of Lancaster recently bought 10 registered Duroc bred gilts from Peters, Lamson, and Walker of Devore.

About 250 hogs died from cholera in Antelope valley from April to July 12, at which time the disease had about subsided.

Carl Ginn's dairy and hog ranch at Corcoran was recently found healthy and sanitary by the Kings county livestock inspector.

W. H. Dement of Acampo is just beginning purebred Poland Chinas, having secured a boar pig and four sows from W. A. Young of Lodi.

Three carloads of purebred Tamworths were received July 12 for the Bob Blankenship ranch near Heber from J. W. Sefton Jr. of San Diego.

W. A. Young of Lodi writes that he sold 17 young Poland Chinas in the two weeks ending July 12. A boar and ten bred gilts went to B. G. Cline and M. C. Bolts of Willows.

Frank Brown of Burbank has a litter of seven "perfect" Hampshire pigs out of Bonsell Queen and sired by Paloverde Pinto, a first prize winner at Nevada and Arizona State Fairs.

R. L. Robinson of Fair Oaks reports delivery of four registered Chester White gilts to the following parties last week: Geo. B. Henery, W. W. Hinsey and Mr. Dufour, all of Fair Oaks.

Duroc breeders missed a great chance to get fine stock cheap at the consignment auction held at French Camp July 15. The highest price, \$70, was paid for Girlie of Mossdale by Henry Eckles of Woodland. About 60 hogs were sold. Prof. J. I. Thompson, D. O. Lively, and Dr. B. J. Cady gave short addresses.

J. W. Henderson of Berkeley shipped a Hampshire boar to Frank Brown of Burbank. The boar got lame and almost blind on the way. When Mr. Brown complained, Mr. Henderson wired him, "Knock him in the head. Am shipping you another." By that time the boar was better and a telegram stopped shipment of the second one.

The five pigs entered in the Exeter High School contest were sold at 7 cents per pound. Collin Montgomery won first prize, and C. Balaam second.

HORSES, SHEEP, GENERAL.

Six Shropshire rams arrived from England last week for the F. A. Mechem flock.

Weight of American fleeces has been increasing year by year according to U. S. Dept. Agr.

Appointment of an Alameda county veterinarian is being agitated to guard against epidemics.

The U. S. War Dept. recently advertised for bids on 50,000 horses and mules; and the lowest bid at San Francisco was \$157 a head.

The U. S. Sec. of Agr. has appointed an advisory committee of 5 members to supervise all livestock sanitary and quarantine questions.

The F. A. Mechem Estate recently bought four American Merinos from the Hansen flock of Utah and two Rambouillets from Ohio.

Miss Betty Park of Santa Barbara county bought a purebred Romney ram at P. P. I. E. but has since been unable to get purebred ewes.

American sheep raisers will receive about \$75,000,000 for this year's wool crop. The country averages about 37,000,000 fleeces annually.

The Stanislaus Live Stock Show and Exposition Sept. 18 to 23 will follow the same lines as the Chico fair with addition of fish, lumber, baby, and school displays.

Hanford merchants are planning a guarantee fund for the Kings county fair since the supervisors could not help this year. Baby show here too.

A. H. Tilton of San Bernardino is moving his Percheron stock to Prescott, Ariz., where he also has some 60 purebred Herefords. Five registered mares will be sold, but the stallion, Loussett, imported from France by McLaughlins, will be sent to Ariz.

"Eureka" clover is advertised as yielding 300 tons green forage per acre in Oregon. This is the same plant that was widely advertised and distributed in 1893, and later, says U. S. Dept. Agr. It was tried out at many experiment stations and on many farms, but never came into favor.

DAIRYMEN AND DAIRYING.

H. O. Smith of Tipton recently bought 34 registered Holsteins.

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2 1/2c per word.

SWINE.

BILLIKEN HERD OF IMPROVED CHESTER WHITES—The kind that makes the money. Pure-bred—registered—cholera immune. An extra fine lot of weaned pigs—both sexes—representing the best and most popular blood lines this breed produces. Five different sizes used. Can mate up not akin. Quality combined with size. Rapid growing—early maturing. A few nice fall gilts that will be bred and ready to ship in September. Write for prices and circular. C. R. Cunningham, Mills, Sacramento County, Calif.

YOUNG POLAND CHINAS, LARGE TYPE—Boar IBA Wonder won first and Reserve Championship P. P. I. E., weighing 730 pounds under 2 years and in breeding condition. 60-day special—fine young sows bred to IBA Wonder at very low prices; also weanling pigs, either sex. Satisfaction, or money refunded. W. A. Young, Lodi, Cal.

REGISTERED DUROC-JERSEYS—All ages. We have produced hogs weighing 240 lbs. at 7 months, at a cost of 3 1-10 cents per pound, including pasture, grain and upkeep of sow. If you want some of the kind it pays to raise, we would suggest that you order immediately, as our spring stock is going rapidly. Haden Smith, Woodland, Route No. 1, Box 84D.

BIG TYPE POLAND CHINAS—The profitable money-making hog. The hog for the farmer. The real mortgage lifter. Large herd to select from. Bred sows, bred gilts, open gilts, weanlings of both sexes. Boars ready for light service. Extra special prices. Geo. A. Smith, Corcoran, Cal.

REGISTERED DUROC-JERSEY—Weanlings, shoats, pigs and boars. Unrelated. Many of our hogs are related to the several prize-winners at Panama Exposition. This herd is undoubtedly the finest in the State. Have had as many as 19 pigs to a litter. Grange Stock & Poultry Farm, Yountville, Napa Co., Cal.

HAMPSHIRE SWINE—Both males and females from Grand Champion 700-lb. boar and Grand and Junior Champion sow. Also Guernsey bull calves from Grand Champion bull. BELLA VISTA HERD, J. W. Henderson, 1st National Bank Bldg., Berkeley, Cal.

REGISTERED BERKSHIRES—World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Championships. Stock of all ages for sale. Grapewild Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

DUROCS, from River Bend Farm, St. Helena, Cal., are large type, smooth, rangy, with fine backs and deep cherry color. We sell only those we'd like to keep in our herd. Don't write us if you want cheap stock.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

FOR SALE—Fancy belted Hampshire hogs. Well belted young sows and boars registered. Prices reasonable. Ben F. Thorpe, Manager, Canfield Estate Ranches, Bonsall, California.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

REGISTERED PUREBRED BERKSHIRE PIGS—Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

IMPERIAL STOCK FARM BERKSHIRES—Registered stock of all ages. Prices and description on application. R. J. Merrill & Son, Morgan Hill.

LAKEVIEW STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

REGISTERED BERKSHIRES—For sale, bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

POLAND CHINAS—Young stock; either sex. Write for pedigree. Reasonable prices. Edw. A. Hall, Watsonville, Cal.

POLAND-CHINAS—250 lbs. in six months our aim. Imported sows. None better. Linn & Porter, Route A., Modesto, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

REGISTERED DUROCS—Herd headed by Crimson Moon arch 2nd. Write for prices. J. M. De Villiers, Patterson, Cal.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

REGISTERED IMPROVED CHESTER WHITES—Grizzly Bear Ranch, East Auburn, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

LARGE, QUICK MATURING registered Berkshires—Both sexes, \$10 each for weanlings. Older ones at farmer's prices. J. H. Bomberger, Modesto, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boudier & Son, Napa.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

REGISTERED BERKSHIRES—Weanling pigs, \$10 each. G. A. Casey, R. 7, San Jose.

REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. Mikesell, Manteca.

POLAND CHINA HOGS FOR SALE—Registration papers furnished free. C. A. Cooley, Durham, Cal.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

POLAND-CHINAS—Large Type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED POLAND CHINAS. Young stock for sale. J. H. Cook, Paradise, Cal.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRE PIGS—Write or call Greenwood Ranch, Brentwood, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington.

READAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED POLAND-CHINAS and Duroc-Jerseys. H. F. Harold, Orland.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROCS—All ages. Either sex. W. A. Pack, Hollister, Cal.

REGISTERED DUROCS from best Eastern blood lines. S. S. Southworth, Napa.

POLAND CHINA HOGS—Registered. Cholera immune. K. J. Miller, Llewellyn Ranch, Lathrop.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

CHAS. GODMAN—Breeder of high-class Berkshire Swine. Williams, Cal.

REGISTERED O. I. C.—Very reasonable. Geo. McGee, Calpella, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

REGISTERED DUROCS: Weanlings only. F. M. Johnson, Napa, Cal.

REGISTERED O. I. C. SWINE—O. D. CONWAY, Ripon, Cal.

REGISTERED DUROCS—H. N. Leininger, R. D. 4, Chico, Cal.

REGISTERED POLAND-CHINA HOGS—J. W. Wakefield, Acampo.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

BERKSHIRES—Carruthers Farms, Mayfield, Cal.

SHEEP AND GOATS.

THE BULLARD FLOCK RAMBOUILLETS—Founded 1870. Largest Merinos on Pacific Coast. The Bullard Company, Woodland, Cal.

FOR SALE—Shropshire bucks, yearlings and lambs. Individuals to carlots. Purebred but not registered. J. R. Bloom, Dixon.

FOR SALE—Choice Shropshire Buck Lambs. K. A. Holdridge, P. O. Box 282, Dixon, Cal.

KAUPKE BROS., WOODLAND, CAL.—Breeder and Importers of Hampshire sheep.

BREEDER OF MERINO SHEEP—Rams for sale. J. Bidegaray, Fresno, Cal.

BISHOP BROS., SAN RAMON, CAL.—Breeder and Importers: Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets, Hanford, Cal.

BEEF CATTLE.

FAIR OAKS RANCH, WILHITS, Cal.—Young registered Shorthorn bulls for sale. Sired by Landseer 379318, grandson of Imported Villager 295884.

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Paines Ranch Co., 320 Sharon Bldg., San Francisco.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

DAIRY CATTLE.

REGISTERED HOLSTEINS—Grandsons of King Segle and of world's record cow Creamella Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

REGISTERED HOLSTEIN bull calves. Sired by Lorena Korndyke Alcarra, whose dam made 29.75 pounds butter fat in seven days as a four-year-old. J. M. Campbell, Escalon, Cal.

REGISTERED HOLSTEINS—Sired by King Korndyke Hengeveld Ormsby 53822. From world record cows Pontiac Maid Ormsby and Duchess Skylark Ormsby. Geo. Kunios, Modesto, Cal.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

VENADERA HERD OF JERSEYS is now offering the better calves from register of merit cows with official yearly record. Guy H. Miller, Route 1, Modesto, Cal.

REGISTERED HOLSTEINS—Colantha Johanna Lad and Aralia De Kol breeding. Young stock for sale from A. R. O. cows. Lester A. Driver, Nicolaus, Cal.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3 lbs. cows. None better. Cheap for quality. N. H. Locke Co., Lookford, Cal.

HOLSTEIN BULLS—Well marked, large, straight individuals. Tuberculin tested. \$100 up. Packwood Farm Herd. W. F. Mitchell, Visalia.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

JERSEY BULLS—Serviceable age. Sons of Gerlie's Lad, who has two daughters that made over 600 lbs. butter as two-year-olds. A. A. Jenkins, Tulare.

REGISTERED HOLSTEINS—32 high-grade Holsteins helpers coming fresh this fall for sale. E. E. Freeman, Route B, Modesto, Cal.



SANTA ANITA RANCHO

ANOAKIA BREEDING FARM



Herd of Holsteins Headed by Prince Gelsche Walker and including 22 of His Daughters

Breeding animals in the registered Holstein herd at Santa Anita Rancho are the result of careful selection in which the requirements are high individual quality, heavy and persistent production, and proven transmitting ability. All females are placed on official test as they freshen. A few splendid young bulls out of A. R. O. dams for sale at prices well within their value. **SONS OF THIS FINE HERD SIRE FOR SALE.**

A 34 POUND BULL IS NOW OFFERED FOR SALE

The name of this youngster is DUKE CORNUCOPIA SARCASTIC 157545. Born February 14, 1915.

His dam: ALBA SADIE CORNUCOPIA 138651. As a 4-year-old she made 28.85 pounds of butter in 7 days, and just recently as a 5-year-old she increased her record to 34.13 pounds butter under official test. This is the largest butter record ever made by a cow in 7 days in California. She is a splendid individual, and a persistent producer. She is sired by SIR SADIE CORNUCOPIA, 34 A.R.O. daughters, 3 above 30 pounds butter in 7 days. He by Aeggie Cornucopia Johanna Lad, 97 A.R.O. daughters, 3 above 30 pounds, and out of AAGGIE CORNUCOPIA PAULINE 34.32 lbs. butter in 7 days, 128.98 lbs. in 30 days. This cow held the world's record for 8 years, and she is the dam of SADIE VALE CONCORDIA 4th, who has over 40 pounds of butter in 7 days to her credit.

His Sire: WOODCROFT DE KOL SARCASTIC LAD, already has 2 A.R.O. daughters, one a 20.03 pound 4-year-old. He is by AAGGIE CORNUCOPIA 3d LILITH, 21 A.R.O. daughters. His dam is a splendidly bred cow, sired by a son of DE KOL 2ND'S BUTTER BOY 3D. We guarantee this bull to be a breeder.

Also Percheron Horses, Mammoth Jacks, Berkshire and Poland-China Hogs. Correspondence Invited

Anita M. Baldwin

W. H. TAYLOR, Superintendent

SANTA ANITA, CAL.

Reports of tests were received Apr. 28 and 29 for 553 Holsteins which averaged 422.3 lbs. milk containing 15.327 lbs. fat in seven days.

The Kerman High School agricultural director planted several varieties of stock beets last December on the poorest ground and is now feeding them to milk cows. The cost of production is about \$1.05 per acre. Milk flow increased and is being recorded.

F. Stenzel, San Lorenzo Holstein breeder, reports the recent sale of five choice service bulls: one to E. F. Young, Modesto; one to S. D. Chapin, Kerman; one to Lemos and Hans-

DAIRY CATTLE.

BULL CALVES from a grandson of Colantha Johanna Lad and from a son of King of the Pontiacs. J. W. Benoit, Route C, Modesto, Cal.

HOLSTEIN BULLS out of A. R. O. cows, sired by a son of King of the Pontiacs. Prices reasonable. J. H. Harlan Co., Woodland, Cal.

FOR SALE—Registered Holstein-Friesian Bulls from the best King Segs and De Kol families. Reasonable prices. N. E. Mulick, Willows, Cal.

THE McCLLOUD RIVER LUMBER CO., McCloud, Cal. High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

TWENTY-EIGHT high grade yearling and two-year-old Holstein heifers for sale; some bred. K. W. Abbott, Milpitas, Cal.

REGISTERED JERSEYS—Herd established 1863. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

WILLOWMOOR AYRSHIRES—Great records; economy. 300 head in herd. J. W. Clise, Redmond, Washington.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Sulson, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit. Cows for sale. C. G. McFarland, R. 2, Tulare.

REGISTERED HOLSTEINS—A. W. Morris & Sons, Corp., Importers and Breeders, Woodland, Cal.

THOROUGHbred DUROC-JERSEYS to farrow in August. Dr. T. A. Guthrie, Woodland, Cal.

CREAM CUP HERD—Registered Holsteins. Pontiac Bull calves. M. Holdridge, Modesto, Cal.

COWS—20 head. Good Grade Jersey Milk Cows at \$60 each. E. H. Webb, Escondido, Cal.

REGISTERED JERSEY BULLS from Register of Merit Cows. D. F. Conant, R. "B", Modesto.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

BREEDERS OF A. R. O. Holstein-Friesian cattle exclusively. Dirk Dairy Farm, Lemoore.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

YOUNG REGISTERED JERSEY BULL CALVES at reasonable prices. O. J. Ames, Oakdale.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAllister & Sons, Chino, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

LINWOOD FARM—Registered Holsteins and Imported Guernseys. Santa Cruz, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto, Cal.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes, McCoy, Oregon.

REGISTERED HOLSTEINS—Golden West Herd, D. & H. Rowles, Modesto, Cal.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Calif.

HORSES AND MULES.

HORSES—FOR SALE—30 head horses and colts; 11 head broken, 5 3-year-olds, 3 2-year-olds, 6 yearlings and 5 suckling colts. Price, \$2200, or will consider rolled barley to full amount in exchange or tractor (track layer type) to \$1,500; balance cash. Box 128, Lancaster, Cal.

REGISTERED SHIRES—Black Hawk Stock Farm Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

MISCELLANEOUS.

CROLEY'S CALF FEED with skim milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc. 631-637 Brannan St., San Francisco.

D. O. LIVELY, 216, Hobart Building, San Francisco, buys and sells live stock—any kind—any quantity.

DUROCS AND GUERNSEY BULL CALVES—Gilts bred to 900-lb. boar. Ed. E. Johnson, Turlock, Cal.

DOGS.

AN OPPORTUNITY to purchase thoroughbred Collies. Having a greater number of thoroughbred Scotch Collies than I can accommodate, am willing to sell a few one year and older at a great sacrifice. The dogs are all bred by the noted prize-winners of the BROWN-DALE KENNELS, Redwood City.

com, Modesto; one to W. E. McClellan, Lassen county; and one to Chas. Winters, Yolo county.

State Dairy Inspector J. H. Severin is notifying dairymen in Sacramento that his next trip will result in prosecution of insanitary outfits.

Jim Jeffries is in the ring at Burbank with 60 dairy cattle and a 105-acre ranch. He has 45 acres alfalfa and 31 acres Eureka silage corn to put into a 260-ton concrete silo 14x60 feet.

Grapewild Farms of Escalon reports the shipment of the young Guernsey bull Donaldo of Mayhews to the Hawaiian Islands. This bull stood 4th in his class at P. P. I. E. last year.

Keystone Beauty Plum Johanna has broken the record in senior 4-year class for tests begun not less than 240 days from freshening by producing 19.584 lbs. in 7 days. She is owned in Penn.

BEEF CATTLE AND BREEDERS.

Hugh French and Allie Green of Hollister shipped 11 cars of beef cattle to San Francisco July 10.

Some 50 cattle died of blackleg in the Bellota section and into Calaveras county within three days. Farmers at once got busy vaccinating.

A herd of 400 cattle from Merced county attracted considerable attention on the Kansas City market recently. One steer weighed 1560 lbs. and sold for \$171.60. He never had any feed except Cal. wild grasses.

STATE RECORD COW INHERITS PRODUCTION.

[Written for Pacific Rural Press.]

That high-producing dairy cows are the result of carefully mating animals of different sex, rather than a happen so, is pointed out by F. Stenzel of San Leandro, owner of the Holstein cow Marie Clothilde Pontiac Creamelle, who recently made a California State record for two-year-olds by producing 391 pounds of milk containing 22.52 pounds of butter in seven days.



Marie Clothilde Pontiac Creamelle, State record Two-year-old Holstein.

On both her dam's and sire's sides, this cow traces back to high producing animals, the dam having a seven-day record of 23.90 pounds of butter and being sired by King of the Pontiacs 4th, a son of the great sire King of the Pontiacs.

The sire of Marie is Mr. Stenzel's herd sire Dutchland Sir Pietertje Creamelle, which already has five A. R. O. daughters and is out of Dutchland Creamelle with a record of 23 pounds of butter. The grand dam of this bull on his dam's side is the former world's record milk cow Creamelle Vale and his grand sire on his sire's side is the noted bull Pietertje Hengerveld Count De Kol which has more than 50 producing sons, 48 producing daughters and 99 A. R. O. daughters.

Marie freshened June 4, and was started on test June 11, being two years, one month, and 27 days old when the test was begun. She was fed alfalfa hay, wet brewer's grain, dried beet pulp, ground barley, and bran while on test. She dropped a bull calf, of which great things are expected later. Marie is essentially a California product, having been bred and raised on the Stenzel ranch.



Which Will You Have Next Winter?

NOW IS THE TIME to decide whether you will feed your cows silage next winter and get 25 per cent more milk, or keep them on dry feed and be content with smaller, less profitable returns. In addition to the extra feeding value of silage, it is the cheapest feed you can use. When silage is fed, feed bills can be reduced 15 to 20 per cent.

TO BE SURE OF SILAGE of the best quality for next winter's feeding.

PLACE YOUR ORDER NOW FOR AN IDEAL GREEN FEED SILO

YOU WILL THEN HAVE AMPLE TIME to get your silo erected before the crop is ready. Delay may mean extra expense, or even failure to get the silo up in time. Decide now to have an Ideal—the silo that will give you better service, dollar for dollar invested, than any other.

THE LOW PRICE OF SOME MAKESHIFT SILO may seem attractive, but the man who puts his crop in such a silo takes a big chance with valuable feed. He may lose many times the small amount he thinks he saved on the first cost.

THERE IS NOTHING MYSTERIOUS about the superior value of the Ideal. Every feature is the result of long experience in silo manufacturing, and the superiority of this silo has been proved by actual service on Thousands of Pacific Coast farms. Every detail in the selecting of the materials and the manufacturing and fitting of the parts is clearly explained and illustrated in our large silo catalogue. Ask for a copy of the catalogue and read it. Get all the facts about this silo clearly in mind. It will pay you. Better still, place your order at once for an Ideal, so that you will be sure of getting it in time for filling.

ACME FEED CUTTERS

ALPHA ENGINES

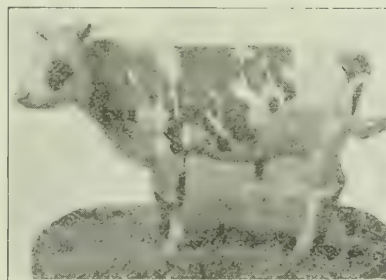
De Laval Dairy Supply Co.

San Francisco

Seattle

"Everything for the Dairy"

Good Enough for Any Herd



AGGIE GRACE PONTIAC CREAMELLE
Half Brother of Marie Clothilde
Pontiac Creamelle, California
Champion 2-year-old.

This youngster's dam, Aggie Grace Brookside Princess, grand-daughter of Pontiac Klondyke, the greatest Holstein sire in the world, has an official record of

28.17 lbs. BUTTER - 456 lbs. MILK
TEST 4.9%

This record was an increase of 6 lbs. butter over her previous record and I expect her to make at least 30 lbs. on her next test.

His sire is Dutchland Pietertje Creamelle, one of whose daughters at 2 yrs. 1 month has just made a record of 22.52 lbs. butter, 391.7 lbs. milk, test 4.72%, making her California's champion 2-year-old.

This young bull is perfect in type, is 50% white and just ready for service. Born Apr. 22, 1915. Write or call and see the herd.

F. STENZEL

SAN LORENZO, CALIFORNIA
Breeder of high-test Holsteins.

Tamworths and Duroc-Jerseys

We can fill orders for mature stock and weanling pigs of both sexes. This is the largest herd of TAMWORTHS in the State. Our Stock is sure to please.

Write or call and see us.

SWINELAND FARM,

W. O. PEARSON, Prop.
Woodland, California

HOG CHOLERA PREVENTED



You need have no fear of Cholera if you vaccinate your hogs with our Serum.

We guarantee Hogs immune against Cholera.

Have your banker ascertain if our guarantee is good. We teach farmers free, how to vaccinate hogs. It costs 22 cents per head to immune pigs for their natural lives, when 10 days old. Write us for Free Book on Hog Cholera. Address,

Main 1280—PHONES—Home AL326.

Inter-State Vaccine Company

429-430 Bryson Bldg., Los Angeles
L. B. GREEN, Mgr., or DR. W. J. EMBREE.

San Francisco--Sacramento SCENIC LINE



Regular—Fast—Electric train service between Bay Cities and points in the Sacramento Valley Thru beautiful Redwood Canyon and Mt. Diablo country.

Write for illustrated folder and time table.

Oakland, Antioch & Eastern Railway

L. H. RODEBAUGH,
Traffic Manager.

Oakland, California

Preparation for Robber Cow Competition

(Continued from page 73.)

main consideration and no unnecessary changes in milkers being made.

Besides 20 to 35 pounds of silage, he got his cows to eat as much timothy and alfalfa as possible, together with 10 to 15 pounds of concentrates, the amount of the latter depending upon the time of year and the length of time the cows were along in calf. Each cow was carefully watched and only fed the amount she would clean up. After the morning milking they were fed a handful of salt apiece and were supplied with a continual supply of fresh water. In Wisconsin, as may be expected in California, the ration fed to the competition cows varied widely in kinds of feed and total amounts fed.

It should be expected by contestants that much heavier feeding will be necessary to secure maximum records than would ordinarily be practiced with the entire herd.

Use Cheapest Feeds.—In this connection, however, the dairyman or breeder should reduce as far as possible, the cost of production by utilizing to the fullest extent the feeds grown on his own farm. This was pointed out in the report of the Wisconsin competition by the University in saying that, "if protein feeds, like alfalfa, clover, peas, oats, etc., are available in abundance, the feed to be purchased may be of somewhat starchy character, like mill refuse and ground feed, rather than high protein feeds like oil meal, cottonseed meal, distillers' grains, etc." They further state that the feed bill may be greatly reduced by providing an ample supply of corn silage, alfalfa hay, and farm grains.

As most readers will understand, alfalfa is the basic feed which most California rations will be founded on, but the experience of those who have done official testing in the past indicates that alfalfa can be profitably supplemented with any of the following feeds: corn, silage, beet pulp, bran, barley, stock beets, carrots, and green alfalfa. Other grains and prepared concentrates can of course be fed in connection with alfalfa, but as above outlined, it should be the practice, whenever possible, to use feeds grown on the farm, and in as large variety as practicable.

Type of Cow.—As to the type of cow most apt to make a large record, the Wisconsin contest showed that the differences in the average production of the various cows were largely caused by the differences in the size of the cows, the records of the individual cows in each breed showing that the heavier cows, as a

rule, ate and produced more than the small cows and at greater economy of feed.

The data also showed plainly that the highest producing cows were also on the average, the most economical producers. True, the cost of feed eaten by those cows was considerably higher than for the low producers; but since the products obtained were much more valuable than the feed consumed, and since a larger proportion of net energy can be used for production in the case of such cows, the net returns were increased to a far greater extent than the increase in cost of feed.

As above stated, specific instances of California experiences will be given later in these columns, but a resume of the Wisconsin data, as given, indicates that the large-framed well-bred cow, carefully fed, is the one that may be expected to make the highest record, whether she be in the purebred or grade classes.

One suggestion which might be profitably given and acted upon at this time is to give the competitive cows as much rest as possible before entering them, and to have them in good physical condition by careful feeding when the starting gun trigger is pulled November 1, by which time complete details of prizes and regulations will have appeared in these columns.

WELL-BALANCED HOG SALE.

[Written for Pacific Rural Press.]

From the amount of correspondence he has received from all over the Pacific Coast inquiring for catalogs, W. M. Carruthers is expecting one of the largest and most representative crowds of Berkshire breeders at his first annual sale, ever assembled in the West.

He attributes this largely to the exceptionally choice lot of hogs he is offering and to the further fact that practically all of them are direct descendants of Rival's Champion Best, claimed by C. F. Curtiss, Dean of the Iowa Agricultural College and president of the American Berkshire Association, to be the premier sire of the breed.

While there will be a large number of outstanding show animals offered in the sale, which will appeal to the most discriminating exhibitor of show animals, there are others catalogued of the same breeding but not carrying all of the fancy show points. These will afford new and old breeders an unusual opportunity of strengthening the blood lines of their herds. It is fair to assume that these will be knocked off at lower prices than those ordinarily received at private sale.

But no one realizes more than does Mr. Carruthers, the fact that the farmer's trade is the one to cultivate. To supply farmers with service boars, which are certain to improve the quality of their grade herds, he has selected an unusually attractive lot of young ones that will be ready to put into the fall breeding pens.

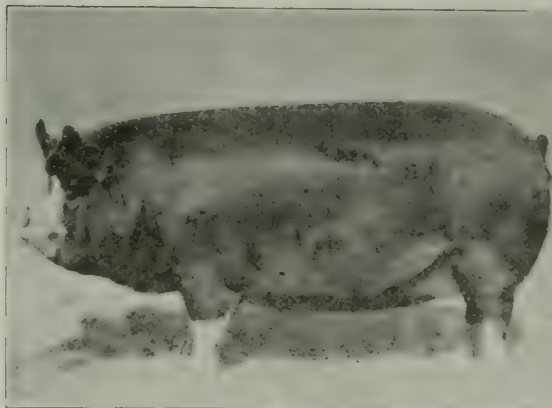
Taken as a whole, a better balanced sale of livestock has never been held in the West than the first annual sale of Carruthers' Farms.

As a compliment to Mr. Carruthers, it may be said that he is the first hog breeder in the State with sufficient confidence in his breed and his herd to inaugurate the annual sale plan. Because of that fact, he fully expects to sacrifice heavily on some of his best animals, assuming this loss in order to aid in putting the auction sale idea on a permanent basis.

BERKSHIRES YOU NEED AT

Carruthers Farms First Annual Sale

MAYFIELD, CAL., AUGUST 2.



Forest Grove Laurel 2nd, Dam of 2 sows and 3 boars included in our offering.

But individuality is not the only good feature of this sale. In breeding also they fit every need. 40 of the 47 head to be sold carrying the blood of the Premier Berkshire sire, Rival's Champion Best, the One great Sire of the Present Generation.

SEND FOR YOUR CATALOGUE NOW and acquaint yourself before the sale with pedigrees and descriptions of the animals to be sold.

IF YOU CAN'T BE PRESENT SALE DAY mail your bid to any of the following Berkshire judges who will care for your bid in the strictest confidence: Prof. J. L. Thompson, University Farm, Davis; W. S. Gullford, Willows; J. L. Thatcher, Riverside.

Col. W. H. Hord, Auctioneer,
704 Market St.,
San Francisco.

Wm. Carruthers, Prop.
513 Hearst Bldg
San Francisco.

In this sale we have taken every possible precaution against misfits and culls in order that every buyer may secure just what he wants and has actual use for. We have catalogued Berkshires for every requirement; for the show herd, young breeders' herd, foundation sows and service boars for the farmer, and without a single exception they are

**Berkshires
You can Use
and Keep.**

KNOB HILL STOCK FARM Registered Big Type Poland Chinas :



SOME TYPICAL KNOB HILL BROOD SOWS.
(Large type, combined with high quality.)

Our herd is nominated in the California Poland China Futurity to be held in connection with the State Fair this fall. We have just imported and added to the herd some of the best blood of the East, including boars from W. J. Hather, Ord, Neb., and Peter Mow, Orange City, Iowa.

We are offering pigs of both sexes from prize-winning stock. Litters coming at all seasons and stock usually on hand to suit customers.

Come and see them, or write for what you want.
ALL STOCK REGISTERED. ALL BREEDING GUARANTEED.

A. M. HENRY, Prop.

Farmington, Cal.

Duroc Jersey Pigs

Forty head of A No. 1 pigs, both sexes, January, February and March farrow, priced to sell, and to seal right now. All registered, well bred, well developed and guaranteed satisfactory, or money refunded. Conditions are such that we must materially reduce our herd. This is your opportunity. Details for a postal.

DIRK DAIRY FARM

Lemoore,

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[Answered by Dr. H. B. Winttingham, Petaluma.]

COLT RUPTURED.

To the Editor: A colt was foaled a month ago ruptured. His intestines came down with his testicles. When should he be operated on and is it likely to be successful? Should he be castrated at the same time? The rupture is getting bigger.—E. M., Stockton.

[The sooner this colt is operated on the better. Castration is performed the same time the rupture is remedied.]

CALF NOSE STOPPED UP.

To the Editor: A two-months calf began to run at the nose; then it became difficult to breathe. Before it died, you could hear it moan when it breathed, for 100 yards. After it died, its eyes, mouth, and nose became bloody. Is it contagious?—C. E. T., Visalia.

[This was pneumonia. Treatment at times gives relief. Its infectiousness to other animals depends on the cause of the trouble.]

MILK FLOW DROPS.

To the Editor: A cow giving 40 pounds milk per day dropped to 16 pounds in two days. Seems healthy, eats and drinks all right. Slobbers a little. Has alfalfa pasture, and alfalfa hay twice daily. When I begin milking there is something like clotted milk in each teat. She got musty hay a week ago; but that did not affect the others.—J. T., Woodland.

[Give this cow 2 lbs. epsom salts dissolved in one gallon hot water. Follow three times a day with one ounce fluid extract phytolacca and one dram hexamethylamine.]

SWELLING ON MARE.

To the Editor: My thirteen-year mare gave birth to a colt in March. About a month later, a swelling or enlargement came on her right side, low down in her flank. The enlargement is hard and sometimes seems concentrated in one spot and at other times extends over a greater space. Mare and colt are both apparently in first class condition. Mare runs and trots as if enlargement gave her no pain.—M. J. P., Gilroy.

[Probably an abscess. Have your veterinarian attend to it.]

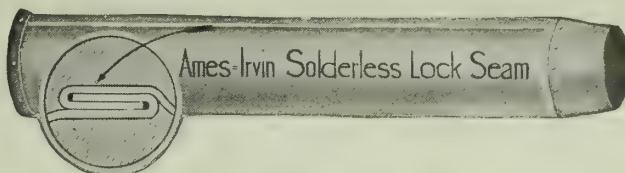
COW SEEMS IN PAIN.

To the Editor: My cow kicks and paws the dirt, lies down, rubs her head on the ground. Had been feeding vetches and oats twice a day with upland pasture; but since she has been sick, have fed hot bran mash and alfalfa meal with upland pasture. Has good appetite.—S. S., Fortuna.

[The feeding of vetches, especially if ripe, at times causes poisoning. Give 2 lbs. epsom salts in one gallon hot water, and change the feed from vetch. Perhaps there are poison weeds in the pasture.]

FLIES—UNDEVELOPED TEAT.

To the Editor: Will air-slaked lime keep flies from breeding in horse manure if the lime is sprinkled liberally over the manure daily? What is the most economical way to keep flies off from cows? My heifer freshened two months ago. She was running on wild pasture; but now and most of her life she has been kept in a corral and fed alfalfa hay. Since freshening she has had good wild hay. Her teat seemed not developed; this part of her bag stayed swollen and caked longer than any other quarter. The milk looked poor. She is now giving six quarts per milking. She seems well, but the teat gives a corresponding amount of milk. Does not get bet-



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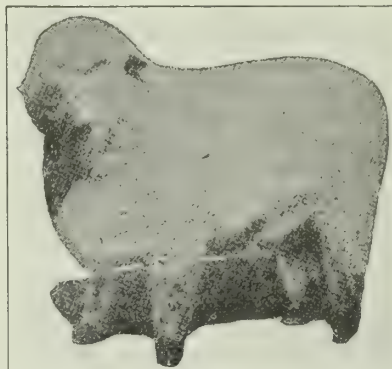
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ter or worse.—T. N. M., Chowchilla.

[If you use enough lime, yes. Spray the animals with fish oil just before milking. The teat is undeveloped and is unable to carry off the product of that quarter.]

SWELLING ON MULE'S NAVEL.

To the Editor: A few days ago a swelling started around the navel of one of my mules, the second day showing a few drops of blood. It is now about the size of two hands and appears to be getting larger. I have been feeding very heavily on barley hay and alfalfa lately, besides about three quarts of rolled barley. Team has been working; and shows

no ill effects at all from swelling.—W. L. S., Cabazon.

[Cannot give the cause without an examination in this case. Paint the swelling and surrounding parts with tincture of iodine twice a day.]

A dairyman says his cows were crazy for sorghum silage at first, but after he had fed it straight for a week their milk flow dropped. When he alternated the silage with alfalfa they picked up again, and cleaned up both the silage and the hay.

Two hog cholera cases were found in Kings county last month.

Farm Poultry for Profit.

HOW BEST TO DISPOSE OF SMALL HENS.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

The small hen is such a numerous proposition in California that "how best to dispose of her" is getting to be a problem. Towards August the markets are flooded with them because everybody is culling out the flock for winter; also the molt is on, and it is desirable to get them off before the hens are denuded of feathers. Now the signs all portend an early molt in this section and very possibly it will be so all over the state on account of the dry spring we had.

On a postcard dated July 8 I find the prices for small hens, or rather, to be exact, "Leghorn hens, Good," (that is the way the card reads), the price is 17 to 18½ cents per lb.—firm; for large colored hens 19 cents per lb. firm. Never before that I can remember has the Leghorn hen been quoted so near to the large hen in price.

This should certainly be encouraging to Leghorn breeders and it should encourage them to breed more of the kind called "Good." This means a hen weighing four pounds or over. To be good for layers and breeders Leghorn hens should, when in condition, weigh four pounds.

So at that price no one having small hens to dispose of ought to hesitate or fuss around about how to dispose of them. Just pen them up in rather close quarters for two weeks and feed them a good mash moistened with sour milk or buttermilk, giving plenty of green feed between times to increase the appetite, and good clean water to drink; and your hens will easily pass in the class called "Good." A hen weighing three pounds and over, that is running on range and laying, can easily be made to tip the four-pound notch if confined and fed the limit. Most of them will quit laying directly they are confined. As they do not run around, all food will go to making flesh. It is generally conceded that muscles that are used in constant exercise begin to put on flesh as soon as the exercise is stopped. The mash should consist chiefly of fat or flesh-forming foods, such as cornmeal, ground, sifted oats, white middlings, or low grade flour; these mixed with sour milk are all very fattening. Give no bone meal or minerals, not even grit is necessary for the short time the birds are confined, but green feed keeps up the appetite, so it is admissible. The last week a tablespoonful of good clean tallow or grease of any kind will help—a tablespoonful mixed in the feed for each hen once a day, but no more. Too much tallow would cause looseness of the bowels.

Feed all the hens will eat three times a day, but never leave any before them. If it once gets too sour, the appetite will be lost, all increase of weight will be stopped, and the hens might just as well be turned loose.

If you have small hens to dispose of, don't let the grass grow under your feet in fixing up that pen to

start the fattening; for this is the Leghorn man's opportunity to get a fair price for his culls. As a rule 35 cents is about all a small hen will bring in open market. Just figure the difference between that and four pounds at 17 to 18½.

Incubator Chicks Die.—I ordered 400 White Leghorn chicks from Sacramento, in separate shipments, the last 100 arriving June 20. Out of the 400, I have 65 left. The three first lots I took the chicks right out of the shipping box with heads and throats dotted with lice. On one chick I counted 21 big ones. Not having anything else in the house I dusted them with sulphur, rather heavy, and that night 57 of the 100 died. (I don't blame them.) Then I got some oil of cedar; and that fixed them without losing any chicks. I opened the dead chicks; in some the yolk was all absorbed, in others it was not; some died with nothing in their craws; and in others the craw was packed full. They had no bowel trouble. We are at an elevation of 4300 feet; has that anything to do with it? What I feed: First meal, stale bread crumbs sprinkled in the litter, and finely crushed egg shells; next meal, bran sprinkled in litter, pinhead oats, chopped lettuce, charcoal, and a little cracked wheat. When a week old skimmed goat's milk diluted, then whole wheat very sparingly six meals a day. Feed is too high here to have much variety. Some tell me bran is not good for little chicks. Am growing millet for next year and hope that will be good for them. How I brood them: I raise them in padded cold brooders, each box 22x16 for 25 chicks, all hovers made from cheese cloth bags filled with chicken feathers or goat wool in soft washed flour sacks, with extra blankets for bad weather. The chicks are on the ground with sand under them; litter and everything is scrupulously clean. Sickness always starts about the 5th day and their legs won't carry them. They have both shade and sunshine and are perfectly clean and I watch them from 5 o'clock in the morning until 9 at night.—M. C., Stacy, Lassen Co.

[Concerning the lice, any man who would send incubator chicks out with lice on them ought to be put out of business; he is not fit to run such a business; and as for dusting baby chicks with sulphur, that is almost as bad. I don't blame the chicks that were so treated for dying; they could do no less because the sulphur paralyzed them. Then again the feed is not right. Had the bread been sliced and roasted through, then rolled and spread where the chicks could reach it easily they would have been better nourished. A mixture of rolled oats and bran put in shallow dishes is better for baby chicks than giving bran alone or giving pinhead oats. Rolled oats are partially cooked, therefore easier to digest. I believe the trouble with these chicks has been that they have been poorly nourished at the start. The lice robbed them of some vitality, then the feed was hard to find and not good enough; instead of crushed egg shells, in a case like this hard-boiled eggs and toasted bread would have been better, followed up with bread soaked in goat milk, and instead of waiting a week before giving the diluted goat milk give it at the start. If it is not possible to get a variety of feed in this place, why not buy a small mill—even a good-sized coffee mill would do—and

grind up your wheat. No chick at one week old can be well nourished with the small amount of whole grain it can digest. Chicks running with hens will do much better because the hens look after their wants. The whole trouble seems to be a lack of nourishment. I don't think altitude has anything to do with it; neither was there anything wrong with the chicks, because chicks that would stand that treatment were sure all right. About the millet, let me warn you not to feed it too freely. It is a case of a little being a good thing and too much a bad thing; too much millet is a sure cause of bowel trouble. If bran is given from the start it never causes trouble and may be given in quantity, but it is more nourishing when given with half its bulk of rolled oats. Instead of sand for a bed in cold brooders try litter cut in one inch lengths; it is more comforting and also prevents the chicks from piling up on each other. All your troubles are preventable, so do not get discouraged but try, try again.]

GUINEAS.

To the Editor: What is the best feed for baby guineas?—M. F. Mc., Paso Robles.

[Feed same as common chicks—nothing at all for the first 48 hours. When they can take care of themselves, let them run in the garden to clean it of bugs. An ordinary hen makes a better mother than a guinea hen because she is not so excitable.]

Mr. F. L. Hall reports that there is a noticeable and growing tendency in the Petaluma district to abandon the poultry colony or small house and range system. Instead of scattering these small units over a large area, the drift is now toward more intensive and labor-saving methods which are possible when the long house and scratching shed plan is adopted.

Giant marrow cabbage, which sometimes grow as tall as a man, is recommended by the Washington State Experiment Station as an excellent green food for poultry. This plant sheds its leaves as it grows.

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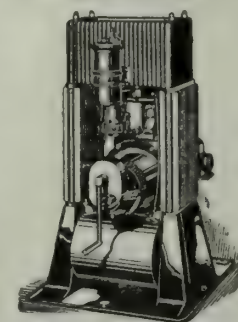
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The Home Circle Page of the Pacific Rural Press

MRS. BEST'S LETTER.

My dear Friends:

I am afraid a good many of us are not going to load our pantry shelves with canned and preserved fruit this summer, as we usually do, owing to the high price of sugar.

Those who live in the country have the advantage of having your own fruit, which the city dweller often pays a very high price for.

Canning without sugar has been tried for some time and with considerable success and this is a very good year for all of us to give it a trial.

In the case of large fruits, such as peaches, pears, etc., you cook the fruit until tender in boiling water and seal while hot, and it keeps just as well as though cooked in a syrup, for it is not the sugar that makes it keep anyway, but the sterilization. Of course, when these jars are opened for use, the contents must have sugar added, but by that time, it may not be such a luxury.

Small fruits, as berries, can be cooked and strained and sealed boiling hot in jars and this liquid used for jelly making or for beverages with other fruit juices.

I know of no way whereby you can make fruit butter and preserves without sugar, but I do know a way of cooking them without the tiresome stirring and that is to put them in the fireless cooker after they have been well heated on the stove. They may need to be re-heated once or twice and put back, but that is far easier than cooking on top of the stove and getting spattered by flying bubbles of syrup.

I hope you have tried the apricot and pineapple marmalade recipe that appeared last week. It is delicious—the only fault it has is that it disappears too rapidly. Yours,

Rosabella Best.

HOW TO EAT AVOCADOS.

To the Editor: I lived for many years in the Hawaiian islands and took particular interest in the growing of avocados, mangoes, bananas, and other tropical and subtropical fruits. In the islands the avocado is not principally used as a salad, but the fruit is merely halved, the seed removed, salt and pepper applied, and the fruit eaten as cantaloupes are. They are served at each of the three meals. They are cut up and used in soups after the soup is on the table, and are used there to some extent as a salad.

We usually picked the fruit and laid them away for a week to ripen and mellow. Even apples would hardly keep longer in the tropics.

If a good flavored keeping fruit like the long green variety or the purple avocado can be grown here, I see no reason why this fruit should not become popular and profitable.

The taste for the fruit must be cultivated, as few like it at first; but it is the most popular fruit, barring the mangostine, grown in the tropics. But it must not be forgotten that there is as much difference in the shape, color and flavor of avocados as there is in apples or plums.

Hugh M. Coke.

MAKE "KOUMYSS" AT HOME.

Try a little of this refreshing drink for hot weather. Dissolve a third of a cake of compressed yeast in a little tepid water; take a quart of milk fresh from the cow, or warmed to blood heat, and add to it a tablespoonful of sugar and the yeast. Put the mixture at once into beer bottles with patent stoppers, and let them be full up to the neck. Let them stand twelve hours in a temperature that would raise bread, then set on ice with the bottles upside down until wanted.—Mrs. Swaysgood.

WEDDING CAKE SUPERSTITION.

Have you ever tried sleeping on wedding cake for a week and pulling out a named slip each morning until you eliminated all but your fate? It is great fun, especially when several girls do it together. You do not make out your own list, but a friend's, and she makes out yours, so that you are surprised. Five of the slips are named for five boy friends, one slip is for the old maid and one for the stranger, whoever he may be. One must not peek to see who is left, but every morning, one more person is eliminated. The suspense makes this little pleasantry very exciting. You can't honestly believe this method, of course, and it is most provoking to draw the name of your best friend the very first morning, but it is an interesting way of deciding one's fate.

FASHION NOTES.

Sprigged muslins are revived for the summer girl's frock.

Cape effects on some of the summer blouses show deep hemstitched borders.

An overskirt of taffeta looped up over a cream lace underskirt is quaint and offers possibilities for short lengths of silk.

Pongee is having a great revival of popularity, both for dresses and light weight suits.

The stores announce that skirts are to be longer this fall.

Felt hats are being shown in the shops, many of them white, for early fall wear.

Middy suits of either plain or striped materials continue to be popular.

HAM SANDWICHES.

Ham sandwiches are much more dainty and appetizing if the ham is finely chopped and chopped pickle be added. A little salad dressing is an improvement also. Cut the bread into thin slices and trim the crusts.

INTEMPERANCE IN FOOD.

Some one has rather aptly said that "one-third of what we eat enables us to live, and the other two-thirds provides a living for the doctors."

FLORAL DEPARTMENT.

[By Geo. N. Tyler.]

If you have not planted your fiesias, do so at once, as described in former article. The main reason so many fail with this bulb is because they are not planted early enough. You can plant a second lot next month for later bloom.

Pelargoniums that are in pots will have finished blooming by this time and should be started to dry off. It takes a month or six weeks to do this correctly. Put them in a shady place and gradually withhold water, but do not let them get so dry that the leaves turn yellow. Further directions will be given later.

If you have not mulched and staked your "mums," do so at once, and give them plenty of water, both at the root and foliage, for this is the time they require it most and you cannot very well overwater them. As soon as the feeding roots run up into the mulch, give liquid manure every other watering. If the foliage should turn yellow or light colored, it is a sign of over-watering or feeding. Withhold water for a few days and top dress around them with powdered charcoal or hydrated lime—or both can be used.

If you have not sown cineraria, calceolaria, primulas, etc., for early spring blooming, do so at once. The seeds mentioned are very fine, like so much dust, and have to be planted very carefully. Sow them in boxes of light sandy soil, mixed with fine leaf mould and give thorough drainage. Water the soil before sowing. Sow the seeds on the top of the ground and do not cover with soil, but cover them with moss chopped very fine, which should be removed as the seeds germinate. Cover the boxes with a pane of glass, which must be left on until the seeds germinate. Then raise the glass a little at one end. As soon as the young plants are large enough to handle, they should be pricked out into boxes of the same kind of soil and planted one inch apart. Remember these seeds do not require heat to germinate and should be kept as cool and shady as possible. They like a temperature of about fifty degrees. They require from three to four weeks to germinate.

If you want some early pansies, they should be sown this month, in boxes of finely prepared soil and the seeds covered lightly with leaf mould. Put the boxes in a cool, shady place and do not let them dry out at any time. As soon as they germinate give them sun, and shade with a piece of cheese cloth. As soon as they are large enough to handle, plant them in fine soil, in which rotted cow manure has been added, about one-fourth cow manure. It must be thoroughly rotted. You can also sow stocks or gilly flower seeds, same as pansies. For winter blooming sow Brampton as winter stock.

KEEPING FLOWERS.

All flowers with porous stems like chrysanthemums keep much better if dipped into scalding water, before putting into vases.

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HER STENT.

Great-grandmamma knit on a stocking;

And six times around, ev'ry day,
Was the stent for her bright, clicking needles,

Before she could go out to play.

And Grandmamma sewed on some patchwork,

A blue and white block was her stent,

Until a whole quilt had been finished.

Oh, how many stitches that meant!

Mamma had a stent that was different;

She sat on a high screwed-up stool
Before the piano, and practiced

Her scales, ev'ry night after school.

I wonder if I should like knitting?

Would sewing be easy for me?

Perhaps they'll want me to learn music.

I wonder what my stent will be!

—A. M. Farrington, in Little Folks.

GRUMBLE-BOY AND SMILEY-BOY.

In the Jones house there were two small boys, Johnnie Grumble-boy and Johnnie Smiley-boy; but no one ever saw both at once. At first they hardly realized, this little boy's father and mother and Aunt Emma, that there were two boys; but when one morning a little chap came down to breakfast with a big frown on his face, and blue eyes that were so cross that they looked nearly black, and when pleasant remarks from the family had no effect in making the boy look pleasant, they were obliged to make up their mind that a strange little boy had come to take the place of their pet. So they treated him with all the ceremony necessary with a stranger, and pretty soon he found himself feeling strange and queer.

But he wouldn't tell any one that

he felt strange. Not a bit of it. He was not that kind of a boy. When he came down feeling that way, why, everything was wrong. The oatmeal was too salty, his milk didn't taste right, and his egg was boiled too hard; and he just didn't want to wear his old cap to kindergarten,—it wasn't comfortable at all.

This sort of thing went on for some time, until Aunt Emma made up her mind that some remedy must be thought out. The mornings when Smiley Johnnie came down, there was the happiest little boy around the house all day, and home was a very different place from what it was on Grumble-boy's days.

So auntie thought and thought, and one day, when Johnnie came down, and it was the Grumble-boy Johnnie who climbed up to the seat beside father, he found a great change in the atmosphere of the family table. Usually when he came down looking frowning and sour, and complained about everything, the kind members of his family tried to persuade him by cheerfulness that things were not so far wrong as he thought them. But to day it was different.

"This hominy is too hot," piped a small voice.

"It is entirely too hot," Aunt Emma agreed sulkily.

"Mine's burning my mouth," mother said sadly.

"Mine's simply scalding," growled father.

Grumble-boy looked up surprised, and for five minutes there wasn't a word said.

Then came the boiled eggs and toast.

"My egg's too hard," growled Grumble-boy before he thought, just because he was in the habit of saying it when he felt cross.

"So's mine," wailed auntie.

"And mine," sobbed mother.

"Mine's like a rock, it's so hard," growled father.

Grumble-boy could hardly keep from smiling, it was all so like the good old story of Silverlocks and the three bears; but he'd come downstairs feeling cross, and it was his habit to stay cross.

And then the finish came when some lovely hot griddle-cakes were brought on. Grumble-boy wanted to complain just because he felt like it. So, after he'd poured maple syrup over his cake, he touched it with his fork and grumbled,—

"These cakes are tough."

"I can hardly cut mine," wailed mother, in a tearful voice.

Father started to cut his just then, and so did all the others, and at the same time father growled, "Shame to send such tough cakes to the table," and the cakes simply fell apart on their forks and everybody burst into a roar of laughter.

After that, when by chance the Grumble-boy appeared at breakfast, it was enough for auntie to say, "Johnnie, are your cakes tough this morning?" to break the clouds and bring back sunshine.—Examiner.

A Chinese couple, passing through this section on their honeymoon, severely criticise divorce. Any couple spending a honeymoon who could find anything enjoyable in the specter of a divorce would constitute the eleventh wonder of the world.



There is Japan tea, for instance.

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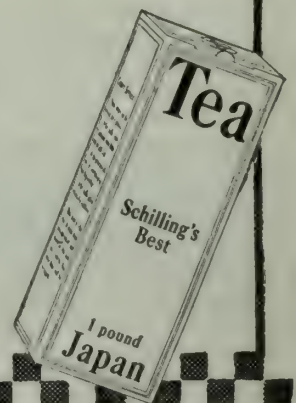
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Pacific Rural Press

525 Market St.,

San Francisco.

MUTUAL FIRE INDEMNITY.*[Written for Pacific Rural Press.]*

A little-known, but very important, advantage of a citrus fruit packing house belonging to the California Fruit Growers' Exchange is the "Mutual Indemnity Compact" by which fire insurance is provided for each house by all of those who enter the Compact. They save 65 to 75 per cent of insurance rates, according to P. J. Dreher of Pomona.

In the 10 years it has been in operation, only about five losses have occurred; and no one has ever refused to pay the assessment levied on all members to cover the loss.

Every member-packing-house is rated according to its value and fire risk. Its indemnity in case of fire, as well as its proportional assessment for losses of other members, is based on this rating.

An inspector is paid for continuous effort to keep member houses up to the rules for fire prevention. These rules require chemical extinguishers in each house, fire hose attached to plugs ready for use, alley-ways among boxes' shook, etc., so every part of the house is readily accessible, no smoking, no sawdust cuspidors, no oil waste except in tin cans, no gasoline vehicles stabled within 15 feet of the house, electric wiring through conduits, all oil drip kept off floors, timber, and shook, etc. The only expense of the "Mutual Indemnity Compact" is for inspection and actual losses.

CUCUMBER SALAD.

A good cucumber salad is made as follows: Pare and cut in half, crossways, two cucumbers. Hollow out the seeds and fill with a stuffing made of three olives, one cold boiled chicken liver, a little stalk of celery, one pimento, one gherkin. Chop these ingredients very fine, add the juice of an onion, four drops of tabasco and enough mayonnaise to make a paste; add a teaspoon of honey, and stuff the cucumbers. Slice them, when chilled, onto white lettuce leaves and cover with mayonnaise, laying a green pickled cherry on top.

The admiration which Bob felt for his aunt Margaret included all her attributes. "I don't care much for plain teeth like mine, Aunt Margaret," said Bob, one day, after a long silence, during which he had watched her in laughing conversation with his mother. "I wish I had some copper-toed ones like yours." —Youth's Companion.

A FEW AIDS TO CLARIFY FASHION CHATTER.

BRASSIERE—An undergarment like a short corset cover, worn over the bust and over the top of a low-cut corset.

SPANISH FLARE—The effect of a skirt for a little ways below the waist, that makes it seem as if it stands free from the hips; this effect is secured by a lining of horse-hair lace.

FITTED CORSAGE—One that generally follows the lines of the body; as contrasted to a box effect.

HIGH TOQUE—A toque trimmed to make the headgear have a sugar loaf appearance.

FIGURE CORSET—A long corset coming well down over the thighs to give the figure a continuous line.

TAM—A Tam-o'-Shanter cap.

NEGLIGEE—A light, loose, dressy house gown.

BODICE—The part of a dress cut separately to fit about the waist.

TETE DE NEGRE—A new dark brown color, supposed to be the shade of a field mouse.

REVERES—Decorative folds of fabric flowing back from the V-shaped front opening of a blouse.

JAPANESE SLEEVES—Sleeves with wide, flowing cuffs.

SMOCKING—A decoratively gathered part of a dress to take up excess material.

TUNIC—A short overskirt to be worn over a long skirt.

Little Millie's father and grandfather were Republicans; and, as election drew near, they spoke of their opponents with ever-increasing warmth, never heeding Millie's attentive ears. One night, as the little maid was preparing for bed, she cast a fearful glance across the room, and whispered in a frightened little voice: "O mamma, I'm afraid to go to bed. I'm afraid there's a Democrat in the closet."—Organizer.

Forty per cent of the high explosive makers and shell packers in Germany are women, while 5 per cent of the makers of tents, haversacks and similar equipments also belong to the same sex, and in the manufacture of tinned meats and preserves 75 per cent of those employed are females.

The Soft Answer.—"What would you do if you were in my shoes?" inquired Polly after her tiff with her best friend.

"I'll tell you what I'd do," said the B. F. candidly: "I'd buy a pair about two sizes smaller."



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OAKLAND CALIFORNIA

San Francisco, July 19, 1916.

WHEAT.

All northern wheat is still coming by rail, and with light supplies on hand club has been marked up. Sonora shows a slight advance, the market in general is fairly firm, though there is no heavy demand. Sonora Wheat\$1.72 1/2 @ 1.75 Northern Club 1.72 1/2 @ 1.75 Calif. Club, ctl. 1.70 @ 1.72 1/2 Northern Bluestem. 1.82 1/2 @ 1.85 Northern Red 1.80 @ 1.90

BARLEY.

Considerable demand for shipping, shipping and brewing grades firm, being quoted a little higher on spot. Feed is firmer in sympathy. Shipping, ctl.\$1.45 @ 1.47 1/2 Choice Feed, ctl. 1.40 @ 1.45

OATS.

Samples of the new crop black oats have appeared, but there is not enough business yet to establish values. Red oats have been marked up rather sharply, as the crop is light and buyers are taking interest. White also are higher, but show less strength. Red Feed\$1.60 @ 1.65 White 1.60 @ 1.62 1/2

CORN.

Old California yellow well cleaned up, selling on the same basis as Eastern, which is steady at old prices. Egyptian has advanced, demand keeps up well and the poorer offerings are getting cleaned up. Eastern Yellow, ctl\$1.85 @ 1.90 Milo Maize 1.40 @ 1.45 Egyptian 1.50 @ 1.60

BEANS.

The bean market shows reaction this week, as might be expected in view of extreme prices that prevailed of late. In fact, many believe that beans could hardly be worth prices recently asked under any conditions. While there is very little stock left, there are still a few scattered lots owners wish to dispose of, and prices have accordingly been reduced. The outlook for further change is uncertain, the amount of stock involved will be small at any rate, and present conditions will have slight bearing on values for coming crop. As to the latter, the general feeling is rather firm.

(On wharf, San Francisco.)

Bayos, per ctl.\$6.25 @ 6.50 Blackeyes 3.50 @ 3.75 Cranberry Beans 5.75 @ 6.00 Horse Beans 3.25 @ 3.40 Small Whites (south) .. 9.75 @ 11.00 Large Whites 8.75 @ 9.00 Pinks 6.75 @ 6.90 Limas (south) 6.00 @ 6.50 Red Kidney 8.00 Mexican Reds 5.50 @ 5.60 Tepary Beans 4.50 @ 4.75

HAY.

Shipments of new crop to this market have been hampered by tie-up of river boats and shortage of cars, but arrivals are increasing, and with settlement of the river strike, greater activity is expected. Everything that has come in has found a ready market at the range quoted, and market shows a steadier tone than for some time past, although it is impossible to ship anything out by sea. Increase in arrivals has been mostly alfalfa, which has good demand, with prices well established. Supplies in hands of horse feeders locally are light, and an active buying movement should take place before long. Dealers say there is no great amount of buying in the country, where a great deal of hay is held above city market. The shortage in many parts of the country would seem to warrant growers in taking firm stand. Farmers are said to be preparing to store heavily around Stockton.

Wheat, No. 1\$13.00 @ 13.50 No. 2 10.00 @ 11.50 Tame Oats 11.50 @ 15.00 Wild Oats 10.50 @ 12.50 Barley 10.50 @ 12.50 Alfalfa 10.00 @ 14.50 Stock Hay 7.50 @ 9.00 Straw, per bale25 @ .40

Special Deciduous Market Report.

By J. L. Nagle.

Sacramento, July 17, 1916.

The shipment of Bartlett pears from the Sacramento River district has held up longer than was anticipated a week ago. This is due in a great measure to the strike situation in San Francisco, causing a large lot of canning pears to be shipped East. This has heavily increased the Eastern shipments and to a large extent has affected the market. We look for a rapid recovery as soon as the bulk of the pears now rolling are sold.

Elbertas from the San Joaquin valley and from Placer county have ripened this year about the same time and are now moving in heavy supply. Prices, however, even in the face of eastern competition which has developed only in the last week or ten days, are very satisfactory.

Up to date the sales of deciduous fruits have been more satisfactory than for several years and we anticipate a continued good market on grapes. Late pears will also realize fancy prices due to the fact that the northwestern crop is short and the

New York state pear crop 50 per cent below normal.

Malagas are sugaring rapidly and the Fresno district will commence shipping straight cars about August 1st. Tokays will also be moving within ten days in light supply and in straight cars from the San Joaquin valley about the middle of next month.

The following prices have ruled for the week:

New York.—Tragedy plums averaged \$1.15; Burbank, 86c; Climax, \$1.08; Kelsey, \$1.20; Wickson, \$1.24; Diamond, \$1.20 German, \$1.22; Bartlett pears, \$2.24; Hale peaches, 59c; St. John, 65c; Thompson Seedless grapes, \$1.67.

Chicago.—Bartlett pears, \$2.18; Tragedy plums, \$1.54; Diamond, \$1.56; Burbank plums, \$1.30; Wickson, \$1.28; Thompson Seedless, \$1.46; Crawford peaches, \$1.22; St. John, \$1.24; Malaga grapes, \$2.07.

Total shipments to date, July 18th, 3983 cars; total shipments same date 1915, 2734 cars.

These quotations furnished by Nicholls-Loomis Co., Los Angeles, Friday, July 14th:

Barley Hay\$10 @ 14 Wheat Hay 10 @ 14 Tame Oat Hay 12 @ 16 Northern Alfalfa 11 @ 13 Local Alfalfa 12 @ 15 Stock Hay 6 @ 9 Straw 5

FEEDSTUFFS.

Rolled oats have advanced with the market on the whole grain, rolled barley is quite firm. Other feeds as last quoted, with usual movement to nearby points.

(Wholesale prices, per ton, carload lots, San Francisco.)

Beet pulp, per ton... Nominal Alfalfa Meal, per ton. 17.50 @ 20.00 Bran, per ton 28.00 @ 29.00 Oil Cake Nominal Coconut Cake or Meal 23.00 @ 25.00 Cracked Corn 40.50 @ 41.50 Middlings 35.00 @ 38.00 Rolled Barley 29.00 @ 30.00 Tankage 45.00 Rolled Oats 31.00 @ 33.00

VEGETABLES.

The river strike has caused an unsettled condition in local garden truck market, but as the trouble has now been adjusted supplies are expected to come in more regularly. The demand has been nothing extra of late, and with larger offerings values are low. The better offerings of asparagus are up a little, but there is a good deal that has to be forced out below figures quoted. Tomatoes are beginning to arrive in great quantities from many districts, and prices are down to midsummer level. Eggplant also is lower, also bell peppers and okra, though summer squash is doing better at the moment. Cucumbers are steady. Corn is plentiful, ordinary offerings clean up slowly at low prices.

Cucumbers, lugs 50 @ 75c

String Beans, lb. 2 @ 4c Summer Squash, lugs 50 @ 75c Peppers, bell, box 50 @ 75c Asparagus, box75 @ 1.00 Eggplant, lugs 75c Peas, lb. 2 @ 3c Tomatoes, lugs50 @ 1.00 Green Corn, sack50 @ 1.00 Okra, box 75c

POTATOES AND ONIONS.

High prices recently quoted on potatoes are firmly held, there is considerable demand for shipment to distant points, supplies available are light. Red onions going off the market, yellows are beginning to arrive in good shape, and prices weakening.

(On wharf.)

Potatoes, ctl., Delta ...\$1.50 @ 2.00 Southern 2.00 @ 2.25 Onions, yellow 1.75 @ 2.00 Garlic, new crop, per lb .. 5 @ 6c

POULTRY.

Local demand is picking up, but can hardly be considered active; with fairly liberal offerings from nearby points, as well as a steady influx of Eastern stock, last week's advance was not held. Young stock will not bring over 20 to 22c per lb., roosters also are rather easy, though hens clean up fairly well. Ducks lower.

Broilers, 18 lbs. to doz. and less, lb 20 @ 22c do, over 18 lbs. to doz. .. 20 @ 22c Fryers 20 @ 22c Hens, extra, per lb. 17 @ 18c Small 16c Smooth Young Roosters, per lb. 23 @ 25c Squabs, per doz. 2.00 @ 3.50 Geese, per pair 2.25 @ 3.00 Ducks 13 @ 14c Old 12 @ 13c Belgian Hares 7 @ 9c

BUTTER.

The butter market receded a little from last week's average, supplies have been coming in freely, there

has been no important outlet in shipping channels to absorb surplus. Dealers not taking more than enough for immediate needs.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	25 1/2	26	25 1/2	25 1/2	25 1/2	26
Prime Firsts	25	25 1/2	25	25	25	25
Firsts	24	25	25	25	25	25

EGGS.

Eggs have stiffened up again this week, after easing off a few days previous, market at present is fairly firm. The advance is due to an improvement of local demand, with large shipping inquiries and comparatively heavy movement to Los Angeles. Arrivals from nearby producing districts decreasing.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	27 1/2	26 1/2	26 1/2	26 1/2	28	28
Sel. Pullets	24	23 1/2	24	24 1/2	25 1/2	25 1/2

CHEESE.

Monterey cheese lower, with large supplies; fancy flats show further decline, with supplies slow to clean up. Y. A's, fancy 17 c Fancy Calif. Flats, per lb. ... 13 1/2 c Monterey Cheese 14 @ 16c

LOS ANGELES DAIRY PRICES.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	26	26	26	26	26	26
Eggs	27	27	27	27	27	28

DECIDUOUS FRUITS.

Berry market shows more strength than for some time, several lines quoted higher, though strawberries continue in liberal supply. Shipping business in apples has been quiet until a week ago, with considerable demand since, with orders from South America and other export markets, large inquiries from England, and good demand in Middle West. Gravenstein crop is reported quite heavy. Some storage stock is still left, but being forced out at irregular prices. Pears lower, supplies rapidly increasing. Apricots fairly firm, with moderate supplies and good demand, peaches are easier with ample arrivals, including unattractive stock. Red nectarines find fair demand at slightly better prices. Plums weak, but German prunes sell readily at fair prices. Figs higher and lighter arrivals. Cantaloupes have dropped a little, with plentiful supplies from Turlock district: watermelons remain firm. Grapes easing off as offerings increase. Some Tokays have appeared, but not quoted.

Currents, chest\$4.00 @ 4.50 Loganberries, chest 3.00 @ 4.00 Blackberries, chest 3.50 @ 4.50 Raspberries, chest 5.00 @ 7.00 Strawberries, chest 4.00 @ 6.00 Apples, Gravenstein ... 1.00 @ 1.25 Astrachan85 @ 1.00 Alexander75 @ 1.00 Crab apples, lug40 @ .50 Pears, Bartlett, bx, No. 1 1.25 @ 1.50 Other varieties50 @ 1.00 Apricots, small box40 @ .75 do, lugs 1.25 @ 1.50 Peaches, lugs 1.00 @ 1.40 Peaches, basket50 @ .75 Figs, black, bx, dble layer .90 @ 1.15 Plums, crate40 @ .75 lugs75 @ 1.00 Prunes, crate 1.25 Nectarines, crate75 @ 1.25 Cantaloupes, standard crate 2.00 @ 2.25 Watermelon, lb. 1 @ 1 1/2 c Grapes, Thompson, lugs 1.75 @ 2.00 Fontainebleau 1.00 @ 1.25

DRIED FRUITS.

There has been a fair movement of dried fruit in the country during last few weeks, local packers describe market as rather quiet, both here and the East, as present prices are considered high, buyers everywhere are disposed to proceed with caution. Growers willing to go slow, feeling that fruit is pretty sure to be worth fully as much several months in the future as now; very little really desirable stock being offered below appearing quotations, while a great deal is held at an advance. Little yet done in new apples, old stock is well out of the way and market shows signs of firmness. The local trade claims to have sufficient apricots for nearby requirements, there is no immediate prospect of renewed activity, consuming demand being

Special Livestock Market Report.

Cattle.—No improvement can be reported in the cattle situation, there still being an over-supply and while those offered are not of the choicest quality they are plenty good enough for the prices being paid. Some improvement in prices is expected in August, though it now looks as though there will be plenty of cattle all fall. Feed is becoming more of a problem and reports from Nevada say that the ranges are not at all good there this season.

Sheep.—Both Red Bluff and Nevada lambs are beginning to arrive in satisfactory numbers and a few wethers continue to come in from Oregon and Nevada. The sheep sale, however, is not at all good, the only

reason attributable being high prices.

Hogs.—A comparatively small number of hogs are arriving in face of the 8 1/2-cent top and a good many of those that are being received are of inferior quality. No change in last week's quotations can be made.

Wool.—Local dealers report "nothing doing," finding it impossible to move anything at a profit, due, they say, to the high prices that have been paid for fleece wools. There is still a lot of wool held in the country but it is reported to be mostly short or defective. Activity at unchanged prices is reported in Eastern markets and the markets all over the world are booming.

somewhat curtailed by present prices. Many shipments are beginning to come in from various parts of the country. Prunes extremely firm, with a growing conviction in the trade that prices asked are justified, but Eastern buyers are following waiting policy. Peaches rather slow sale. Raisins reported in strong demand everywhere.

Apples, old crop 7 @ 7½ c
Apricots, per lb, 1916 12 @ 13 c
Figs, white, 1916 6½ @ 6¾ c
Black, 1916 5 @ 5½ c
Calimyrna, 1916 9 @ 10 c
Prunes, 4-size basis, 1915 5 @ 5¼ c
1916 5 @ 5½ c
Peaches, old 5 @ 5½ c
1916 6 c
Pears 6½ @ 7 c
(Associated Raisin Co. Prices.)

Fancy Seeded, 16 oz. 7 c
London Layers, 3-crown,
20-lb. box, 1916 \$1.30
Imperial Clusters, 6-crown,
20-lb. box, 1916 2.50
Bulk, layers, 50-lb. box, 1916 2.75
cases, per lb 8¾ c
Sultanas, 50-lb. cases, per lb .8 c

CITRUS FRUITS.

The Eastern markets have been stimulated by the hot weather, and the demand for lemons and oranges has caused higher prices. On the New York auction, Monday, July 17, Valencia oranges averaged from \$2.35 to \$4.40 and lemons from \$3.40 to \$3.95 per box. At Boston the same day Valencia averaged from \$2.45 to \$3.90, and lemons from \$5.75 to \$6 per box.

Shipments from southern California are going east in good quantity, averaging about 70 cars of oranges and over 50 cars of lemons daily. Growers anticipate heavy lemon shipments during August and September at good prices, as there is little stock held in storage.

Prospects for the coming crop are good, there being a heavy set on the trees, with less than the usual June

drop.

San Francisco quotations are:
Oranges, Valencias \$3.00 @ 3.50
Grapefruit 2.00 @ 3.00
Lemons, box 3.00 @ 6.00
Lemonettes, box 1.50 @ 2.00

HONEY.

There has been fair movement to Eastern markets from the south, arrivals in this market still light, dealers state more could be easily disposed of, very little accumulation. According to local advices offerings in country are limited and firmly held.

Water White, comb 13 @ 15 c
Amber 10 @ 12 c
Water White, extracted 9 c
Light Amber, new 4 @ 6 c
Dark 4 @ 4½ c

NUTS.

Only a limited movement in the way of new almond contracts, though some packers are picking up scattered lots in the country. Old walnuts are well cleaned up, and new crop is still uncertain.

(Prices offered by packers.)

Almonds, 1916:

Nonpareils, lb 17½ c
I. X. L. 15 c
Drakes 13 c

HORSES.

More well-broke draft stock is appearing in the local market than for some time past, this week's arrivals included some attractive stock, market has developed more activity. The better class of horses have been hard to move at prices they should be worth, on the whole stock has cleaned up fairly well. A more active local demand for this class of stock is expected during next few months, though it is early for any large movement. A good many mules have come in, and while few are used locally, they find ready sale for shipment. Supply of horses in most parts of the country is unusually light.

(Approximate values in San Francisco, based on auction sales.)

Drafters, 1700 lbs and up \$ 250
Drafters, 1550 to 1650 .. 150 @ 200
Chunks, 1350 to 1500 lbs 150 @ 175
Wagon horses, 1050 to
1350 lbs 110 @ 150
Green Mountain range
horses, 950 to 1200 lbs 20 @ 75
Farm workers 50 @ 100

LIVE STOCK.

(Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.)

Steers, No. 1 6¾ @ 7 c
No. 2 6½ @ 6¾ c
Cows and Heifers 5¾ @ 6 c
No. 2 4½ @ 5 c
Bulls and Stags 4 @ 4½ c
Calves, light 7½ @ 8 c
Medium 7 @ 7½ c
Heavy 6 @ 6½ c

Hogs, grain-fed:

100 to 150 lbs 8 c
150 to 250 lbs 8½ @ 8¾ c
250 to 325 lbs 8 @ 8½ c
Prime Wethers 7 @ 7½ c
Spring Lambs, f. o. b.

country points \$5.00 @ 5.50

WOOL.

(Prices paid in the country.)

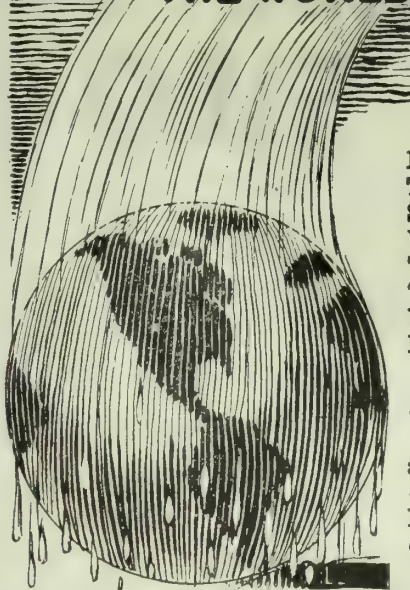
Red Bluff, year's 25 @ 27c
Sacramento Valley, year's 19 @ 25c
Mendocino, year's 31 @ 32c
Mendocino, 7 months' 26 @ 27c
Southern, year's 18 @ 21c
Southern, 7 months' 15 @ 18c
Imperial Valley, year's 17 @ 19c
Imperial Valley, 7 mos 14 @ 15c
Nevada 21 @ 23c

Publisher's Department

A paper that is read by its subscribers brings results to its advertisers. Also a paper that has the largest list of paid subscribers can and does do more good for the industry than one that does not exact pay from its readers. Here is evidence that the Pacific Rural Press interests its subscribers, also that the use of its columns pays the advertiser.

Writing from Lancaster on July 12th, D. H. Graham says, "I think so much of the Press that I have one subscription for myself and men at my orchard, and another for my men at my alfalfa and hog ranch. All of us enjoy the Press, and get

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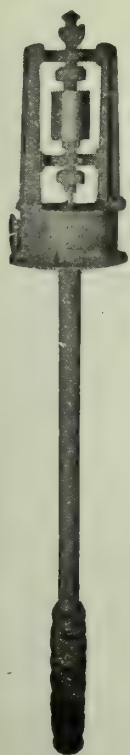
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"The Pacific Rural Press is the only paper that has given me satisfactory results."—C. A. Stowe, Stockton.

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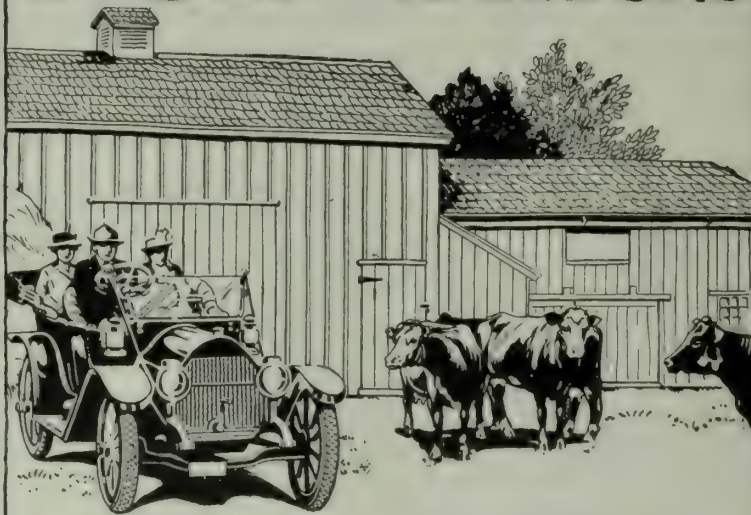
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THE PACIFIC RURAL PRESS

SAN FRANCISCO

JULY 29, 1916.

LOS ANGELES

Costs of Three-Year Almond Orchard.

Before planting this orchard, the marketing possibilities were investigated. Then the requirements of almond trees were studied in orchards at various parts of the State. Then varieties were selected and itemized cost accounts kept for three years.

[Written for Pacific Rural Press by C. L. Moseley, Pennington.]

THE following view of the almond business will warrant the interest, time, and money expended in advancing our orchard to its perfected state of development.

Production Limited.—The almond nut is commonly looked upon as a luxury, as was the olive, orange, and other fruits which have since become staple foods due to commercially organized distributing mediums. The history of the peanut includes more steps of evolution than any other known food. At one time it was only considered "hog feed" by the negroes. A certain far-sighted gentleman, realizing that peanuts were good enough for him to eat, decided to peddle them. He obtained concessions from the circus king, P. T. Barnum, and a few railroads, and for several years enjoyed a modern corner on the peanut business. So far ahead of the peanut is the almond as a staple food product, that it is only due to its limited production today we have not "almond butchers" in the various walks of the common "peanut butcher." Few purchasers of the almond nut from retail stores know even how it is produced and seldom does one see an almond tree except in the few naturally frostless localities having proper drainage and depth of soil. Here we have the main reason for importing 75 per cent of our consumption. California contributes practically all of the balance produced, for the most part by small growers. The present situation is literally one of "little known because exclusively grown."

Able Marketing.—Almond growers are fortunate to have as their distributing medium one of the most successful of producers' co-operative bodies, the California Almond Growers' Exchange. Ably managed, and distributing nearly all the almonds produced in this country, it acts as a clearing house for the various localized almond districts, whose association representatives meet periodically to determine the welfare of the individual grower. Like unorganized producers of other commodities, the almond grower formerly was at the mercy of the middle man and consequently a good many large tracts were grubbed out approximately five years ago. These few features secure the future of any farmer fortunate enough to own almond land. The staple market and firm prices assure success and a business opportunity which will soon advance him from the rank of "farmer" to the rating of the rural business man.

Natural Almond Land.—The Buttes Almond Orchard consists of a square forty selected from the heart of a high-land alluvial fan reaching out from one of the draws in the north slope of the Marysville Buttes. This feature provides the necessary air and water drainage as well as soil depth. The almond, being a thrifty tap-rooted tree, develops a prosperous root system throughout the 30 feet of feeding ground. Prior to planting, a blue print, showing elevation contours, designated the position of each tree with respect to fences and building sites. Resulting from this study over 3200 trees are given ample space, all trees being exactly 25 feet apart every way due to triangular planting. This feature, promoting the attractiveness of the orchard, permits three way cultivation,

and purpose is 15 to 17 per cent to tree-earning capacity per acre. No little time was devoted to variety selection, determined from experiences of prosperous growers in various almond districts visited. Prevailing winds are from north or south, so for pollenizing purposes each variety avenue, consisting of 103 trees, runs one-quarter mile east and west. Varieties selected bring highest prices on market and are tried Hatch varieties, namely, Drake, I. X. L., Nonpareil, and Ne Plus Ultra. There are avenues of two rows of each variety from north to south in order given. Pollenization-effect governs this distribution and works toward constant and bigger crops.

Production plans of this orchard call for "ton-per-acre" crops. Tree records are kept and the watchword has been "efficiency." One incident of this is the feature of a transposal of Nonpareil and Ne Plus Ultra avenues in every other cycle of rotation, so as to bring the Nonpareil trees adjacent to the Drake row on windward side and one avenue nearer on leeward side (north wind prevails during blooming period). This provision was made due to the theory that the Nonpareil bore greater affinity

to the Texas Prolific, a new variety, which was being watched. In case the future demands it, every other row of Drake could be top-worked to Texas Prolific. It is doubtful if future market will ever demand a change in present lay out. T. C. Tucker, Mgr. Cal. Almond Growers' Exchange, in letter writes: "American people eat with their eyes—a nut in Drake or Texas Prolific class must be large in shell and soft as possible. We cannot recommend the Texas, as we find that as the trees grow older the nuts become hard in shell and smaller in size. To date we have been able to sell Texas at Drake value; but we doubt if this can be done in the future, as trade do not like Texas and we feel sure will not pay the price."

Planting.—Nursery stock was developed from seedlings grown in high land soil similar to present conditions, budded into one-year wood, and top grown one year. These, when transplanted "calipered" approximately $\frac{1}{2}$ inch. Every precaution and known treatment was applied to roots and tops before planting. Work was done by men who had orchards adjoining; and the effort was to make this a prize orchard. To insure long life, bud-wood was set to the south—against the heaviest winds. This setting also serves to shade the seedling scar until it can heal over. All trees injured or lacking in thrift during season were recorded and

replaced second year.

Pruning, next important factor to trees themselves, has been done each year by owners. As in other cultural operations, a scientific principle was strictly adhered to; main limbs were brought out, distributed over second foot of trunk, the lowest limb on southwest side one foot from ground, topmost branch on northeast side two feet from bud. This arrangement gives each main limb independent seating and strong union to support framework of tree; develops a spiral crotch preventing its holding water, so eliminating decay; gives balance and sturdiness against heavy winter winds and rains when less fortunate trees are blown over in soft soil; shades the tender wood from the burning afternoon sun on southwest side. Tendency to develop fruit wood has never been tolerated and by means of careful summer pruning the thrift of each tree has been directed towards the development of a strong well-spread frame, which will now support fruit.

Buildings.—Nothing which lends to the convenience and efficiency of a prosperous home ranch was omitted from original specifications. These

(Continued on page 103.)



Upper—Moseley almond orchard, Pennington, on which the cost records of cultivation, trees, pruning, spraying, etc., have been itemized. Lower—June pruned almond tree at end of second year, in the Burdon and House orchard, Durham.

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EDITORIALS

THE WEEK.

ALL believers in law and order and the claims of common humanity will take deep interest in the effort which San Francisco is making to ferret out and bring to justice the perpetrators of the dastardly outrage by which a number of people were murdered and many more grievously wounded, through the explosion of a bomb on the street during the "preparedness parade" on the afternoon of July 22. It was an outbreak of lawlessness, the motive for which has no place in a human heart or in a civilized community. All journals dealing with the general news have brought the details of the affair to universal knowledge, so we need not rehearse them. It is simply for us to join in the general denunciation of the spirit of anarchy which must have impelled the outrage, because those competent to judge assure us that the character of the affair places it beyond the possibility of achievement by a mind diseased. Therefore we have to deal with minds possessed of inhuman impulse and responsible wisdom, and to insist that condign punishment be applied, for the good and the good name of the community. This is the attitude of the people of San Francisco, and every effort will be made to carry out their will. Probably no better reflection of the public spirit could be briefly given than in the words of Supervisor Nelson in a meeting called for action on the outrage:

The murder of innocent women and children is a thing that should arouse us all to united action. If any are suspected I believe they should be apprehended and that all anarchists should be driven out of the community at once. I believe in free speech, but when it comes to talking against our government and advocating murder I believe these people should be driven out of the city. My God, I can't find words to express myself when I think of what has happened!

This is the thought of the people while they still stand confused in the shadow of the outrage. The only consolation which appears at the moment is the assurance, by those wise in ways of criminals, that the dastards will be caught and punished.

A TOWN WHICH LIKES US.

PARADOXICAL as the statement may seem, we are bound to say that this beastly war in Europe, which is blasting humaneness to its foundations, is also developing interest and sympathy between mankind in groups to a warmth and definiteness which are rather new in the world. It seems rational to deplore this as indicating perpetuation of hatred, but it may be regarded by some rather as the seed or cutting from which a truer national love may be propagated for the ultimate reclamation of fellow-feeling throughout the world. However this may be, it is at this moment comforting for us to know that there is a town in Europe which likes California and is picturing its future upon the basis of closer association with us. The town is Bristol, England, and it has a name which suggests alertness, acuteness, and ability in rising up and lying down, against opposition or in recognition of content, as the case may be. This town of Bristol, which is full of antiquity and

honors, is displaying a desire to connect up with the world which would do credit to the most youthful West American aspirant to metropolitanism. For U. S. Consul J. S. Armstrong Jr. writes that Bristol has inaugurated a monthly steamship service with Pacific Coast ports, via the canal, and can effect a saving of from one to two dollars per ton on California produce, to the ten million people within 100 miles of her harbor, on the cost of reaching the same people via Liverpool, London, etc. Good for Bristol! She knows how to do business. Bristol is now enjoying an increased trade in our products, to-wit: alfalfa hay, barley, canned and dried fruits, redwood lumber, etc.—all of which "yearly increase in popularity." And there is another thing which appeals very closely to our affections. Mr. Armstrong says that "public theaters in Bristol use a great many more American films than any other kind, and their hold upon public favor seems to be constantly growing, partly because of the superiority of California for photographic purposes." This seems to be a new measure of the world demand for our photo-play films, and should be a new incentive to California towns which are trying to secure plants for movie-making in their vicinities. Bristol will take our films by steamboat-load in preference to any other. In the words of the admired T. R.: "Bully for Bristol!"

"TRADING WITH THE ENEMY."

AND how much we wish the attitude of bonny Bristol were more broadly British. We can but conclude that the war is getting on the nerves of Johnnie Bull and changing him from a bluff, hearty exponent of fair play and great ideas into a petulant, peevish pervert—with his gaudy waistcoat flapping idly over a cavity where his great heart used to beat so grandly. Interference with passengers and mails on our ships, embargoes on our wholesome food products which his people need, and, more recently, "black lists" of boycotted American firms which are doing fair world-trade which they have a right to do—these are all little, nagging interferences and encroachments on American rights which Mr. Bull should surely wash from the slate before he comes into the great world clearing-house at the close of the war. And then those trade alliances between the nations linked against Germany which are to follow the war—what a silly piece of economic futility they are! What an unfortunate effort to perpetuate the asperities of the war they vainly try to embody! When this fearful quarrel is over, all the people of the world who survive it should naturally rush together in thanksgiving for peace and in honest desire to understand each other so well that the gage of battle will be broken forever. Opposed to such honest reconciliation after a hard fight, which mankind always yearns for, we are threatened with trade alliances which will curdle the milk of human kindness indefinitely. But the good sense of the world, even of those nations which are now so full of hate, will not permit the erection of such monuments of war; and so, perhaps, it is needless to waste much thought upon them.

SOUTH AFRICA MAY GET A LEMON.

BUT though the policy of national discrimination will not prevail long nor widely, it creates ill-feeling and may induce unwarranted anticipations of advantage and of disadvantage. One such item of influence attracts comment because it has citric flavor which naturally fastens on the nostrils of a Californian. There comes floating on the journalistic tide this item:

One of the most remarkable developments in the industrial history of South Africa has been the growth of the fruit industry, and particularly the citrus fruit industry, during the recent years. Indeed, the Union Trades Commissioner has not hesitated since his return from the other side to declare his belief that California will be outrivalled within the next few years and that great fortunes will be made in orange growing.

Now, in ordinary times this would pass as a very commendable piece of local confidence and force in which we might rejoice as new evidence of the development of the citrus industry and the increasing recognition of the wholesome service of semi-tropical regions to the zones of frost and torpid rivers. And, in ordinary times, we could rejoice in

the development of the citrus industry in South Africa, not only on such a world-basis, but also because there are leaders in its development who were Californians, either in experience or education; and toward all such we always cherish warm attachment. But now there arises that ugly phantom of allied trade after the war, coupled with discrimination against enemies and neutrals, and the whole hateful company of trade discriminations and preferences. While we believe it will prove impossible of enforcement because of evident opportunities for retaliation, it will, so long as it may last, perpetuate the spirit of conflict and leave the world crying peace when there is no peace. And while it lasts, too, it may encourage development of citrus production for export in the southern hemisphere on the expectation of special privilege over enemy or neutral enemy-traders, which we believe will never be realized. The citrus industry of South Africa does not need such artificial support, and it will develop more sanely and safely without it if it has a full, and not a restricted, chance at all the northerly nations of Europe. The field of south-hemisphere oranges in the northern hemisphere is naturally limited because the chief shipments will arrive during the summer and autumn abundance of home-grown deciduous fruits. It will take considerable imperial loyalty to induce the English to forsake gooseberries and stewed damsons for citrus fruits at the flush season of the former, and it will be harder still to turn the Canadians from their greater variety of home-grown fruits at that season. And when the northern nations of Europe and America really enjoy citrus fruits they must have them from the Mediterranean or from the vastly greater supply regions of the United States, when these north-hemisphere citrus regions have their fruits just ripe to move. Therefore, we apprehend South Africa is more apt to get a lemon from "allied-trading" than to sell an orange.

CALIFORNIA SEEKS RURAL CREDIT BANK.

IT IS but natural that Californians should make a strong claim for the location for one of the central banks of the rural credit system within this State. According to the new law, to which we have alluded in recent issues, there are twelve of these central land banks to be established in the country. There must surely be one on this Coast, and California is not only central in the Coast district, but is the leader in agricultural development, in population, and is the financial center toward which the transactions as contemplated for such a bank would naturally move. There should also be a central bank for the mountain States of the slope, because the effort to operate mountain land affairs from the Coast or Coast affairs from the inter-mountain plateau, would surely seem an incongruity. We are therefore quite in sympathy with an effort which the California Rural Credits Commission has started for the purpose of securing one of these banks. Professor Elwood Mead, chairman of the commission, says that the body already had urged the California Congressmen and United States Senators to get back of the movement. As the twelve banks are by law to be located and organized by the Federal Loan Board, to be appointed by the President, it is hardly likely that location will be immediately made. Therefore opportunity to present California's claim may be open for some time, for this board must find and organize itself before it makes locations. All our agricultural organizations should make their influence felt in the matter, and fortunately there is time for it.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco, for the week ending at 5 p. m., July 25, 1916.

STATIONS	Past Week	Rainfall Data		Temperature Data	
		Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka .....	.0	1.29	.11	62	43
Red Bluff .....	.0	1.02	.0	106	70
Sacramento .....	.0	.06	.0	106	58
San Francisco ..	.0	.03	.01	80	50
San Jose .....	.0	.0	.0	93	52
Fresno .....	.0	.0	.0	103	66
Independence ..	.0	.0	.0	100	..
San Luis Obispo ..	.0	.0	.01	82	52
Los Angeles .....	.0	.0	.0	78	58
San Diego .....	.0	.02	.0	70	60



Grain Aphis on Sorghums.

To the Editor: I am enclosing a leaf of feterita which is covered with a little green bug which is not only on the feterita but also on Kafr and milo maize. I would like to know the name of the insect and the means of eradication or prevention if any.—G. R. A., Wheatland.

The insect is the old "grain aphis"—aphis avenae. This insect often appears in threatening numbers and sometimes does great injury. Generally, however, it is checked by unfavorable weather conditions or by multiplication of lady birds and other insects which devour it. All which are reached by a soap or tobacco spray are easily killed, but the cost of spraying is usually regarded as too great to be practicable with a grain crop of any kind.

Apricot Pruning and Irrigating.

To the Editor: Please advise me regarding the irrigating of my bearing apricot orchard before or after pruning. I have always pruned them as soon as the crop was harvested and now that I have irrigating water of my own I wish information on this subject. The crop will be harvested in a few days and we will be ready for this work.—Grower, Mountain View.

If you are sure that summer pruning is good for your trees, by all means prune first and irrigate afterwards so that you need not tramp over freshly moistened ground to its injury and your own inconvenience. But you should be sure that your trees are helped to bear by the depression of vigor which such early pruning engenders by robbing the tree of so much of its foliage. Where the tree is not given to too strong wood growth it would be more rational to irrigate after fruit picking, and prune when the season's growth seems well nigh complete—say in September or October.

Root-Rot of Geraniums.

To the Editor: What causes my geraniums to wither and die? They are all cuttings rooted last November. They grew well and bloomed very freely till about June first. Since that time many of the plants have died. The soil is heavy but was well mixed with sand and manured liberally a few months before the plants were transplanted. Would it be safe to start new plants from the best-looking cuttings?—E. H., Merced.

Your geraniums are going off at the root, and the cause is apparently too much manure or water (neither of which is relished in excess by geraniums) or possibly you are working against a rise of alkali—brought up by surface evaporation of excess of water earlier in the season. By all means start new plants from any good top-growth remaining—rooting them in the shade in sandy soil kept only moderately moist.

What Happens During Fruit Ripening?

To the Editor: What reactions occur in pears and plums while ripening after being picked immature for shipment?—F. C. B., Sacramento.

This is a most profound and in the present state of knowledge, an unanswerable question. Beyond the preliminary generalization that starches change to sugar and that certain ethereal substances are developed, there lie areas of chemical and physiological transformation which have never been accurately explored. Excursions have been made into these unexplored areas and some interesting observations recorded in technical literature, but the what, why and how of the phenomena as a whole are still awaiting investigation. Frugivorous promoters and dietarians have had learned dreams which seem reasonable and wholesome and have probably served a good purpose. Their discourses may be philosophy, but they are not science.

The Smaller Potatoes for Seed.

To the Editor: In connection with your comments on size of potatoes for seed I would add that, as I get it, the reason for planting small potatoes for second crop in the interior is that large potatoes will rot if cut and have too many eyes if not cut; so small potatoes are all that is left. This is different from buying small potatoes. I believe small seed under usual conditions is good provided it is grown small purposely by crowding the plants, culture otherwise being as it should be, so that the

small potatoes are from good stock and not naturally runts.—D. J. W., Berkeley.

That is reasonable. Of course in discussing the smaller potatoes for seed we do not refer to the "nuts," which are usually immature, without well developed eyes, etc. Besides, these "nuts" do not have bulk of starch sufficient to strongly start new plants. We should not hesitate to buy the smaller potatoes for seed providing they had bulk enough and are well matured.

Summer Sowing Alfalfa.

To the Editor: I would like to sow alfalfa in about two weeks, if there is a chance to get a good stand. The ground is well prepared and I have plenty of water to irrigate with. Will you please advise me as to sowing alfalfa this time of the year or not? Neighbors who have been seeding lately claim that birds eat it as fast as it comes up. L. V., Chowchilla.

Where you have plenty of water and a soil which will take it without baking hard, it seems to be possible to get a good summer catch of alfalfa by sowing it under a shade crop. Frank Hasper of Imperial county (Pacific Rural Press April 8) did well by sowing milo, harrowing in the seed. When it was well up and needed irrigation he sowed alfalfa and then irrigated and the seed caught well. This is only practicable with enough water; otherwise the sorghum will dry out the alfalfa even if it should start, which would be doubtful. Perhaps the sorghum will keep the birds busy. But we do not advise this course. We would rather sow cow peas for forage and put in the alfalfa after plowing in what is left of the peas in October.

Sowing Millet and Alfalfa.

To the Editor: I wish to sow barley or oats with alfalfa so I can get some hay, but I fear that these grains will not grow if sown now. Can I get good results by sowing millet with the alfalfa? Will it hurt the alfalfa?—F. R. T., Oakdale.

There will probably not be any alfalfa to be hurt unless you fill up the ground with water before plowing and use more later as it may be needed. If you have the water your question becomes much like that of L. V. of Chowchilla above. Possibly you could work millet instead of the milo, but you must not seed very heavily or else you may get plenty of millet and not enough alfalfa to notice. Our present knowledge does not approve these midsummer catches for alfalfa. To get a good stand, alfalfa should have all the light and air it needs and be started at a time when it will not perish from thirst or be burned out with water standing on it. As we have told L. V., we had rather try and make a good summer crop for hay or forage and give the alfalfa an early fall or an early spring start and make a business of getting a good stand, not a scant catch.

Leaf Chafers in Orchard and Garden.

To the Editor: I send you specimens of a fat brown bug a little larger than a lady bug, known here as a "June bug" because it comes in June. It buries itself during the day and at night feeds on the leaves of plums, apricots, and rose leaves. Do you know something to exterminate them?—G. T., Lankershim.

The insects are not the big "June bugs" of the east but they belong to the same bunch and act in the same way. They belong to the genus *Serica*. The larvae feed on plant roots and the perfect insects feed on foliage, etc., as you have observed. Though the insects come in great numbers and do much damage they do not stay long. As they are leaf eaters, they can be poisoned by spraying the foliage with lead arsenate and if this is done as soon as they are first seen, their injury can be reduced.

Drawing "Sweetness" from the Soil.

To the Editor: Is it true that the raisin grape, fig and prune draw sweetness from the soil and therefore one should not plant sugar beets between the trees and vines because they will take away from the fruits the sweetness which they also need? I know of a farmer who planted raisin grapes between his fig trees and when the trees came into bearing the figs were not so large nor were there so many of them as on the trees of the same kind and age, of a neighbor who had no vines

between the rows to draw the ingredients from the ground that the figs needed. When the first farmer dug out his vines the fig trees did much better because there were no grapes to rob the figs of the sweetening properties of the soil.—R., Fresno.

There is nothing in the soil which directly enters into the formation of sugar in the plant except the water. Starch and sugar are produced in the plant tissue by the combination of the water, which the plant draws from the soil, with the carbonic acid which enters through the leaves from the air. As plants do not get sugar directly from the soil, it cannot reasonably be said that they can rob each other of sweetness in the soil because there isn't any in it.

Of course it may be said that they indirectly rob each other of sweetness because if they rob each other of anything which makes thrift in the plant, it cannot make sugar or anything else which renders its growth profitable. This however is, evidently, not what our correspondent has in mind, for he has a conception that the soil has a definite quantity of sugar-properties in it and gives the plant directly what is required to produce sugar. From only one point of view is this correct and that is in placing emphasis on the water which is drawn from the soil. This not only enters into the production of sugar but is the controlling requisite in the thrift of the plant, without which it cannot make sugar or anything else. A sufficient water supply is therefore essential to the achievement of size, weight, sweetness, fragrance and everything else which makes a plant worth growing. And it does this not only by supplying its own substance but because it carries into the plant all other substances which the soil contributes to its growth. But sweetness is not one of these substances: the plant makes its own sweetness with water, sunlight and atmospheric gases.

The reason why the raisin grapes and figs did not do well together in the case cited was because the former robbed the latter of water, and the nitrogen, phosphoric acid, potash, etc., which it could carry. Of these carried substances none are found in sugar. And the vines also robbed the trees by preventing proper cultivation, through which more water was lost. These two forms of robbery reduced the thrift of the fig trees, produced the results described, and removing the robbers set the trees free to do better. These robbers stole no sugar but they got away with the "makin's" of it.

Apricots and Plum on Almond.

To the Editor: I have almond seedlings which I wish to bud to apricots and plums. Some say apricots do not do well on the almond: some say they do. I grafted a few on almond this spring and they have done well but I fear they may not be found satisfactory later. How do plums do on almond root?—Y. S., Winters.

It is common experience that the apricot is most likely to refuse good union with almond—trees blowing off at the joint after getting large. We consider apricot unsafe on the almond and, so far as we know, experienced propagators abandoned the use of almond. The French prune and its near relatives do exceptionally well. In our experience a number of the Japanese plums have stood it well, but many plums are very finicky and it is safer to work them all on myrobalan on which they seem to agree. Besides, most people wish to grow plums on soils which do not well suit the almond root.

Federal Tuberculosis Quarantine.

The Federal Government placed a tuberculosis quarantine on five Illinois counties Oct. 1, 1914, in co-operation with the State Livestock Sanitary Commission. Men in the five counties had been buying tuberculous cattle and shipping them to other States until several of the latter quarantined against all cattle from Illinois not accompanied by certificate of freedom from tuberculosis. The Federal quarantine is to be withdrawn Aug. 1, the State having passed a law to control the situation. The quarantine required that all dairy cattle shipped out be non-reactors tested by U. S. officials.

Citrus Spraying Symposium.

[Written for Pacific Rural Press.]

Chas. F. Collins, Tulare county horticultural commissioner, May 24. —In your issue of the 20th inst. under head of "Citrus Spraying Advantages" was a purported interview with F. H. Browning of Orange county which interested me greatly owing to the fact that my experience differs so widely from that of Mr. Browning.

According to his statement he secured a kill of only 10 per cent with fumigation, while with two sprayings he got a percentage 85 or 90.

Fumigation with hydrocyanic acid gas for scale on citrus trees has been practiced so successfully for so many years that anyone who knows anything about the game knows that a 10 per cent kill means inefficiency either in the material or operator, and not in the method. In the 3500 acres fumigated in Tulare county, all of which was carefully inspected, not one job fell as low as 85 per cent and, with three or four exceptions, even as low as 95 per cent. In fact a very large proportion of the work showed better than 99 per cent kill and we do not feel satisfied with any work that falls below 98 per cent, as we believe that work inferior to this is usually due to carelessness or ignorance on the part of the operator. Of course such results as above cannot be obtained without careful and painstaking attention to details which any grower has a right to demand and any conscientious fumigator will readily grant.

The sprays which have been tried out here include the various miscible oils, different forms of distillate and kerosene emulsions, Scalercide, Schnarr's Insecticide, Gold Dust, Pyrox, Shure-Kil, and various other compounds, some of which were of local manufacture and not burdened with a patent name, but all of which proved disappointing, and in many cases disastrous to the growers.

The spray which is said to have produced such wonderful results for Mr. Browning has resulted in unreasonable and inexcusable damage here. The agent claims it was applied at the wrong season, although still advertising it to "destroy all scale living or unhatched at any time of the year and not burn the fruit or trees." This statement is so palpably misleading and preposterous on the face of it to anyone with even a smattering of knowledge regarding scale control on citrus trees that it is not worthy of attention. It is further advertised as being "50 per cent cheaper and 50 per cent more efficient than fumigation." As evidence of the falsity of this statement, we have orchards here sprayed once at a cost to the owner of over 37c per tree which any reliable fumigator would do for 35c. Furthermore the kill of scale is about 60 per cent, while the present crop is ruined and the trees damaged to such an extent that it will require two years to recover.

The one insurmountable barrier to successful spray work on citrus trees with any formula is the fact that it is a physical impossibility to hit a reasonable per cent of the insects without using material in such quantities as to make the cost pro-

hibitive. Of all the demonstrations of spraying for citrus scale in this county, and they have been many, none have proved of any advantage over fumigation, but decidedly to the contrary when expense and efficiency are both considered.

Editorial Note.—That was a real interview with Mr. Browning by the writer, who walked through the orchard and examined the trees for at least two hours one day this spring, along with Mr. Browning. We do not doubt the facts as stated in any respect.

It is quite likely true that the poor kill from Mr. Browning's fumigation was due to inefficiency. Likewise, we believe that the poor kill in the usual spraying is also due to inefficiency of the workmen, provided the spray is such as will kill the insects without injuring the trees.

Before the writer investigated any of the dozen sprayed orchards which he visited, the Shure-Kil people told us that during a short period they had used second-hand oil barrels at their factory, and that it had come to their notice that these barrels had not been thoroughly cleaned before using for the spray. When this was learned, they immediately sent notices to all their customers advising them to return all spray which showed free oil on top, and promising to replace it with the regular spray. This may have been the cause of the damage by this spray in the Tulare county orchards, for we have seen many orchards in the South on which the spray had been used and in which we do not believe that either the fruit or the trees had been damaged by the spray.

Some of the small branches and twigs indeed were dead. These showed unmistakably where they had been plastered thickly with scale which had dropped off before we saw them. In many other cases, the branches were still thickly plastered with scale, practically all dead.

Our publisher says he will certainly cancel our citrus spray ads if it is shown that the best interests of our readers will be hurt by their using the spray. Our talks with the growers, however, convince us that citrus spraying is practicable and efficient when administered as painstakingly as Tulare county fumigation has been—with several advantages, as mentioned in the article.

Dr. R. E. Pierce, Tulare county:—I am as yet in no position to say anything definite about citrus spraying. The effects of Shure-Kil as seen by me are anything but satisfactory. Although it kills the scale, it also defoliates the trees and drops the fruit. Other sprays, while efficacious in kill, spot the fruit. I believe the present season will produce a much more satisfactory spray than has yet been used. Until more definite conclusions can be arrived at, fumigation, while by no means entirely satisfactory, is the chief method of scale control that will be used here during the coming season.

[At Dr. Pierce's request, we withheld from publication data which he gave us in Sept., 1915, regarding his orchard of which 13 acres were sprayed and 14 fumigated in that

season. He wanted more time to estimate the relative kill.]

G. B. Moore, Tulare county:—Some of my 15-year Navel trees were sprayed late in March with a 20 per cent mixture of Shure-Kil under the spray people's supervision and at 250 pounds pressure. They had never been fumigated and quite a number were black on one side with scale. The trees seemed healthy and bore a good crop in 1915 but naturally had no fruit on when sprayed.

Leaves and young growth fell after the spraying, and they look bad with brown stems showing. The costs of spraying and fumigation would be about equal. I can't say that spraying is a failure. But I do condemn this spray mixture at this percentage. It may not require 20 per cent to kill scale, but I know from sad experience that it is too much for the tree.

Allen Break, San Bernardino county:—I sprayed two navel trees late in May. They were 20 years old and I used 9 gallons per tree under the spray people's supervision. The trees had been fumigated with a 75 per cent kill in 1912; but were healthy and not badly infested when sprayed. About half of the leaves fell, some of the young wood was burnt, and fruit dropped badly. Within 48 hours after spraying, citricola scale were loosening up and eggs decaying. My fumigation cost about 60 cents, and spraying about 27 cents when hired done.

Shure-Kil Spray Co., May 26:—All told, we believe, not two acres have been sprayed with S-K 23 in Tulare county. About 100 trees in the Lindsay orchard of Col. Rees, who lives at Whittier, were sprayed by sprayers who had never done that class of work before; and as is usual in such cases, unfortunately they wanted to do too good a job and overdid it by putting on too large a dose. It was reported to Mr. Rees that the sprayers stopped of their own volition when they saw too many leaves dropping. Mr. Rees being a Whittier grower, where perhaps 100 orchards have been sprayed, knows all about S-K, and wasn't concerned about the damage reported,

but thought it might be best to wait until a little later in the season.

We have made perhaps two dozen demonstrations in various parts of Tulare county, ranging from two to three trees in an orchard. Some of these have shown a rather heavy dropping of leaves, but this also happened in other parts of California at that particular time, but since that time we have found that the water conditions there are entirely different from what they are here, and a different treatment will have to be used in order to obtain good results, the water being so hard it doesn't mix properly with our emulsion. Our chemist has already overcome this difficulty.

ALMOND LEAVES FALLING.

To the Editor: My almond leaves are turning yellow and falling.—H. I. E., Walnut Creek.

[They probably have brown mites or red spiders. Look very closely along the midrib on the underside of a leaf that remains on a twig from which a few have fallen. Run a finger nail along the rib lightly so as not to crush the bugs and you will see them scampering. Get a power blower for dry sulphur and save what you can by spraying thoroughly every two or three weeks. Or spray under sides of leaves with atomic sulphur. Do it earlier next season, as the mites and spiders are more easily killed when young.]

NEW PEAR VARIETY.

[Written for Pacific Rural Press.]

A pear that ripens three weeks later than the Bartlett but looks like that variety, has practically the same quality, and has been held in storage six months with good results, is grown commercially in Australia under the name of Peckham's Triumph. When Hayward Reed of Sacramento county visited Australia last summer he became interested and now has on the way a shipment of trees to plant on his Marysville ranch, according to A. E. Ollson, who has come over from Australia to learn California methods under Mr. Reed's direction.

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New Method for Canning Vegetables

[Written for Pacific Rural Press by Prof. W. V. Cruess, Univ. of Calif.]

All of the present methods for the home canning of vegetables either require a somewhat expensive outfit or are very troublesome to apply. Vegetables are difficult to sterilize because of two factors: first, they contain bacteria which are difficult to kill by heat; and second, they are deficient in acid-which makes it difficult to kill the bacteria by heat. Tomatoes and rhubarb are exceptions to the above rules. The spoiling of vegetables after canning is always due to these resistant bacteria which grow in the canned article and cause it to sour or burst the can or jar from the formation of gas. The processes of canning are carried out principally to kill the bacteria causing spoilage.

It is a well-known fact that various acid vegetables such as tomatoes and rhubarb are very easily sterilized at the boiling temperature. This is because they have a high amount of acid. The acid makes the killing effect of the heat very much more pronounced. These facts suggested the addition of some acid to vegetables before sterilizing in order to reduce the time of sterilization and to avoid the use of expensive steam pressure outfits. The experiments made with the application of this principle have been very successful and the methods outlined below are based on the results of the tests.

By ordinary methods, vegetables must be sterilized under steam pressure or must be sterilized at the boiling point of water for one hour on each of three successive days or in one single continuous sterilization at the boiling point for three hours. By the application of the new method, vegetables may be successfully sterilized in one hour or less at the boiling point.

Equipment Necessary.—An ordinary wash boiler with a false bottom made of wood or of wire screen is all that is needed for a sterilizer. An ordinary cook stove may be used for heating the water in the sterilizer. In addition to this a gallon or quart measure should be available and also a small measuring cup or glass which will measure the ounces, will be necessary. If the vegetables are to be put up in cans, a capping steel, tipping steel, and a gasoline blow torch for heating the soldering irons will be needed. Names of the manufacturers of these articles can be obtained on application to the University. The capping and tipping outfit necessary for these may be had for about ten dollars or less.

Source of Acid.—Lemon juice has been found to be very satisfactory as a source of acid in the canning of vegetables. Its known purity and wholesomeness make it a very desirable material for this purpose. Its cheapness and availability are also recommendations. Vinegar could also be used.

Peas.—The method applies to practically all vegetables and if rather complete directions are given for one vegetable, the process can be extended to others.

Step One: Shell the peas in the ordinary manner.

Step Two: Place the peas in a clean flour sack or in a cheesecloth

bag and immerse them in boiling water until they have softened and begun to wrinkle slightly. This is known as blanching the peas and removes the bitter principle from the skin. This will take from one to ten minutes.

Step Three: Fill hot into jars or cans.

Step Four: Prepare a syrup consisting of salt, 2 ounces; sugar, 8 ounces; and water, one gallon. Heat this syrup to boiling and pour the hot syrup into the cans or jars to cover the peas.

Step Five: Seal the cans with the soldering iron according to directions given with these articles by the manufacturer. If jars are used, seal them in the ordinary way.

Step Six: If cans are used, place them in the wash boiler of boiling water and leave them for one hour. Allow them to cool to room temperature. If jars are used, place the sealed jars in water which is just a little too hot to permit holding the hand in it. If the water is too hot or too cold, it will cause breakage. The false bottom under the jars is necessary to prevent breakage by direct heat from the fire. Bring the water to boiling and boil for one hour. Remove the jars and allow them to cool in a quiet place free from draughts.

Peas or other vegetables canned in this way often have a rather "raw taste, but will keep indefinitely. They may, however, be given further cooking after the can is opened. This is desirable because the flavor of the vegetables is better if the cooking is carried out after canning rather than during canning.

String Beans.—The process for string beans is exactly the same as for peas except that the brine used consists of salt, 3 ounces; lemon juice, 5 ounces; and water, one gallon.

Corn.—The brine for corn should consist of salt, 2 ounces; sugar, 4 ounces; and lemon juice, 8 ounces; water, one gallon.

Asparagus, Artichokes, Carrots, Parsnips, Turnips, etc.—These take the same brine as string beans and same process otherwise as peas.

Tomatoes.—The addition of lemon juice is not necessary with tomatoes and they are simply canned in their own juice because it contains sufficient acid for the purpose.

All the vegetables canned by this method have a slight but not disagreeable acid taste. The quality of the products is very good and the method should be very popular for the home production of canned vegetables for table use. The commercial possibilities of the process do not seem exceedingly promising because all of the commercial canneries have already installed machinery which will carry out the sterilizing processes satisfactorily and therefore there would be no demand for the use of lemon juice in this regard.

FORCES GROWTH OF STOCKS FOR WALNUT BUDDING.

[Written for Pacific Rural Press.]

A system of forcing walnut stocks to greater growth at the time of

budding, insures a better union and better growth of scions for J. F. Kennedy of Paicines. We give his method in his own words:

"We prepare the buds by cutting off the leaf-stalks as soon as the buds are well developed. Give the trees to be budded, plenty of water in August, and keep the stocks growing rapidly. In the latter end of Sept. begin your budding, on cool days only. Choose the smooth buds, cut as little wood as possible with the bud; leave a little wood just beneath the bud, take out any other without injury to the bud; insert the bud from the bottom upward as in shield-budding; tie as in common method."

PRUNE AND APRICOT ORGANIZERS BUSY.

[Written for Pacific Rural Press.]

Prune and apricot growers are signing stock and crop contracts rapidly in Santa Clara valley; a recent enthusiastic meeting at Napa called forth a large per cent of all the growers, and the work will soon be under way in the other districts interested. Twenty-one growers signed up at the meeting of the Cambrian school district July 15. Merchants and growers provided an elaborate meeting at Gilroy July 24. About a dozen such meetings have been held, and others are scheduled at the rate of three or four per week.

System.—In Santa Clara county

are about fifty school districts in which prune and apricot growing are the main interests. Eight or ten of these districts are grouped into each of several units. A solicitor for each unit is paid by the State Central Organization Committee. He arranges the meeting in each school district at which the plans and purposes of the organization are explained. A vote is then taken, favoring organization, and then the solicitor visits every grower in the district.

Funds.—There is considerable expense. The merchants of San Jose have endorsed the organization and undertaken to raise from Santa Clara county business men an organization fund of \$10,000. This is a donation to the cause; but it is proposed, if growers do not take all of the stock and outsiders must be included, to award \$10,000 worth of stock to the donors of this fund.

Meanwhile, growers who sign up their crops are asked to advance 50 cents an acre, more or less, according to their ability, to apply on their stock payments, but to be used now to further the organization. If Santa Clara growers advance enough this way, the merchants' fund of \$10,000 will carry the campaign into other parts of the State.

Emphasis is laid on the desirability of bona fide growers owning and controlling all the stock of the organization, and if they will sign for it, outsiders will not be asked to take stock.

"Know Your Soil"

There's No Excuse For Raising Poor Crops Now

SUCCESSFUL crops can be grown with scientific accuracy by determining the exact condition of the soil and applying the fertilizers needed and in proper amount. You don't need to have an expensive analysis made of your soil. You can do it YOURSELF in a few minutes at a cost of a cent or less by using the

Standard Soil Tester

It will tell you whether your soil is fertile or not; whether the whole tract, every single acre and every part of each acre is in fertile condition or not; it tells you what your soil needs, and saves waste of needless fertilization; it tells you whether your soil is RIGHT or not.

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All Prices Postpaid. 525 Market St., San Francisco

Prune Drying Wrinkles.

Care in drying, and quality of dried prunes, will count far more in prices to the grower in the future than in the past.

[Written for Pacific Rural Press.]

It hasn't made much difference whether you had good prunes or poor ones if they were big, and even then you haven't had the full benefit of the size, because the packers have a way of juggling sizes.

You have been unconcerned about increasing consumption because it was not up to you, and the packer you sold to was unable to do it.

Soon you will be called upon to market your own prunes in your own organization, which should require you to furnish only the best quality so they won't waste your money when they advertise to increase consumption. You will have to put up prunes that you yourself would be able to eat.

You will smooth the ground before the first fruit falls, you will pick up the sunburned, wormy, or injured stuff on the ground and throw it away to save the trouble of dipping and drying and then picking it off the trays or leaving it in to damage your market.

You will pick up the prunes every week over the whole orchard if the weather is hot, to prevent sunburn or fermentation. You will change your lye water when it gets dirty, and you will wash the lye water off with a clean spray.

You will not have the lye so strong nor leave the fruit in it so long that the skins will be more than just perceptibly checked.

Too Much Lye Harmful.—When you overcheck the skins they may become ragged and sticky. According to G. A. Fleming of Visalia, who has been in the prune game since it started in Cal., if you dip them very quickly in boiling water with just enough lye to soften the water and take off the waxy bloom without cracked the skin, it may take a day or two longer to dry them, but they will have the black and glossy appearance desired by the trade.

Steam to Heat the Lye.—F. R. Shafter who lives near San Jose has been drying prunes for 30 years. He says that with a wood fire to heat the lye water, you can't keep it poiling if you dip two boxes per minute. Also, if you quit dipping 1½ minutes to do something else, your kettle boils over. It is 20 years since he used the wood furnace under his kettles with wood fires, by letting has burnt out two or three prune dip kettles with wood fires, by letting them get dry while making lime-sulphur spray.

For about 20 years, according to Mr. Shafter, he has been using steam to heat the water. He averages 3 boxes per minute and 4 in a rush; but the water keeps boiling. Live steam may be turned into the water through a perforated pipe on the bottom of the kettle along its front side. Steam-tight pipe coils line the sides of the kettle, and the exhaust from the steam engine opens into the kettle. Not all of these sources of steam are used at once. The engine is used to run the graders.

How Much Lye.—Mr. Shafter watches the trays, and when he can't see checked skins, he adds more lye. This is better than any system of measurement, because lye strong

enough to cut one lot will take the skins off from another and this is sometimes true of prunes from the same orchard. Imperials are so tender that he uses sal soda instead of lye for them.

Rinses with Hot Spray.—Many people do not rinse the prunes at all after dipping. Many dump them into another basket in another kettle of cleaner water, as Mr. Shafter used to. But "when the rinse water gets dirty and is not changed, what good is the rinsing?" A half hour's dipping makes the lye water muddy with dirt and honey dew.

Four orchard spray nozzles now shoot clean water onto the dipped prunes as they come out of the hopper into which they are dumped from the lye water. The hopper lets them roll one-deep over needles and onto the grader. Steam is commonly turned into the pipe leading water to the spray nozzles, to heat it so the prunes will not be cooled off. This is important after the sun becomes warm, because the prunes are warm already and can commence drying at once without wasting time to warm up. It makes no difference in early morning.

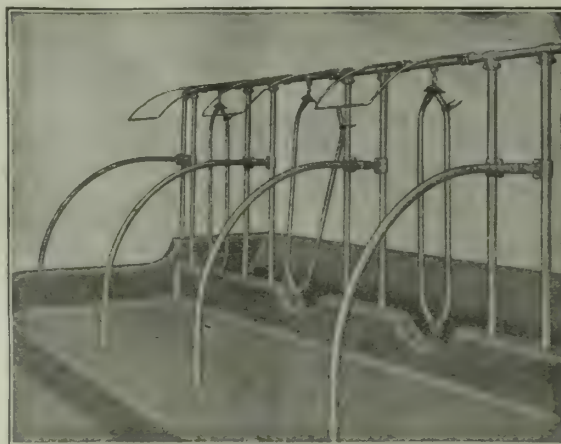
Grading and Drying.—From the spray and the needles, the prunes run over a shaking grader which sep-

arates them into three sizes so they will dry more evenly on each tray.

E. N. Richmond of San Jose recommends drying three-quarters in the sun, during which time they are turned over by shaking the trays or with a broom. This dries the fruit evenly all through, shortens the time on the trays, and makes a finer grade of fruit.

Stack the trays of ¾-dried fruit either in ricks or with ends alternately six inches beyond the one below, and with ends toward the prevailing wind so they can finish drying slowly, and the moisture which remains may be evenly distributed throughout each prune.

Grading for size before selling makes another story.



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A. C. G. S.



Costs of Three-Year Almond Orchard.

(Continued on page 97.)

have been carried out to extent that the two buildings in the home site, laid out along principles of American landscape gardening, are completed; the smaller serves as office, library, and laboratory where brain work is possible without interruption; the larger is a two-story structure designed to furnish sunshine, air, and sound sleep in upper part both summer and winter. In rainy weather one needs but descend to ground floor where is furnished a serviceable machine shop, power-driven with over-head shafting, and several belt-driven tools. Here is installed a Perry pneumatic water system delivering water to shower bath, sinks, and lawn faucets, from one of the best underground water-flows from the Buttes. A bored well, cased, opens into a 10-foot concreted pit of 5x8 feet floor dimensions. Ordinarily the pit is covered with 2-inch flooring, having a troughed concrete beltway provided, should it be desired to run the centrifugal pump as auxiliary to the Perry system. This latter system furnishes compressed air (separate from water) for portable tools, forge, inflating tires, or for cleaning tractor and implements. Hot water is stored in a 30-gallon boiler by an ingenious arrangement, effective whenever the power plant is running.

Incompleted plans call for direct current electric lighting system for buildings and grounds, the generator of same to be belted from the jack-shaft in machine shop. Further plans call for additional shed-room for harvesting equipment, and to serve as work building during rainy weather. This construction comes under future appropriation from crop returns and is to be erected on ground reserved apart from home site. It is planned to install a 40,000 gallon concrete reservoir half under ground, for immediate purposes of swimming pool, but arranged to be connected to a future concrete underground irrigation system. Drainage of reservoir, pits, grounds, and sewerage is obtained through a sizeable creek which heads in the Buttes and passes within a few rods of buildings.

YEARLY TREE COSTS.			
ITEM	1st yr.	2nd yr.	3rd yr.
Nursery cost	\$ 643.26	\$ 66.45	\$ 25.00
Hauling and heeling	21.14	12.08	...
Planting & preparing	187.24	27.18	15.10
Plowing	80.00	87.50	73.75
Tooth harrow	10.35	47.00	19.50
Disk harrow	27.50	40.00	51.50
Weeder	17.25	12.50	46.00
Hoe	37.00	42.75	10.90
Pruning	...	42.00	56.00
Watering	78.25	20.50	...
Spraying & treatment	12.00	15.00	42.28
Supervision	148.61	142.50	125.00
Total tree cost...	\$1262.60	\$ 555.46	\$ 465.03
Improvements	1254.00	300.00	788.00
Cost raw land	4000.00	...	...
Total Expense...	\$6516.60	\$7,372.06	\$8625.09

NOTES:—Cost per tree (dividing yearly total by 5020, but not including land or "improvements") equals \$.418 the first year, \$.183 the second year, and \$.154 the third year. Total cost per tree at end of third year equals \$.758, not including cost of land, implements, or improvements. Assuming tree cost 4th and 5th years at \$.25 per year brings tree cost to \$1.258 each at end of 5th year. This equals \$94.35 per acre. Original estimate, \$100 per acre to bring trees to bearing in 5 years. Initial land value \$100 per acre.

Briefly it may be interesting to add that a curve of average yearly returns was plotted from data collected, and from the many growers interviewed. Two orchards in particu-

lar are of interest, one small orchard of 1400 trees whose third year wood produced an average of 1.4 pounds per tree—over \$10 an acre, which was sufficient to cover operating expenses; another orchard of some few hundred old trees (believed to be 40 years) one of which produced 400 pounds, which were that year worth 20c per lb.

The Buttes Almond Orchard rests on the eve of proving itself a properly fostered "eugenic result." It will this coming season produce the fruit-wood for its four-year-old crop. Detailed operating costs for past three years warrant the following assumed future totals; cultivation, consisting of fall and summer (light cross) plowing, twice over with double disc harrow, four times over with tooth-harrow—\$4.25 per acre; spraying—power spraying once in every summer for red spider—\$2 per acre; pruning and burning brush in orchard on portable incinerator, \$5 per acre. Cultivation is done with Yuba "18" Ball Tread Tractor, which is credited \$20 daily in making up above costs, so that true cost of cultivation is 1/2 of figure given. In pruning, owners' time is charged at 50c an hour, so figure given is higher than common costs—also it covers 15 per cent more trees. I will discuss further any point or answer any question, which may arise in reader's mind.

DISPOSING OF MANURE.

To the Editor: I want to build a barn this fall for six horses and six cows. What is the cheapest and easiest way to dispose of the manure?—T. N., Walsh Station.

[The most economical way to remove manure from the barn is by litter carrier, run either on overhead tracks made especially for that purpose or on stout wire cables.

These tracks or cables run lengthwise of the barn, being hung from the rafters so the carrier will run back of the gutter. From the barn the track is extended into the corral, supported by heavy posts, high enough to allow the carrier to be dumped directly into the manure spreader or wagon when desired.

Of course the first cost of this carrier system will be greater than a wheel-barrow, which would answer the same purpose, but the carrier system is easier and more economical in the long run.—Editors.]

IRRIGATES ALFALFA TWICE.

To the Editor: A neighbor advises me that I am watering my alfalfa too much in flooding it twice a cutting—says it won't have the feeding quality for cows that hay would have with one watering. Our soil is a coarse sand 16 feet to water level. When flooded with six inches of water, will soak in within an hour. By watering twice per cutting we get more hay, and it grows much faster.—E. J. W., Ripon.

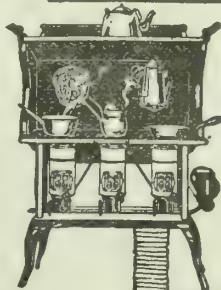
[Go ahead with your double irrigation. You will be riding an automobile before your neighbor if you have an equal start. Your alfalfa needs the water frequently, though not more than enough to soak down as far as the roots go. Its feeding value will be increased.]

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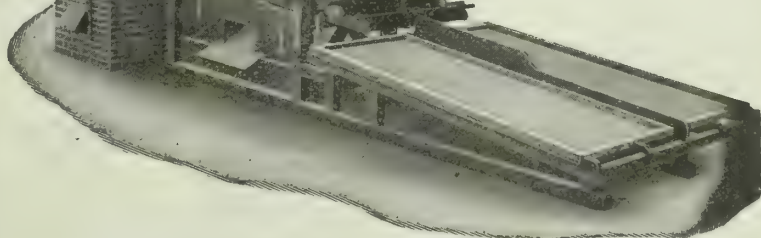


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CATTLE FOLLOW BIG HAR- VESTER.

[Written for Pacific Rural Press.]

Chas. Rieck of Tulare and Kern counties harvested 13,000 sacks of wheat in about two weeks and had 250 cattle feeding on the stubble before June 20 this year. A caterpillar pulled what Mr. Rieck thinks is the largest combined harvester in the world. It cuts 38 feet at a swath and threshes 100 acres a day. After his own grain is safe and the cattle are feeding, the machine works for neighbors enough to pay Mr. Rieck's cost of harvesting.

Lieut. Bryan, U.S.N. stated before the Am.Soc. of Naval Engineers: "Oils made from the asphalt-base crudes have shown themselves to be much better adapted to motor cylinders, as far as their carbon-forming proclivities are concerned, than are paraffine-base Pennsylvania oils."

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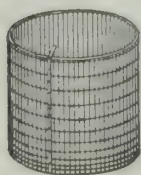
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The tractor is hitched to a string of wagons and hauls 650 sacks per day to the Orris warehouse.

The wheat was grown on summer fallowed land, yielding 9 sacks per acre of plump smut-free grain.

CHEAPER, BETTER PLOWING.

[Written for Pacific Rural Press.]

The good work of a C. L. Best tractor and the expenses of operation are reported by J. R. Huntoon, manager of the Dozier & Pressley Co. ranch near Windsor, Sonoma county. He plowed 166 acres in 15 days and cultivated 175 acres in 10 days. He figures:

25 days, drivers' wages @ \$2	\$ 50.00
Distillate, 540 gallons @ 8c	43.20
Oil and grease	25.00
One track roller replaced ...	3.85
Four grease cups .....	.80

Total, not including interest

or depreciation\$122.85

That is some cheap plowing and cultivation; Mr. Huntoon asks the question, "Does the tractor pay?" and answers, "I sure can do better work with it."

GAS ENGINE ELECTRICITY.

[Written for Pacific Rural Press.]

An eastern farmer writes of his 2 h.p. gas-engine-dynamo home electric light and power outfit. The outfit is in the washroom built against the house. The engine runs the washing machine and the 30 volt dynamo at the same time. The dynamo charges a battery of 27 cells in the cellar, each charge being enough to supply a lamp 60 hours.

He has 18 lamps in the house and cellar, and five at the barn. Wiring and fixtures cost \$125. The whole outfit including the engine cost \$425, and there was no trouble learning to operate it. He and his wife hope to use electric fans, flat iron, sewing machine motor, electric toaster, electric vacuum cleaner, etc., in due season; and there is no reason why the engine shouldn't do the pumping while it rests.

BALING ALFALFA FROM SHOCK.

To the Editor: Under what conditions can alfalfa be baled out of the shock? I have been told that it should be stacked and allowed to go through a sweat first.—Sub., Waukena.

[An article in our issue of Apr. 22, tells how Woodward and Sons of Perris bale hay with a power baler one afternoon, which was cut early the preceding afternoon. They sometimes store their hay two years and always sell at better than average prices. The unusual practice elsewhere is to let it sweat in stack, but we see no reason for not baling from the shock after the alfalfa is cured entirely through the stems.]

ONE PUMP FOR FIVE WELLS.

[Written for Pacific Rural Press.]

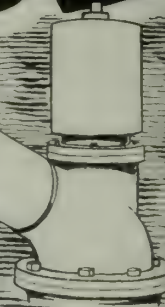
It quite frequently happens that farmers depending upon pumping plants for irrigation have more than one well to pump in order to supply all of their land with water.

Such is the case with A. Haley of Alameda county, who irrigates the alfalfa for his dairy from five different wells, using portable pipe for water distribution.

Instead of having money invested in five pumps, as would usually re-

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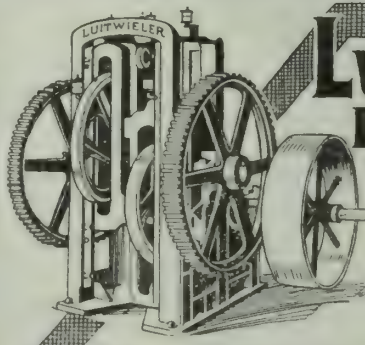
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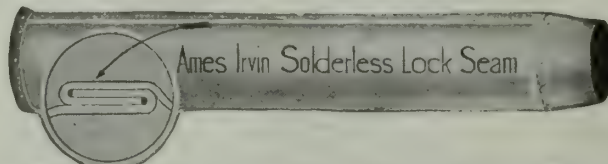
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sult under such a condition, Mr. Haley has but one six-inch centrifugal pump and an electric motor, which do all of the pumping at the widely separated wells.

This is made possible by having both the motor and pump in a wooden frame hung between two heavy steel girders, fastened to the front and back axles of a four-wheeled truck.

The frame hangs from the end of a cable that runs from a hand-operated drum at the rear of the truck up over a pulley which is supported by two perpendicular steel girders, thus giving the motor and pump very much the same appearance as an elevator as seen in buildings.

To operate the pump, the truck is hauled to a point directly over the well pit, which has to be about four feet wide and six feet long to accommodate both pump and motor. After setting, both pump and motor are lowered to the bottom of the pit with the steel cable, the former being connected to the well and a discharge pipe and the latter to the electric line.

As the water is high enough in some wells on the place so that no pit is required, provision has been made to run the pump while resting on the truck in such instances.

Thus it will be seen that the outfit is not only portable for moving from one well to another, but also accommodates all wells despite difference in depth of pit.

PUMPS LIQUID MANURE FROM PIT.

[Written for Pacific Rural Press.]

Disposal of manure on dairies is seldom satisfactory, although expensive equipment is often constructed for that purpose.

At the dairy of the Napa State Hospital both the liquid and solid manure are successfully handled by a concrete combination manure pit and liquid tank on a side hill.

The pit is 12 feet wide, 20 feet long, and four feet deep, the lower foot and a half being roofed over with two-by-twelve boards on which the solids are dumped direct from the barn by the manure carrier.

The side walls extend upward two and a half feet from this movable plank false floor, allowing ample space for the storage of considerable manure if necessary. As the false floor is loosely laid, drainage is provided through the cracks, the liquids falling into the lower portion of the structure.

All of the washings and other liquid matter from the stable and milk house also empty into the liquid manure tank proper.

This tank, which is on lower ground but next to the pit, is 18 feet wide, 20 feet long, and about six feet deep, also made of concrete and having a concrete top, solid except for an opening at one corner which is covered with a trap door. Near this door is an electric driven pump used in lifting the liquid into a tank wagon, which is used in sprinkling it over the farm land.

Due to its being diluted with an immense amount of water from the stable and milk house, this mixture has not proved too rich for the good of land, but is a benefit. Both tank and pit are emptied frequently in fair weather, but not so often in the winter.

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General Agricultural Review.

GRAINS AND FIELD CROPS.

Good grain yields are reported from Riverside county.

In June and up to July 20, 82 carloads of hay were shipped from Concord.

Tarweed has been getting pretty bad in some Glenn county wheat fields.

A Livermore valley wheat field is reported to have yielded 17½ sacks per acre.

Turlock melon shippers have arranged for inspection under the standardization law.

Utah capital recently bought the Corcoran Sugar Co.'s plant and an interest in Visalia Sugar Plant.

W. V. Shear of the State Horticultural Commission is inspector of certified potato seed under the law of 1915.

An Oakdale rancher harvested 12 sacks of wheat per acre, each weighing 125 to 130 pounds, from 180 acres.

Salinas Valley reports the brightest and best quality barley in years. Sales have been made at \$1.30 per cental.

Cool nights have delayed shipments from Le Grand melon fields. They expect to ship over 25,000 crates.

Average of all farm crops for all States of the Union are 101.6 per cent of normal according to U. S. Dept. Agr.

The Orland alfalfa meal mill operated by the Dixon Milling Co. has shipped 15 carloads but is storing much of its meal.

A stool of sudan grass containing 60 stems and standing 6 feet high was exhibited recently in Wilows. It was planted May 20.

The Dixon Milling Co. had ground 50,000 bags of alfalfa meal up to July 21. Growers are said to be getting \$15 per acre per cutting.

Turlock melons have been going East at about 40 cars per day, in spite of cool weather and patches drying up due to disease or drouth.

Knobby potatoes are nearly all due to fluctuating moisture supply and the resulting change from slow to rapid growth, says Wash. Expt. Sta.

Potato beetles are not common in Cal., but are in Utah and have recently been found in Washington. Spraying with paris green controls them.

Jas. Conniff of Patterson Pass, Alameda county, has a hay storage barn of 275 tons' capacity of loose hay. He expects to store when price is low and sell when high.

"Rim land" in Colusa county which floods in winter from the foothills, promises to make good rice. A 200-acre field near College City is estimated at over 40 sacks per acre.

To set cabbage plants late in July and early in August around Chowchilla is proposed by a dealer who offers to furnish plants, and a grader, crates, and a market for 10 per cent commission.

Sugar beets will be ready to dig in August around Burbank, according to D. W. Chamberlin. He drills seed in Mar., about 15 lbs. per acre about 4 inches deep, and thins to 8 or 10 inches apart. He irrigates two or three times and gets about 15 tons per acre. The price runs about \$6 per ton delivered at the sugar plant.

DECIDUOUS FRUITS.

Napa prune picking is commencing. Hanford and Armona are shipping Elbertas to the East.

Fresno county has 15 inspectors under the standardization law.

Carlots of Yuba City Tuscans are being sent to outside canneries.

The Bakersfield cannery is labeling its products "Packed in Bakersfield."

Prune and apricot growers met at Campbell July 25 in the interests of organization.

F. H. Wilson of Dinuba and Fresno is the new president of the Cal. Peach Growers.

It is estimated that 4000 tons of 1915 dried peaches are still in Cal. packers' hands.

The Mountain View Commercial Club formally endorsed the prune and apricot organization.

Duty on U. S. dried fruits to Brazil is 5½ cents per pound, fruit from other countries about 7 cents.

Brazil imported 1,660,000 lbs. dried fruit in 1914. U. S. furnished about 36,500 lbs. of this.

Jos. di Giorgio estimates that growers of Cal. deciduous fruit and melons will receive \$25,000,000 this year.

The largest cherry crop in the history of Santa Barbara county is reported by C. W. Beers, horticultural commissioner.

Prune and Apricot Day at Mt. View comes in early Oct. Premiums are offered again this year for the best fruit exhibited.

For years to come, the German dried fruit trade will be double what it has in the past, says a Baltimore man. He meant the more remote past.

A Placer county man proposes a 5-cent tax on every package of fruit condemned under the standardization law, and ½ cent for every one inspected.

The Sonoma Gravenstein season is said to be 20 days in advance of the average. The apples are extraordinarily high grade and free from blemishes.

A 10-acre pear orchard in Stanislaus county belonging to Mrs. E. O. McClure is reported to be yielding 100 tons which are being shipped to an Oakland cannery at \$60 per ton.

The Cal. Peach Growers' have leased packing plants in Sacramento, San Joaquin and Santa Clara valleys and their tributaries; and are building warehouses in Fresno county.

Santa Cruz and Monterey counties passed ordinances last Aug. prohibiting shipment of green fruit. The horticultural commissioners are preparing to enforce it. Juice sugar tests will be made on apples.

T. D. Buffington of Burbank has a peach tree over 28 years old and still yielding annual profits. The original trunk and limbs have rotted, but a new sap line has developed along the side and below each limb.

The plant of the Hemet-San Jacinto Growers' Association at Hemet is of the same size and capacity as the San Antonio Growers' Ass'n plant. Both are affiliated with the California Growers' Association, which has charge of the packing and sale of the fruit.

At the Medford meeting of the Pacific Coast Nurserymen's Ass'n., F. A. Higgins, Toppenish, was elected president; A. Brownell, Portland, Ore., Geo. C. Roeding, Fresno, Calif., and S. A. Miller, Milton, Ore., compose the executive committee; C. A. Tonneson, Tacoma, Wash., secretary-treasurer.

The big new cannery of the San Antonio Growers' Association at Ontario opened the run of peaches July 10 and is now working three hundred hands night and day. The Association controls nearly seventy-five Ontario, Chino, and Cucamonga districts; and despite the short crop is running fifty to one hundred tons of fruit a day, with ultimate capacity of 200 tons. The quality of the Tuscans crop is very high this year, offsetting the shortness of the crop, and there promises to be nearly a normal crop of Muirs and Lovells. Tomatoes will also be handled this fall and it is expected that the cannery will be in operation well into the early winter.

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"Armco" Iron Stock Watering Trough

Rust-Resisting Sanitary Watertight

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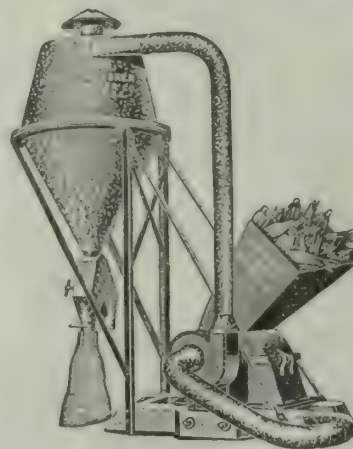
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Cut out the Middleman. Buy direct from
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GEO. N. TYLER,
Brookdale Nursery, Los Gatos, Cal.

The Prune and Apricot Information Bureau reports had falling of prunes in Sacramento and San Joaquin Valley, since their last report, but Santa Clara prospects improved. Northwestern crop prospects 35,000,000 pounds, higher than previous estimates, but a third already sold at less than California growers are holding for. Contracts for trans-Atlantic freight are 50 per cent lower than some time ago, though export conditions are complicated. The California prune crop is now estimated at 75 per cent of last year's crop which the Bureau estimates at 170,000,000 pounds. About 80 per cent are still in growers' hands. The apricot crop is estimated at 8,500 tons or 45 per cent of last year's output. Prices have ruled 12½ and 13½ cents, with some sales at 14 cents. Most of the apricots are still in growers' hands. The domestic demand for apricots reaches its height in Oct. or Nov.

CITRUS, FIGS, OLIVES, NUTS.

Redlands had shipped 3206 cars of oranges up to Jul. 15.

Anaheim oranges sold recently in New York at \$4.65 per box.

Riverside had shipped 2940 cars of oranges and lemons up to Jul. 15.

Florida citrus fruits are out of the market until another crop matures.

Sicilian lemon imports are light, since importers lost heavily last season.

A 60-acre fig orchard three years old, near Esparto, is fruiting this year.

The Santa Barbara Walnut Growers' Ass'n reports the crop 75 to 90 per cent the size of last year's.

A Colusa county almond grower refused \$10,000 for his 30 acres of seven-year trees. The land cost him \$60 an acre.

Fallbrook olive growers subscribed \$10,000 toward a pickling plant to be operated under the California Associated Olive Growers.

Navels to the number of 1,782,000,000 have been shipped from Cal. in one season. Only 800,000,000 lemons went out last year, and the highest Valencia figure is 891,000,000.

A rising Eastern thermometer indicates rising prices on lemons, fancy stock having sold at \$6.65 f. o. b. as reported. They are \$9 wholesale in the East, and all used as fast as shipped.

GRAPES AND SMALL FRUITS.

Packing of Dinuba Malagas began this week.

Fresno shipped its first carload of Thompsons Jul. 21.

The recent hot spell in Sutter county sunburned only those grapes whose vines lacked foliage enough. Sultanias are ripening.

The Sebastopol Berry Growers had shipped 97 cars of berries to the East July 15. Some went as far as Pittsburg, but Chicago seems the economical limit.

MISCELLANEOUS.

Imperial Valley is short of water due to silting near the intake.

Squirrel extermination is the object of a campaign at Chowchilla.

Mushrooms are being grown on 320 square feet by E. M. Hughes of Gilroy.

Paul I. Dougherty has been appointed farm adviser for Imperial county.

The Bakersfield tomato crop is estimated at 16 to 18 tons per acre, selling at \$6 to \$8 per ton to canneries.

The Wis. Col. Agr. is shipping 6 to 25 Italian queen bees per day in co-operation with the State Beekeepers' Ass'n.

The Carneros Farm Center farmers near Napa have voted to bond themselves for \$5,000 to build a new school house of concrete with tile roof.

The Madera Canal Co. complains that the 115 pumping plants are

lowering the ground water level and thus seeping water from their ditches without paying for it.

The Mt. George Farm Center of Napa county was lectured with lantern slides July 22 on keeping their health by preventing flies, mosquitoes, etc., and by using septic tanks.

Since the opening of the State Public Employment Bureau Feb. 10, 1916, the Sacramento office has found positions for 347 agricultural workers, and up to July 1 had filled 1728 positions in all.

The U. S. Secretary of Interior has opened over 100,000 acres of non-irrigable land to homesteaders, allowing them 320 acres each. Kern county

includes 49,000 of this, San Luis Obispo 43,000, Santa Barbara 12,000 and Los Angeles 10,000.

WEED CUTTER MAKES DEEP PLOWING UNNECESSARY.

To the Editor: About deep and shallow plowing, as mentioned in your issue July 8, I summer-fallowed 130 acres of land near Crow's Landing in the spring of 1915. I plowed it about 3½ inches deep and kept it well harrowed and cultivated with weed cutter. This harvest, it turned out 25 bags of barley per acre. This

was one of the best crops in this vicinity. I have farmed this land for 7 years and never plowed it over 4 inches deep. It has been farmed continuously since about 1870.

Patterson.

E. W. Crow.

Pears shipped in the top tier of boxes sell higher early in the season because they are picked greener then, according to R. D. Stephens of Sacramento; but late in the season, top tier boxes sell for less because they get overripe due to uneven refrigeration at different levels in the car.

An Announcement of Hudson Policy

35,000 More Hudson Super-Sixes

Detroit, Mich., July 1, 1916

We have today to announce—

That more than ten thousand Hudson Super-Sixes have now been delivered to owners.

That we have in four months, by tremendous exertion, quadrupled our daily output.

That we have parts and materials, on hand and in process, for 20,000 more of the present Super-Six. Constantly increasing demand has just forced us to place contracts on materials for an additional 15,000.

Thus it is settled that at least 35,000 more of the Hudson Super-Six will be built like the present model. Our production is now 3,500 monthly.

No Change in Sight

Our opinion is that a like announcement will be made in a year from now. The Super-Six invention in one bound, increased motor efficiency by 80 per cent. From a small light Six, which delivered 42 horsepower, it created a 76-horsepower motor. And simply by ending vibration.

Stock Super-Sixes, in a hundred tests, have out-rivaled all other stock-car performance. In speed, in hill-climbing, in quick acceleration and endurance, they have done what was never done before.

No man can doubt that the Super-Six holds the pinnacle place among motors. And there is no higher place in sight.

After eight months of experience, with 10,000 cars, not one important improvement in design suggests itself to our engineering corps.

So the Super-Six will remain as it is. And, because of our patents, it will maintain its supremacy.

Watch the 10,000

Watch the 10,000 Super-Sixes now running, and judge if you want a car like them.

Each owner feels himself master of the road. He knows that in every sort of performance his car has out-matched all rivals.

He knows that he has the smoothest-running motor ever built. The most powerful of its size.

He knows that in ordinary driving he never taxes half its capacity. That means long life and economy.

He knows that his motor has shown boundless endurance—such as never before was shown. And that he can look forward to many years of its perfect present service.

Watch some of those cars. Talk to the men who own them. Then ask yourself if there is any fine car equal to it.

Now 135 Per Day

Thousands of men in the past few months have been forced to take second choice. Most of them, we think, now regret it, and will always regret that they did not wait.

Those times are over. We are now sending out 135 Super-Sixes per day.

Go ask our local dealer.



Hudson Motor Car Company

Detroit, Michigan

Variety in Ration of High-Producing Herd

(Written for Pacific Rural Press.)

That variety of feed will play an important part in the successful winning of prizes in the coming California Dairy Cow Competition seems assured from the experience of dairy-men who have secured high herd averages in the Ferndale Cow Testing Association.

While the economical growing of some of the feeds used in the following instances is almost entirely limited to Humboldt county because of soil and climatic conditions, a large proportion of them can be grown in many other localities of the State and should therefore be more generally considered.

On the farm of John Hansen at Loleta, where is held the record for grade cows among the cow-testing associations of the State, the feeds used are about as follows: March 1 to August 1, clover and rye grass as hay, pasture, and soiling crops; vetch and oats as hay and soiling crops; and cocoanut meal. August 1 to March 1, silage made from barley and vetch or oats and vetch, clover and rye grass hay, cocoanut meal, carrots, and stock beets.

Mr. Hansen is a dairyman with years of experience. His chief advice, next to the use of purebred sires, is to "feed cows generously the year round with a variety of feeds."

Gilbert Trigg of Ferndale, who secured the first prize at the State Fair at Sacramento two years in succession for the highest producing herd of grades in a cow-testing association, has depended in the past largely upon rye grass and clover for hay, pasture, and soiling crops, filling in with stock beets and carrots in the fall. But during the past year he has added oats and vetch, fed as a soiling crop, as well as a two-pound ration per cow of cocoanut meal, oil cake meal, and bran. He finds that his cows not only continue their heavy flow longer in the lactation period since the concentrates have been added, but are also in better condition to enter their next lactation period.

O. T. Willsie of Beatrice, who had 14 cows in his herd of 40 that gave 60 pounds of fat or better during May, credits breeding with much of his success, but has also demonstrated the value of abundant feed of the right sort.

Besides rye grass and clover used as in the above cases, he purchases alfalfa hay and cocoanut meal, being one of the first in Humboldt county to purchase hay from other sections of the State. Besides these he grows peas, vetch, and barley, all of which are fed green.

Just how the lack of feed may affect the yearly production of a herd is shown by Mr. Willsie's yearly cow-testing reports, those of 1915 when feed crops were light showing an average for the herd of 370 pounds of fat, while those of the year before, when heavy crops were harvested, showed an average of 389 pounds of fat per cow.

R. F. Fischer of Carlotta, owner of a purebred Holstein herd, also finds a decided advantage in feeding a variety of feeds. His herd has produced much heavier than when previously fed almost an entire al-

falfa ration. He also feeds clover and rye grass hay, oats and vetch hay, corn silage, alfalfa hay, and dried beet pulp, not believing it profitable to pasture; and considering dried beet pulp fully as valuable as stock beets or carrots and no more expensive.

FEED HOGS WELL.

(Written for Pacific Rural Press.)

It is a mistake not to feed hogs well, especially when they are young, according to Dr. T. A. Guthrie, who owns a ranch five miles north of Winters, Yolo county, on which registered Durocs are the chief consideration.

He bases this belief on experience, and instead of underfeeding he allows his hogs plenty of grain and alfalfa in order that they may be better developed animals.

In housing also, he disagrees with the old adage that "anything is fit for a hog," having learned by costly experience the folly of turning hogs into a straw stack for shelter against the winter storms instead of providing suitable but inexpensive houses.

Grain stubble, feterita, alfalfa, and tankage constitute the main ration now in use and very satisfactory results have been secured with them.

SOFT BUTTER.

To the Editor: What causes butter to be soft, even in the early morning? It gets too loose when churning at 55 degrees. The cow has good pasture and gets no hay.—L. R. A., Kingsburg.

[Your trouble may be one of several. It is possible that cooling the cream directly after milking would help. It is also possible that the feeding of some hay instead of pasture alone would cure the trouble. Sometimes soft butter results from allowing it to stand too long after taking from the churn before working. When this occurs and the unworked butter is allowed to get hard, your trouble oftentimes results.—Editors.]

CLEAN PIG TROUGH.

(Written for Pacific Rural Press.)

A handy pig trough to keep the water clean and cool and the approach dry, is described by D. L. Schrader as being used on a ranch in the San Joaquin valley. It is made of corrugated iron, the top covered tight to keep out sun and dirt. Along the side are semi-cylindrical cups about 8 inches across and reaching from below the bottom of the tank to as high as the water level in the tank is permitted by the automatic shutoff. Near the bottom of the tank is a hole opening into each cup so the water in the cups is always at the same level as in the tank. The cups are drainable by pulling a cork in the bottom of each to clean out any dirt.

This rancher likes the idea so well that he is building a concrete tank 16 feet square at the corner of four fields. This is to have eight "cups" available for stock in each field.

Kings county creameries paid 26½ to 31.7 cents for butterfat last month, most of it being graded.

It has been fully demonstrated in California that a Silo

FILLED WITH SOUND SILAGE IS A POSITIVE INSURANCE AGAINST LOSSES FROM SHORTAGE OF GREEN FEED HOWEVER CAUSED, AND ALL SILAGE IS SOUND WHEN MADE IN

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With our herd will be a number of young Jersey bulls, ready for service, and out of our large high-producing cows, that will be for sale.

Also, young boars of splendid growth and type.

If you need a herd sire, be sure to see this lot at your nearest fair. We are taking them there for your inspection before buying.

If more convenient, visit our ranch or write for prices and pedigrees.

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A Mecham Rambouillet.

We are offering for this season a fine lot of yearling rams and ram lambs. Individual or carlots. Write or call and see the flock. Take electric car either at Petaluma or Santa Rosa for Live Oak station.

We have some choice Red Polled Bull Calves for sale.

American Merinos, Shropshires, Rambouillets

Our flocks are the result of 50 years of careful breeding and selection by the late F. A. Mecham. None but the best are sold or kept for breeding purposes. Sixteen rams selected from P. P. I. E. winners added to flock last fall.

Digester Tankage

Send for sensible folder on feeding hogs

Western Meat Company

Animal Food Dept.

704 Townsend St.,

San Francisco

California State Dairy Cow Competition.

[By F. W. Woll, Professor Animal Nutrition, University of California.]

The University of California is about to inaugurate a state competition for dairy cows, for prizes of \$4,700.

There are in California over one-half million milch cows, valued at about \$38,000,000—an amount of money which is but slightly larger than the total annual value of the dairy products of the State. The average yearly production per cow is not known with certainty, but is evidently below 150 pounds of butterfat. On the other hand, two cows in the State have produced more than 900 pounds of butterfat each in one year, and a considerable number more have each produced above 600 pounds during this period. There are also dairy herds that averaged over 400 pounds of butterfat per cow per year.

The average production of cows in the State is, therefore, not as much as one-sixth of that of exceptional cows, and is not much over one-third that of the average production of cows in a number of good dairy herds in the State. The high records mentioned were made by cows of exceptional capacity for feed consumption, whose ancestors were bred for high dairy production for many generations. They represent, therefore, the highest type yet reached by intelligent and consistent methods of breeding along dairy lines, and are not only the result of great skill in feeding and handling of cows.

Experience teaches us, however, that production by dairy cows can be very appreciably increased by a better system of feeding and management than is now practiced by most farmers. There is considerable evidence indicating that a large proportion of the cows in this and other states do not produce sufficient milk to much more than pay for their keep, and many are kept at an actual loss when the feed they eat is figured at ordinary market prices. It becomes important, therefore, to demonstrate to our farmers the possibility of improvement in the production by dairy cows and to stimulate their interest in modern methods of dairying.

As a step in this direction, the College of Agriculture of the University of California will conduct a Dairy Cow competition during the period November 1, 1916, to February 28, 1918, in connection with official testing of dairy cows for production of butterfat in which the college has been engaged for a number of years past. The competition has been rendered possible through the hearty co-operation of breeders of purebred dairy cattle, feed dealers, creamery companies, and others interested in the advancement of the dairy industry, who have subscribed a fund of over \$4,700 for the award of prizes for records of production made by cows in the competition. A large number of special prizes of purebred bull calves, dairy apparatus, and feeds have likewise been donated in order to make the competition of general interest to dairy farmers and to insure general participation. Circular 153 of the College of Agriculture gives full information concerning the competition. A copy of

it will be sent upon application to Dean Thomas F. Hunt, College of Agriculture, Berkeley, California.

[This was forecasted on the front page of our issue July 22 and further details will be presented in next issue.]

FEEDING DRIED BEET PULP.

Sugar beet factories of California have commenced operations. Last season the crop of dried beet pulp was entirely sold out,—in fact, for several months past there has not been a pound available. There will be a considerably larger supply this year on account of another large drying plant having been installed at one of the sugar factories that heretofore has not dried its pulp, but even with this extra supply there is some question as to whether the demand will not exceed the supply before the season is over.

Dried beet pulp is simply the natural root of the sugar beet, shredded clean and pure, with only the sugar and water extracted. Within an hour from the time the sugar beets enter the sugar factory the dried beet pulp is in the sacks, dried, and ready to be loaded on the cars. There is no possibility of its souring; and the drying process is so thorough that the pulp will keep like grain or any other mill feed.

In the western states dried beet pulp is fed principally with alfalfa, the combination making a balanced ration—but it is also used in combination with many other rations.

"Shall I feed it dry or wet?" is a question that is frequently asked. It is just as good one way as the other. Let the cows decide it for you. They'll soon tell you which way they like it best. When you first start to use it, try feeding it wet—if soaked beforehand the actual amount of water used is immaterial—and you will probably find that the cows like it better that way than they do dry. After they have become accustomed to it, you can gradually switch over to the dry feeding if you find it advisable.

"How much shall I feed?" For an average cow of about 1000 pounds weight, giving 25 to 30 pounds of milk daily, feed 8 to 10 pounds of pulp (weighed dry) and 18 to 20 pounds of good alfalfa hay for roughage, or as much hay as the cow will clean up thoroughly. Give the beet pulp first, dividing the amount into two feedings.

As dried beet pulp contains between 65 and 70 per cent of digestible carbohydrates, the ration recommended above would supply approximately 2½ pounds of digestible protein and about 14 pounds of digestible carbohydrates, which is the amount and proportion of digestible nutrients required for the average dairy cow.

If you cannot get alfalfa hay at a reasonable price, it would be necessary to feed cottonseed meal, tankage, or some other protein feed with the pulp. It might be wise to displace a pound or two of pulp with an equal amount of grain or mill feed, for the sake of variety. These are points that can best be settled by each feeder.



"DOG DAYS" the best time to buy a DE LAVAL SEPARATOR

THERE WAS NEVER BEFORE as good a time to buy a De Laval Cream Separator as right now.

THE "DOG DAYS" ARE AT hand when dairying is most difficult without a separator and when the increase in quantity and improvement in quality of cream and butter are greatest through the use of a good separator.

THEN THERE IS THE GREAT saving of time and labor, which counts for more in summer than at any other season and often alone saves the cost of the separator, aside from all its other advantages.

THIS IS LIKEWISE THE SEASON when De Laval superiority counts for most over other separators,—in closer skimming, larger capacity, easier running, easier handling, easier cleaning and absolute sanitarianism.

A DE LAVAL CREAM SEPARATOR bought now will easily save its cost before the end of the year, and it may be bought for cash or on such liberal terms as to actually pay for itself.

Look up the nearest De Laval Agent AT ONCE, or drop us a line and we will have him look you up.

De Laval Dairy Supply Co.

LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST. We specialize in Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Send for special Catalog.

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50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER.

GRANDSONS OF TILLY ALCARTRA



Prince Alcartra Korndyke,
Best bred son of Tilly Alcartra.

At prices within reach of every Breeder and Dairyman.

When you buy a son of our herd sire, Prince Alcartra Korndyke, you get more than a Holstein bull with registration papers—you get a grandson of the world's greatest milk cow out of a high-testing A. R. O. dam. Our herd of females has been developed into one of the best in the State.

Our supply of these young sires is always limited, but we have a few now which we are offering at very reasonable prices.

Write us at once, or call and see the herd.

J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

A Jersey Opportunity

Having disposed of my farm, will sell one-half of my herd of 30 Jersey cows and 20 heifers, 10 bull calves, and 2 bulls. Most of the cows are in the Register of Merit class and ten will make 500 pounds or better.

Here is an opportunity to buy richly bred Registered Jersey cows with good records, and daughters of high record cows.

If you want good stock at reasonable prices, come and see this stock.

Willowood Jersey Farm

C. G. McFarland, Prop.

Tulare, Cal.

HOPLAND STOCK FARM— REGISTERED SHORTHORN BULLS

REGISTERED BERKSHIRES (Boars, Bred Sows and Glts)
HERD BOAR, ROYAL POINTER 2nd, 19702, First Prize

Senior Yearling, P. P. I. E.

3 REGISTERED HOLSTEIN BULLS from High-Testing Cows.

SAN FRANCISCO OFFICE.

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FOR SALE

850 one and two-year-old

Shropshire Rams

By Imported Canadian Sires and Pure-bred Ewes.

For further particulars call or address:

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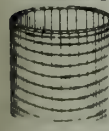
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On April 21st we arrived from Missouri with a carload of choice registered Bulls and Heifers.

INSPECTION INVITED.

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REDWOOD TANKS—SILOS.



Thirty-five years in this business in Stockton.—A 500-gallon tank, \$8.00. A tank 6 ft. x 2½ ft., \$7.50. Other tanks equally cheap. I deal direct with the consumer. You will save 10% to 25% by dealing with me. All sizes in stock. Clear dry redwood direct from the mill by vessel. Write for prices today. Latest improved machinery. Doors, Windows, Frames, Mouldings. Phone 2957. R. F. WILSON, STOCKTON, CAL.

HORSE OWNERS! USE



CAUSTIC BALSAM.

A safe, speedy and positive cure. The safest, most BLISTER ever used. Removes all bunions from HORSES. Impossible to produce scar or blemish. Send for descriptive circular.

THE LAWRENCE-WILLIAMS CO., Cleveland, O.

With the Livestock Men.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

DAIRYING AND DAIRYMEN.

An Orland dairyman was fined for not cooling his cream properly.

Twenty-two Minnesota co-operative creameries paid 31 to 40 cents for April butter fat.

A Live Oak dairyman was fined for selling cream containing flies, hair, bad smells, etc.

Frank Morris of Woodland has charge of the Cal. Holstein Breeders' sale at Hanford Oct. 18.

An Ohio Ayrshire has produced 548.44 lbs. fat from 15,794 lbs. milk as a three-year-old record.

Chas. Eldridge of Chumacum recently lost his young world's milk record cow Margie Juanita.

The Danish Creamery of Fresno paid 29 cents per lb. or \$42,141 for 147,774 pounds fat in June.

Gomez Cevola will establish a dairy on a newly acquired ranch in District 17 out of Stockton.

W. H. Saylor of San Francisco has bought the Greer ranch near Modesto and will put dairy stock on it.

The Exeter Creamery put out more butter last month than ever. They bought \$10,000 worth of butterfat.

The Palo Alto Stock Farms shipped the two-year-old Holstein bull Ragapple Imperial Korndyke 4th to South America early last week.

University Farm butter scored 93 in the July scoring contest at San Francisco. Sunset Creamery, Loleta, butter scored 94. Seventeen others scored 90 or above.

To produce three gallons of milk per day, a grazing cow must eat 100 to 125 pounds of grass, says Mo. Expt. Sta. They should graze during the coolest parts of the day.

The Ohio Expt. Sta. had a bull whose daughters averaged 153 pounds more butterfat annually than their dams. Here is a good basis for judging utility value of a bull.

A new California Guernsey record has recently been made at Edgemoor Farm, Santee, by the cow Mable of Linden Home who finished her yearly record June 15 with 16,945 pounds of milk containing 752.36 pounds of fat. This beats the former State record by 30 pounds. This cow was sired by Glenwood's Reputation and out of the cow Sterling's Fantine.

The old "Santa Clara" cheese factory started June 15 to use the overproduction of fresh milk of that district. Shipments of cheese have been going since July 15 and the 25 members of the United Milk Producers are furnishing 5000 gallons milk daily. The daily output is 1000 pounds Cal. cheese and 800 pounds "jack cheese," writes W. S. Sullivan of Agnew.

One of six cows that have made over 20 pounds butter in seven days as two-year-olds which will be sold by McAlister & Sons at their combination sale with Col. Ben Rhoades, Rivera, Sept. 19 and 20, is Iris De Kol Aaggie Lass which recently com-

pleted a record at the age of 2 yrs. 1 month of 24.12 lbs. butter from 452.5 lbs. milk in 7 days and 98.58 lbs. butter from 1868.3 lbs. milk in 30 days.

The Millbrae Dairy reports the completion of a number of seven-day records in their herd of registered Holsteins, among them being Angelina of Millbrae who as a senior four-year-old made 31.86 pounds of butter. This is the first daughter of a 30-pound cow in the State to make as good a record, her dam, Sleepy Barillos of Millbrae, having made 30.88 pounds of butter this spring also. A three-year-old half sister to the bull Tilly Alcartra's Son made 24.96 pounds of butter. Although testing in this herd was only started a year ago last May there are now 33 A. R. O. cows in the herd or just about half of the entire herd.

The Palo Alto Stock Farms have a carload of registered Guernseys en route from Wisconsin to add to their registered Guernsey herd at Palo Alto. They are also importing among other Holsteins an outstanding herd sire and a high record two-year-old cow from the New England States. There are now nearly 200 Holsteins and Guernseys on this place, 70 of which are milking. Inspected and certified milk is being sold from the ranch. W. Daniels is now assisting Mr. Tichenor, general manager of the ranch, the former having formerly been in charge of the Walter Dupee Guernsey herd in San Diego county.

SWINE BREEDERS AND STOCK.

Mr. Tubbs of Calistoga has a fine herd of 100 Yorkshires.

J. E. Buckholz of Chowchilla recently shipped seven carloads of hogs to San Francisco.

The State Agricultural Society is building 300 new floored pens for hogs at the State Fair. Water pipes run through the pens and other conveniences are added.

F. L. Foster of Chowchilla brought three young purebred Berkshire sows last week from the Iowa Agricultural College. Mr. Foster also has some Berkshires from Cal. University Farm and 17 purebred Durocs.

OTHER LIVESTOCK.

An exchange for worthy breeding animals at the Solano county fair is proposed.

Paul Gerber of San Antone Valley, Alameda county, shipped 75 beef cattle to San Francisco recently.

A. M. Crittenden is building a modern dairy barn near Mountain View.

Caterpillars are driving thousands of sheep out of the Butte county mountains by eating their brush feed.

The Oregon Livestock Ass'n recommended that the Agr. College compete at the State Fair, and they will do it.

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2 1/2c per word.

SWINE.

BILLIKEN HERD OF IMPROVED CHESTER WHITES.—The kind that makes the money. Pure-bred—registered—cholera immune. An extra fine lot of weaned pigs—both sexes—representing the best and most popular blood lines this breed produces. Five different sizes used. Can mate up not akin. Quality combined with size. Rapid growing—early maturing. A few nice fall gilts that will be bred and ready to ship in September. Write for prices and circular. C. R. Cunningham, Mills, Sacramento County, Calif.

YOUNG POLAND CHINAS, LARGE TYPE.—Boar IRA Wonder won first and Reserve Championship P. P. I. E., weighing 730 pounds under 2 years and in breeding condition. 60-day special—fine young sows 1-2 to IRA Wonder at very low prices; also weanlings, pigs, either sex. Satisfaction, or money refunded. W. A. Young, Lodi, Cal.

REGISTERED Duroc-Jerseys.—All ages. We have produced hogs weighing 240 lbs. at 7 months, at a cost of 3-10 cents per pound, including pasture, grain and upkeep of sow. If you want some of the kind it pays to raise, we would suggest that you order immediately, as our spring stock is going rapidly. Haden Smith, Woodland, Route No. 1, Box 84D.

REGISTERED Duroc-Jersey.—Weanlings, shoats, gilts, and boars. Unrelated. Many of our hogs are related to the several prize-winners at Panama Exposition. This herd is undoubtedly the finest in the State. Have had as many as 19 pigs to a litter. Grange Stock & Poultry Farm, Yountville, Napa Co., Cal.

HAMPSHIRE SWINE.—Both males and females from Grand Champion 700-lb. boar and Grand and Junior Champion sow. Also Guernsey bull calves from Grand Champion bull. BELLA VISTA HERD, J. W. Henderson, 1st National Bank Bldg., Berkeley, Cal.

REGISTERED BERKSHIRES.—World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapewild Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

NOW IS THE TIME to breed for Fall litters. I have a choice lot of young boars ready for immediate service. Also bred sows, bred gilts, weanlings of both sexes. Attractive prices will be quoted for quick sale. Geo. A. Smith, Corcoran, Cal.

DUROCS, from River Bend Farm, St. Helena, Cal., are large type, smooth, rangy, with fine backs and deep cherry color. We sell only those we'd like to keep in our herd. Don't write us if you want cheap stock.

BERKSHIRES.—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

FOR SALE.—Fancy belted Hampshire hogs. Well belted young sows and boars registered. Prices reasonable. Ben F. Thorpe, Manager, Canfield Estate Ranches, Bonsall, California.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feed for big hogs. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

LARGE, QUICK MATURING registered Berkshires—Both sexes, \$10 each for weanlings. Older ones at farmer's prices. J. H. Bomberger, Modesto, Cal.

REGISTERED PUREBRED BERKSHIRE PIGS.—Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

LARGE TYPE POLAND CHINAS.—Now booking orders for Spring pigs from our Nebraska prize-winning sows. H. I. Marsh, Route A, 348, Modesto.

LITTLE BLACK ESSEX.—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

IMPERIAL STOCK FARM BERKSHIRES.—Registered stock of all ages. Prices and description on application. R. J. Merrill & Son, Morgan Hill.

LAKEVIEW STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

REGISTERED BERKSHIRES.—For sale, bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

POLAND CHINAS.—Young stock; either sex. Write for pedigree. Reasonable prices. Edw. A. Hall, Watsonville, Cal.

POLAND CHINAS.—250 lbs. in six months our aim. Imported sows. None better. Linn & Porter, Route A, Modesto, Cal.

BIG-TYPE POLAND CHINAS.—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

REGISTERED IMPROVED CHESTER WHITES.—Grize Bear Ranch, East Auburn, Cal.

REGISTERED POLAND CHINA SWINE.—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

REGISTERED DUROCS.—Herd headed by Crimson March 2nd. Write for prices. J. M. De Vilbiss, Patterson, Cal.

REGISTERED POLAND CHINAS and Duroc Jerseys.—Cholera immune for life. T. H. Beckman, Lodi, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boudier & Son, Napa.

30 REGISTERED BERKSHIRES.—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

REGISTERED BERKSHIRES.—Weanling pigs, \$10 each. G. A. Casey, R. 7, San Jose.

REGISTERED BERKSHIRE BOARS.—Gilts and weanlings. Choice stock. W. M. Mikesell, Manteca.

POLAND CHINA HOGS FOR SALE.—Registration papers furnished free. C. A. Cooley, Durham, Cal.

REGISTERED DUROCS.—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

REGISTERED Duroc-Jersey SWINE.—Both sexes. Big-boned type. B. F. Kendall, Hanford.

POLAND CHINAS.—Large Type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED POLAND CHINAS.—Young stock for sale. J. H. Cook, Paradise, Cal.

REGISTERED BERKSHIRES.—Young stock for sale. F. W. White, Elk Grove, Cal.

HOPLAND STOCK FARM.—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRE PIGS.—Write or call Greenwood Ranch, Brentwood, Cal.

KNOB HILL STOCK FARM.—Registered Poland-China Swine. A. M. Henry, Farmington.

HAMPSHIRE.—Registered stock for pride and profit. Frank Brown, Burbank.

REDAOKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED POLAND CHINAS and Duroc-Jerseys. H. F. Harrold, Orland.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROCS.—All ages. Either sex. W. A. Pack, Hollister, Cal.

REGISTERED DUROCS from best Eastern blood lines. S. S. Southworth, Napa.

POLAND CHINA HOGS.—Registered. Cholera immune. R. J. Miller, Llewellyn Ranch, Lathrop.

POLAND CHINAS.—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

CHAS. GOODMAN.—Breeder of high-class Berkshire Swine. Williams, Cal.

REGISTERED O. I. C.—Very reasonable. Geo. Magnuson, Calpella, Cal.

REGISTERED POLAND-CHINA HOGS.—J. A. Clark, R. 4, Lodi, Cal.

REGISTERED DUROCS.—Weanlings only. F. M. Johnson, Napa, Cal.

REGISTERED O. I. C. SWINE.—C. D. CONWAY, Ripon, Cal.

REGISTERED DUROCS.—H. N. Leininger, R. D. 4, Chico, Cal.

REGISTERED POLAND-CHINA HOGS.—J. W. Wakefield, Acampo.

REGISTERED Duroc-Jersey SWINE.—D. L. Henley, Lemoore, Cal.

POLAND-CHINA HOGS.—C. A. Stowe, Stockton, Cal.

BERKSHIRES.—Carruthers Farms, Mayfield, Cal.

SHEEP AND GOATS.

THE BULLARD FLOCK RAMBOUILLETS.—Founded 1870. Largest Merinos on Pacific Coast. The Bullard Company, Woodland, Cal.

FOR SALE.—Shropshire bucks, yearlings and lambs. Individuals to carlots. Purebred but not registered. J. R. Bloom, Dixon.

FOR SALE.—Choice Shropshire Buck Lambs. E. A. Holdridge, P. O. Box 282, Dixon, Cal.

KAUPKE BROS., WOODLAND, CAL.—Brooders and Importers of Hampshire sheep.

BREEDER OF MERINO SHEEP.—Rams for sale. J. Bidegaray, Fresno, Cal.

BISHOP BROS., SAN RAMON, CAL.—Brooders and Importers of Shropshires.

CHAS. KIMBLE.—Breeder and Importer of Rambouillet, Hanford, Cal.

BEEF CATTLE.

FAIR OAKS RANCH, WILLITS, CAL.—Young registered Shorthorn bulls for sale. Sired by Landseer 379318 grandson of Imported Villager 295884.

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

HOPLAND STOCK FARM.—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS.—H. H. Gable, Diamond G Ranch, Esparto, Cal.

SIMON NEWMAN CO., Brooders of Registered Herefords, Newman, Cal.

GEORGE WATTERSON.—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS.—Carruthers Farms, Mayfield, Cal.

DAIRY CATTLE.

REGISTERED HOLSTEINS.—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

VENADERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly record. Guy H. Miller, Route 1, Modesto, Cal.

Established 1852

Incorporated 1905

THE J. S. GIBSON COMPANY

BREEDERS OF

Holstein-Friesian Cattle and Berkshire Hogs

The Pacific Rural Press,

Williams, California, July 24th, 1916.

Gentlemen:-- In looking over my sales list I find that over 90% have come through the Pacific Rural Press. I advertised with the ~~the Pacific Rural Press~~ for over a year and made one sale. The past six or eight months I have been advertising with a couple of other farm papers but with out results. The Press seems to be the paper for the results.

Yours very truly,

James Gibson

Vice-Pres.

REGISTERED HOLSTEIN BULL CALVES—Sired by Lorena Komdyke Alcartra, whose dam made 29.75 pounds butter fat in seven days as a four-year-old. J. M. Campbell, Escalon, Cal.

REGISTERED HOLSTEINS—Sired by King Komdyke Hengeveld Ormsby 53822. From world record cows Pontiac Maid Ormsby and Duchess Skylark Ormsby. Geo. Kunlos, Modesto, Cal.

REGISTERED HOLSTEINS—Colantha Johanna Lad and Aralia De Kol breeding. Young stock for sale from A. R. O. cows. Lester A. Driver, Nicolaus, Cal.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3 lbs. cows. None better. Cheap for quality. N. H. Locke Co., Lockeford, Cal.

HOLSTEIN BULLS—Well marked, large, straight individuals. Tuberculin tested. \$100 up. Packwood Farm Herd. W. F. Mitchell, Visalia.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain Chascoe young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

DAIRY CATTLE.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs. butter as two-year-olds. A. A. Jenkins, Tulare.

REGISTERED HOLSTEINS—32 high-grade Holstein heifers coming fresh this Fall for sale. E. E. Freeman, Route B, Modesto, Cal.

BULL CALVES from a grandson of Colantha Johanna Lad and from a son of King of the Pontiacs. J. W. Benoit, Route C, Modesto, Cal.

HOLSTEIN BULLS out of A. R. O. cows, sired by a son of King of the Pontiacs. Prices reasonable. J. H. Harlan Co., Woodland, Cal.

THE McCLLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

TWENTY-EIGHT high grade yearling and two-year-old Holstein heifers for sale; some bred. K. W. Abbott, Milpitas, Cal.

REGISTERED JERSEYS—Herd established 1869. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

WILLOWMOOR AYRSHIRES—Great records; economy. 300 head in herd. J. W. Clise, Redmond, Washington.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit. Cows for sale. C. G. McFarland, R. 2, Tulare.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS, Corp., Importers and Breeders, Woodland, Cal.

FOR SALE—Pure bred Guernsey bull, advanced registry breeding. E. L. Skidmore, Tulare, Cal.

THOROUGHbred DUROC-JERSEYS to farrow in August. Dr. T. A. Guthrie, Woodland, Cal.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

COWS—30 head. Good Grade Jersey Milk Cows at \$60 each. E. H. Webb, Escondido, Cal.

REGISTERED JERSEY BULLS from Register of Merit. D. F. Conant, R. "B", Modesto.

AYRSHIRES—Registered; all ages. E. B. McFarland, 112 Claus Spreckels Bldg., San Francisco.

BREEDERS OF A. R. O. Holstein-Friesian cattle exclusively. Dirk Dairy Farm, Lemoore.

REGISTERED JERSEYS—Young bulls and bull calves. F. B. Purvine, Petaluma, Cal.

YOUNG REGISTERED JERSEY BULL CALVES at reasonable prices. O. J. Ames, Oakdale.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAllister & Sons, Chino, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. E. F. Maurin, R. 3, Box 58, Visalia, Cal.

LINWOOD FARM—Registered Holsteins and Imported Guernseys. Santa Cruz, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN. BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. F. Anderson, Modesto, Cal.

REGISTERED AYRSHIRES—All ages for sale. W. J. Jones, McCoy, Oregon.

REGISTERED HOLSTEINS—Golden West Herd, D. & I. Rowles, Modesto, Cal.

FRESH JERSEY MILK COWS for sale. E. M. Locke, Lockeford, Cal.

HOLSTEIN COWS for sale with records. Dr. Stetson, Lapa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Calif.

HORSES AND MULES.

REGISTERED SHIRES—Black Hawk Stock Farm Importers and Breeders. Easton & Ward, Proprietors, Eureka, Cal.

MISCELLANEOUS.

CROLEY'S CALF FEED with skim milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc. 631-37 Brannan St., San Francisco.

D. O. LIVELY, 216, Hobart Building, San Francisco, buys and sells live stock—any kind—any quantity.

DUROCS AND GUERNSEY BULL CALVES—Gilts bred to 800-lb boar. Ed. E. Johnson, Turlock, Cal.

DOGS.

AN OPPORTUNITY to purchase thoroughbred Collies. Having a greater number of thoroughbred Scotch Collies than I can accommodate, am willing to sell a few the year and older at a great sacrifice. The dogs are all bred by the noted prize-winners of the BROWN-VALE KENNELS, Redwood City.

Beef types of cattle were shown on lantern slides by Prof. J. I. Thompson at the Rio Vista Farm Bureau meeting recently.

S. M. Sydenstriker of Corning recently purchased 740 acres near the Sutter county Buttes and expects to stock it with sheep and cattle.

Eighteen Los Angeles county dairymen were guests of Ed Webster to inspect the El Centro creamery and dairy country not long ago.

Entries for the Sonoma and Marin Agricultural District Fair Aug. 7 to 13 close Aug. 1 except for perishable agricultural, horticultural, and home products.

BERKSHIRE QUALITY SALE.

A visit to Carruthers Farms before their first annual sale day is like visiting a high-class Berkshire show, except the ribbon display after the judging.

Well-bred hogs finished as only an experienced feeder can hope to accomplish, was the sight presented to us in a visit to this breeding establishment during the past week, and, as Ed Brown, the herdsman, remarked, "A man that can't suit his Berkshire fancies here can't be suited anywhere."

The most striking feature about the hogs to be sold in this sale, to the writer's mind, is the number of high-class sows that are catalogued. Altogether 20 under-a-year sows will go through the ring. While space will not permit us to elaborate on individuals, there are eight daughters and granddaughters of Rival's Champion Best in the lot, almost a year old, that are as fine a lot of foundation sows as we have ever seen offered in a bunch at public sale.

All of the sows of breeding age are bred to the several outstanding herd of boars, among which are Ames Rival 121st, a boar of immense depth and breadth sired by Rival Champion Best and out of Belle Rival 17th. As an aged boar, this fellow is one of the best in the West today and much better than when shown at the P. P. I. E. last year. Sows in pig to him would appear to be very desirable.

Another boar which many of the sows are bred to, and which is himself, being offered in the sale, is Royal Rival 6th, a junior yearling and a winner at the P. P. I. E., that weighs between 550 and 575 pounds. He is one of the best show prospects among the older boars offered.

In younger boars a wide selection in breeding and individuality has been made possible by cataloguing animals of various ages and breeding. Several of them have been selected purposely as herd sires for three sow groups, in the belief that these young breeders' herds will be in demand on sale day. Others have been chosen as being good enough to meet the requirements of the most fastidious breeder in search of a herd sire, while still others of the same breeding, but not outstanding show animals, have been catalogued for those wishing good useful boars of unusual breeding.

Every preparation, we found, is being taken to properly care for visitors on sale day, and as the ranch is easily reached by electric and steam roads as well as directly adjoining the State Highway, there is very reason to believe that a large crowd of swine breeders from all parts of the West will face Colonel Hord when the first bid is called for on August 2.



Silage Increases the Milk Flow 25 per cent and Reduces Feeding Costs 15-20 per cent

IT IS NOT A QUESTION of whether you can afford a silo. It is a question of how long you can afford to be satisfied with the lowest milk yield from your cows, and the highest cost for feed.

SILAGE IS BY FAR the least expensive feed you can use and at the same time the greatest milk-producing feed. Decide now to have a silo.

IDEAL GREEN FEEDS SILOS

are increasing the profits of thousands of Pacific Coast dairymen. Men who use these silos are getting big returns because their cows are giving a large flow of milk.

THERE IS NO QUESTION about the value of silage—GOOD silage. The only men who doubt the value of silage are those who have not investigated or who have bought "cheap" makeshift silos that produce a poor quality of silage.

IT DOES NOT PAY to try to save a few dollars on the first cost of a silo. The losses due to spoiled silage is likely to amount to many times what you hope to save on the first cost.

REMEMBER that you will get from 20 to 30 years' service from an Ideal and that it is a strong, tight silo that will protect your silage perfectly. In the better quality of silage you get, the Ideal saves each year more than the difference between its cost and that of an inferior silo.

DO YOU WANT PROOF of the extra value of the Ideal? Do you want to know just why it will give the best silage and last the longest? Then write us and ask us these questions and particularly tell us what kind of feed you can raise to put into the silo and how many cows you will want to feed silage.

ACME FEED CUTTERS

ALPHA ENGINES

De Laval Dairy Supply Co.

SAN FRANCISCO

EVERYTHING FOR THE DAIRY.

SEATTLE.

Duroc Jersey Pigs

Forty head of A No. 1 pigs, both sexes, January, February and March farrow, priced to sell, and to seal right now. All registered, well bred, well developed and guaranteed satisfactory, or money refunded. Conditions are such that we must materially reduce our herd. This is your opportunity. Details for a postal.

DIRK DAIRY FARM

Lemoore,

California.

Rambouillets

1300 YEARLING RAMS AND 1000 EWES.

These sheep are purebred, large and smooth, with heavy fleece of fine, long, staple, white wool. Individuals or carload lots.

Prices reasonable.

Correspondence solicited.

CHAS. A. KIMBLE, HANFORD, CAL. Breeder and Importer.

Tamworths and Duroc-Jerseys

We can fill orders for mature stock and weanling pigs of both sexes. This is the largest herd of TAMWORTHS in the State. Our Stock is sure to please. Write or call and see us.

SWINELAND FARM,

W. O. PEARSON, Prop. Woodland, California

MODEL HERD OF BERKSHIRES

Bred for size, bone and quality. Pigs for sale, sired by Big Royalist 150837 and Breed's Model 165859, both winners of blue ribbons at State Fair. Descriptive catalog upon request.

I. L. GISH, Laws, Inyo County, Calif.

San Francisco Cattle Loan Company

W. H. COFFINBERRY, President and Manager. South San Francisco, San Mateo County, California. We loan on Cattle and Sheep in California and Nevada. Write for information.

J. Grasse is to help organize another unit of the Glenn County Cow Testing Ass'n.

Tagus Ranch

BREEDERS OF PUREBRED

Holstein Cattle
Polled Angus Cattle
Duroc Jersey Hogs

Tagus Switch, Tulare Co., Cal.

BERKSHIRE BARGAIN

Closing out almost at pork prices. Sired by Grand Leader 2nd Fashion Longfellow, Kennett, etc., and out of such sows as Lady Mayhews, Champion Longfellow Belle, Star Princess, dam of Star Leader, Jr., Champion P. P. I. E., etc. Some bred to Fashion Longfellow 5th, Baron De Lux, and Rival Emblem; others open.

Here is a chance to get a bargain.

CALLA GROVE FARM

Manteca, Cal.

San Diego Hillside Milk Barn.

From cows to truck, the milk is all and always conveyed by gravity.

[Written for Pacific Rural Press by Chas. F. Barnum.]

Cheap, convenient, and economical dairy equipment is to be seen on the E. H. Webb Dairy at San Pasqual valley 35 miles east of San Diego. Milk from the night before reaches its destination by motor truck at San Diego in time to go all bottled on the milk delivery wagons at 11:30 a. m.; and is said by the Manager of the P. M. Dairy Association to be in the best condition of any received.

The superior quality of milk, according to Mr. Webb, is mostly due to the method and convenience in which his hillside dairy structure permits the handling.

On the top of a hill are two paved corrals used for receiving two strings of cows 24 in each corral. Each cow seems to know its own corral and goes to it every night and morning before milking time. Both corrals open into a paved curbed lane which leads down a slope into the milk shed a few feet below. Twelve cows are let in on one side while the twelve just let in before them are being milked in the 12 stanchions on the other side of the milk shed by a Hinman milking machine. The corral system permits each cow to be milked within 15 minutes of the same time each morning and night.

A high reservoir 15 feet above the barn on another hill provides sufficient pressure to slush out the corrals and barn.

All manure and residue is caught at one point and drained into a 12-inch pipe 100 feet long, lying lengthwise and below the barn. Connected with this pipe on one end is a 4-inch pipe which runs out to irrigate the alfalfa. On the other end is a reservoir pipe connection, also a trap for closing off the drain from barn.

The drain or trap closed enables the water pressure from the reservoir to enter from behind and force the manure onto the alfalfa at any level below reservoir.

Milk from the cows is poured into a chute which takes it down another story into a large milk cooler; then again down through 4 ply of metal gauze strainers into the delivery cans.

Mr. Webb thinks the metal strainers far superior to the cloth or gauze on account of being easier sterilized.

The milk, now in the cans, is rolled down another notch into the motor truck which backs up to a platform at bottom of the hill.

SHEEP ON A DAIRY.

[Written for Pacific Rural Press.]

Sheep and dairy cows are not generally considered an ideal combination, but W. E. Elliot finds them both profitable on his ranch in Humboldt county.

This is largely due to the location of his ranch, only a part of it lying low, and the balance being hill land badly depleted of fertility by continual cropping.

On the lower land, vetch, clover, rye grass, and root crops are grown for the herd of about 25 cows which has been maintained for the past 20 years. All of these are of Jersey breeding, a portion of them being

purebred. During the past seven years, the herd has been entered in the Ferndale Cow Testing Association. By systematic selection and breeding the herd average has been increased from 275 to 350 pounds in that time.

Sheep are comparatively new on the ranch, having been founded three years ago to build up the hill soils.

The original ewe band was composed of purebred Shropshires; and Shropshire rams have been in service since then. By selecting the best ewe lambs the flock has been enlarged to 75 ewes; and this will be further increased in the same manner to 200.

Like all of the northern coast section, Humboldt county sheep produce a good clean fleece; and while lambs are the chief consideration on the Elliot ranch, the ewes have sheared as high as 12 pounds and have averaged eight pounds of wool this season which sells for well over 30 cents a pound.

Lambing has been done in December and March in the open, the older ewes lambing at the earlier date. The mild weather permits lambing at any time of the year, but sheds would doubtless mean a saving of lambs on account of the winter rains. Coming in the spring, however, when there is abundant green feed, the lambs make rapid growth, four-month lambs having averaged 76 pounds this year and sold for \$7.25 a hundred pounds.

That both the quality and quantity of the hill feed may be improved, orchard grass, rye grass, and some clover will be sown. It is expected that these and the manure of the sheep will greatly improve future yields on the land.

CHEAP GOOD PLASTER SILO.

[Written for Pacific Rural Press by Chas. F. Barnum.]

On the S. A. Martin dairy at Burbank, Los Angeles county, is to be seen a very novel yet practical and cheaply built silo. First a cement foundation was laid circular and 10 feet in diameter. On this was then bolted by anchor bolts, a wooden form to which were attached the uprights which form the silo walls. These were 2x3 inches 20 feet long and placed 1 foot apart. They were bridged together like floor joists generally are by crisscross pieces.

On the inside and outside of this framing was nailed metal lathing from bottom to top covering the entire frame. Then five tank hoops were placed on outside. The first coat put over the lath was 5 parts lime plaster with lots of fiber, and 1 part pure cement. The second coat was 5 of pure cement and 1 of plaster with the fibre left out. The third and last coat was half and half sand and plaster.

This same plastering was used on the outside as well as the inside. The five door spaces left were framings 2x2 feet. Mr. Martin tried out this experimental silo last year and claims it is a wonder. "No part of my corn silage was wasted, and next year I will add another of this same kind of silo," said Mr. Martin.

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A 34 POUND BULL IS NOW OFFERED FOR SALE

The name of this youngster is DUKE CORNUCOPIA SARCASTIC 157545. Born February 14, 1915.

His dam: ALBA SADIE CORNUCOPIA 138651. As a 4-year-old she made 28.85 pounds of butter in 7 days, and just recently as a 5-year-old she increased her record to 34.13 pounds butter under official test. This is the largest butter record ever made by a cow in 7 days in California. She is a splendid individual, and a persistent producer. She is sired by SIR SADIE CORNUCOPIA, 34 A.R.O. daughters, 3 above 30 pounds butter in 7 days. He by Aaggie Cornucopia Johanna Lad, 97 A.R.O. daughters, 3 above 30 pounds, and out of AAGGIE CORNUCOPIA PAULINE 34.32 lbs. butter in 7 days, 128.98 lbs. in 30 days. This cow held the world's record for 8 years, and she is the dam of SADIE VALE CONCORDIA 4th, who has over 40 pounds of butter in 7 days to her credit.

His Sire: WOODCROFT DE KOL SARCASTIC LAD, already has 2 A.R.O. daughters, one a 20.03 pound 4-year-old. He is by AAGGIE CORNUCOPIA 3d LILITH, 21 A.R.O. daughters. His dam is a splendidly bred cow, sired by a son of DE KOL 2ND'S BUTTER BOY 3D. We guarantee this bull to be a breeder.

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[Answered by Dr. H. B. Wintringham, Petaluma, Cal.]

[Subscribers wishing an immediate reply should send money order for \$1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

PIGS DEFORMED.

To the Editor: What causes a litter of pigs to be deformed in their hind legs when they are not interbred?—M. T., Moraga.

[Causes for this trouble are too many for the specific one to be ascribed without additional data.]

HOGS HAVE COUGH AND RASH.

To the Editor: Hogs get mopy, have a wheezing, hacking cough, skin thickens, gets hot and a rash breaks out, nose runs, constipated. Hundreds of hogs have died with it.—K. L., Badger.

[This is hog cholera. Have the apparently well animals vaccinated immediately, as it is the only way to stop such an outbreak.]

TUMOR FROM INJURY.

To the Editor: My driving mare was injured on the breast by the blanket falling off, and the cord it was tied with cutting in front of her breast and pressing on one of the cords of her neck. It has formed a tumor. I have put iodine on it and blistered it, but it remains big as an egg.—L. G. J., Arroyo Grande.

[Have this lanced, as there is an exudate which must be evacuated.]

COW EATS DIRT.

To the Editor: A cow's calf had died before birth and completely decomposed. It was removed and the cow came back to her milk and ate well, but ate dirt whenever she got the chance. Bowels were loose—passage looks like thin mud. Has access to salt at all times and is fed alfalfa hay and dry pasture. Has been a heavy milker 5½ years.—H. B. J., Lakeport.

[Give this cow one dram powdered and dried iron sulphate once a day.]

CALVES BREATHE HEAVILY.

To the Editor: We are losing calves which cough and breathe heavily. Some stockmen say it is contagious pneumonia. Does the State send out a cure for it?—T. O. G., Lancaster.

[This is infectious pneumonia. I believe that if a vaccine were made from the lesions found in the lungs and used on the calves it would work a material benefit. Express an infected lung, fresh, to The Cutter Laboratory, Berkeley, and ask their opinion as to the organism causing the trouble; and ask them to make up a vaccine to use on the calves. Medicinal treatment has up to date yielded no results.]

SWELLING UNDER JAW.

To the Editor: Last winter a swelling came under and between a cow's jawbone and forward to her nose. I put on a mustard plaster; and when I found a soft place, knifed it letting out pus. Then syringed it every day with peroxide and sheep dip until it healed. Two weeks ago it swelled again, principally on one side. I blistered with liniment; now it is soft and flabby at the lower end but hard back near the throat. It doesn't bother her eating.—C. B., Yuba City.

[There was a pus pocket left in the old abscess which did not have drainage which has caused this secondary abscess. Have this lanced.]

COW HOLDS MILK.

To the Editor: Our cow sometimes will not let down her milk, even after she has been letting it run. Sometimes the milk is lumpy like cheese and slimy and in long

strings. She acts like a balky horse. S. P., Parlier.

[This is a habit which is in most cases impossible to break up. It would be advisable to sell this animal unless you have lots of patience and ingenuity.]

SWELLING ON JAW.

To the Editor: Three days ago a swelling the size of a lemon came on my cow's jaw. The same thing happened last year and the veterinarian gave me an ointment containing Spanish fly for a blister. As there is no veterinarian around, I used the same this year; but next day the swelling was large as half a melon. On the third day, the swelling is somewhat reduced but her nose and eyes run water. For the past two weeks the cows have been in a pasture of fine clean red oats nearly ripe.—Sub., Calistoga.

[This is an abscess and needs lancing.]

HORSES OVERHEATING.

To prevent horses from overheating is much easier than to cure them.

Give at least a pailful of water to each horse about 10 o'clock and again at 3 or 4 o'clock on a hot day.

Be very careful with a horse that is a little out of health, if you are working him on a hot day.

Look out for a horse that after sweating freely suddenly stops sweating. Put him in the shade as soon as possible and give a moderate drink.

Do not put a horse not in good condition for hard work in the center of a four-horse team in hot weather.

Work carefully on a hot day when the atmosphere is moist and heavy.

A horse can hardly get too hot to water, but one must regulate the amount by the temperature of the water.

In case of an attack of overheating, the horse should be taken to the shade and diluted stimulants given as soon as possible. A treatment of the surface of the body, particularly of the head, with cold water should be given until the temperature is within a degree or two of normal.

It is better to plan to avoid overheating than to plan to treat the

horse for it.—University Farm, St. Paul, Minn.

SENSIBLE SILO FILLING.

[Written for Pacific Rural Press.]

They put silage into silos more intelligently in Wisconsin than in California, according to Otto Baldenweg of San Bernardino county, who came to Cal. from Wis. about four years ago. Here we have only a man or two inside the silo—there they have four. Here, we drop the silage from the top. That makes the atmosphere nearly unbearable. It puts the heavy stuff in a hard cone in the center, leaving the fluffy light stuff around the edges where it could scarcely be properly tramped down if there were enough men to do it. This fluffy stuff contains air which tends to greater spoilage. In the fierce atmosphere, the silage is seldom properly distributed, much less properly tramped.

In Wisconsin and a few places in California, a flexible jointed pipe leads the silage from the top of the silo down to a man, who swings it around to distribute the silage evenly and with good breathing.

These jointed pipes may be used later to lead the silage to the ground as is done by G. V. Rude near Imperial. A funnel-shaped top section is fitted with hooks to hang over the door edges. The rest of the joints hang on each other from this to the ground. Connections are made by a pair of short chains fastened on opposite sides near the lower end of each. At the end of each chain is a cross bar which is inserted through a hole near the top of the next lower joint.

Similar distributing pipes are made in 30-inch lengths, all hung onto a pair of chains which carry all the weight, rather than hanging it on successive joints.

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This record was an increase of 6 lbs. butter over her previous record and I expect her to make at least 30 lbs. on her next test.

His sire is Dutchland Pietertje Creamelle, one of whose daughters at 2 yrs. 1 month has just made a record of 22.52 lbs. butter, 391.7 lbs. milk, test 4.72%, making her California's champion 2-year-old.

This young bull is perfect in type, is 50% white and just ready for service. Born Apr. 22, 1915. Write or call and see the herd.

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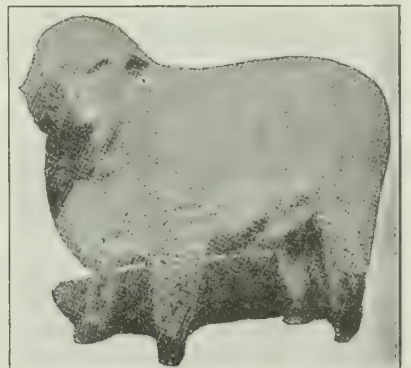
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ROOM FOR GROWING.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

Don't forget that August will soon be here and the pullets that were early hatched are among the early fall layers. It stands to reason that it just what everybody wants and is hoping for, but unless you do your part the pullets will balk at theirs. Every week they are growing and require more room, so it stands you in to be moving them to more roomy quarters. Next to short rations, crowding in brooder, brooder house, or in small weaning houses cause more pullets to be stunted and lose time maturing than any other one thing we can mention. It is surprising how fast they grow; and when given plenty of room they usually grow even in size. One time in the long ago a man asked me what caused his brown Leghorn chicks to have white blotches on them. He said they hatched all right, but in about two weeks they all had small white patches on the wings, breast, etc. He thought they must be mixed. As he did not live far away I was interested enough to go to his place to see if I could locate the trouble, and I did. It was in the crowded brooder; the chicks were being bruised, they were packed so tight, and after he moved half of them into another brooder the chicks feathered naturally. If these chicks had been white Leghorns the cause would probably never have been found out, as the chicks would have been crowded until they commenced to die and thus make room for those left. Now any other animal on the farm is looked after and given quarters large enough for natural growth; yet farmers neglect the chickens, which in times of poor crops are really the best-paying thing on the farm.

And let me tell you, Mr. Farmer, the egg crop is light this year. Here in Los Angeles eggs have gone up to 28 cents case count; at this time last year they were 25 cents case count. Numbers of small poultrymen have sold off their cocks, and the coming months give promise of being good for the man who has a nice flock of pullets coming on. Don't neglect them. Give them room in the house and plenty of room to run and exercise; they are building up a good, vigorous constitution while they are exercising. Keep them well supplied with litter that they can scratch in to find little tidbits, for there must be something to reward them or the scratching ceases. Look well after the mites in the houses; and where ticks are found, be extra vigilant; plenty of crude oil with about 2 per cent clear carbolic acid crystals is the quickest and surest remedy to spray buildings that are infested with ticks and mites.

Remember to spray the nests. This should be done with white distillate or coal oil and carbolic crystals. If the nests have mites, the hens will lay away any place, the eggs will be dirty and that makes another loss, all coming out of the owner's pocket. This week we are all caught up with the question box, which is quite an institution; and as I am going to make some changes in a short time you should read every line in this department.

Poultry Sex Control.—There are a great many conflicting opinions among breeders on this subject and I suppose every one is entitled to his own. Some people insist that if young cockerels are bred to two-year hens, the progeny will be more pullets; others claim that if a three-year cock is mated to pullets the flock will average two-third pullets and so on, every one going on just guess work and having no sufficient data to fall back on.

Being of an experimental turn I have tried all these methods and a few extras thrown in, and found very little choice in any of them—not enough to make me feel that I had found the plum in the prize package.

The life of a chicken is so short that it is quite difficult to keep much track of a large flock, but it can be done by painstaking care such as the real-fancier is willing to give. I have a friend who claims to tell the sex of the egg by some egg tester, combined with the shape of the egg; it is really funny to see him selling cockerels the way he does from eggs hatched from these "tested" eggs. This year most of his flock are going to market, cockerels.

Now I always prefer mature stock on both sides, not so much because of sex, but because I know the chicks will be stronger and better all ways. The only reason I can see for using cockerels is that they are more active; there is no other reason, in my mind, for the preference. If the hen controls the sex, as some claim, it stands to reason that if cockerels are used in preference to older males there is no economy in it.

We are told that the male is half the flock, but this statement must be modified, because he is only half of the flock when he is hatched from a hen that was strong enough to transmit her own fecundity to, not only her daughters, but her sons. Such a hen is what is termed a "cocky hen"; she has a coarse head, rather broad than long, and her comb is quite large for the breed she represents. A hen of these characteristics will usually lay eggs that will hatch more cockerels than pullets; and if she is a good layer and is well raised, so that health and vigor stand out as prominent features, then her cockerels may well be called "half of any flock" they are mated with.

One thing I have always noticed is that in early spring when both males and hens are fresh the eggs hatch out more cockerels; not just a few more, but at least a third more cockerels than the same yards will hatch later in the season when they have been mated some months. And even though fresh cockerels be supplied the output is still more pullets than cockerels.

Another thing I have noticed and practiced a good deal when hatching eggs for myself was to give a good vigorous male bird nearly twice as many hens as he can take care of, ordinarily. By this method we lose by infertile eggs and by using up hens' time to sit them out; but if two hens are set at one time the eggs can be tested out about the ninth day (that is as soon as it is safe to disturb them), and the eggs can then all be given to one hen and the other



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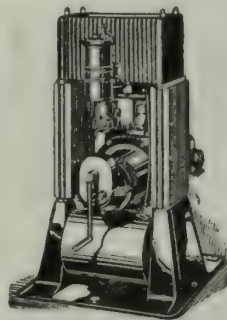
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allowed to go back to her business of laying eggs. When selling eggs to others, this method cannot be practiced, but is a good and cheap way to get two-thirds pullets.

Average Price of Eggs.—What is the average price of No. 1 fresh eggs paid the producer, also paid by the consumer?—S. A.

[Taking one week from the sales report of the San Francisco papers for three years we find that the prices varied one cent a dozen, this year's price being one cent below (this during the summer months). For a short time in the early spring when the production exceeds the consumption, prices are much lower; during fall and winter months, prices are up, and it is safe to average the various ups and downs to a 20 cent

price per dozen paid to the producer. What the consumer pays is past my ability to figure; but if he pays cash and buys from a reputable dealer the usual dealer's profit is five cents a dozen. This, however, is considered very little profit, because the price of eggs fluctuates so much that dealers sometimes lose, especially during the spring months when the price is up one day and down the next. It is almost impossible to give correct figures, or even guesses to the last question, for every locality has a rule of its own and some of these are too elastic for the average person to grasp.]

POULTRY NOTES.

[By Geo. H. Croley.]

Fredericks and Rex of Bangor are pleased with the returns from the sale of eggs during December and January last winter. In December 220½ doz. eggs sold for \$90.25. In January, 272½ doz. eggs sold for \$102.75. The eggs were the product of 125 pullets and 80 yearling hens, White Leghorns, that were selected by the Hogan method. The eggs from which these fowls were hatched were purchased of Mr. M. M. Turner of Bangor. This record demonstrates the value of proper selection and scientific care.

Chas. A. Romwell of Petaluma has been devoting some time to the study of white diarrhoea in young chicks. He has discovered that chicks which show no outward signs of bowel disturbance but appear to have been injured by overheating or by chilling, may in reality be infected with white diarrhoea. He has sent a number of chicks, some dead and others alive, to the poultry division of the University Farm at Davis for bacteriological examination. It is possible that Mr. Romwell will soon be able to send us an interesting report on this subject.

As an economical proposition, the University of California recommends feeding fowls a scratch feed composed of a general mixture of grains. Experiments conducted by the Nutrition Division have shown that when a proper and generous mash is fed, one grain is as good as another as far as egg production is concerned. It must be remembered, however, says the University, that a sudden change in the feeding cannot be profitably made, but change must be brought about gradually. Hence the benefit of accustoming the fowls to a mixture of grains. Then the predominating one can be that which is the lowest in price.

A valuable poultry and stock food that may be raised on rough waste land is promised the California feeders by Professor I. J. Condit. The carob, or locust bean, tree is one of the new varieties of semi-tropical foods with which Professor Condit has been experimenting, and as a result of his studies finds that this bean, which is an important product of southern Europe, grows even on the rough hillsides of California. The bean, or St. John's bread, as it is popularly called, furnishes excellent food for poultry, horses and domestic animals. The results of Professor Condit's investigations are given in his new correspondence course of fifteen lessons in citriculture, which is given free by the department of agriculture of the University of California.

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CLOSING OUT—FOR SALE CHEAP.—3 Electric Incubators, 576 egg capacity each. 2 Electric Incubators, 144 egg capacity each. 16 Electric Brooders, 150 chick capacity each. Complete with circuit breakers, thermostats, connecting sockets, etc. Address T. R. Jacobs, P. O. Box 395, San Mateo, Cal.

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BABY CHICKS AND EGGS.—Hoganzed Black Minorcas, White Leghorn, stock specialties. Free instructions on raising chicks. Hicks Jubilee Hatchery, Petaluma.

BABY CHICKS.—Strong and healthy, from high-bred free-range White Leghorn stock. Prices on application. Western Hatchery, W. S. Waldorf, Petaluma, Cal.

HERE IT IS.—White Rock baby chicks, \$15 per 100. Hatching eggs, \$1.50 per 15. From selected winter layers. Mrs. J. B. Tupper, Ores, Cal.

EASTMAN'S BRED TO LAY Barred Plymouth Rocks Choice cockerels. Fairmead Poultry Farm, Fairmead, Cal.

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WHITE LEGHORN BABIES and Hatching Eggs from Hoganzed, heavy-laying strain. Correspondence solicited. The O. C. McDonald Poultry Ranch, King and Jefferson, San Jose, Cal.

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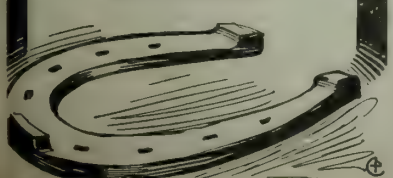
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Patrick Henry Addressing the First Continental Congress, Philadelphia, 1774

One Nation; One People

WHEN Patrick Henry declared that oppression had effaced the boundaries of the several colonies, he voiced the spirit of the First Continental Congress.

In the crisis, the colonies were willing to unite for their common safety, but at that time the people could not immediately act as a whole, because it took so long for news to travel from colony to colony.

The early handicaps of distance and delay were greatly reduced and direct communication was established between communities with the coming of the railroads and the telegraph. They connected places. The telephone connects persons irrespective of place. The telephone system has provided the means of individual communication which

brings into one national family, so to speak, the whole people.

Country wide in its scope, the Bell System carries the spoken word from person to person anywhere, annihilating both time and distance.

The people have become so absolutely unified by means of the facilities for transportation and communication that in any crisis they can decide as a united people and act simultaneously, wherever the location of the seat of government.

In the early days, the capital was moved from place to place, because of sectional rivalry, but today Independence Hall is a symbol of union, revered alike in Philadelphia and the most distant American city.

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The Home Circle Page of the Pacific Rural Press

MRS. BEST'S LETTER.

My dear Friends:

So swiftly do the seasons roll by that although we are in the midst of summer weather, the shop windows are full of winter millinery, furs, and fall suits. The ever-popular, black velvet sailor is here, but trimmed in an entirely new and novel fashion with wool yarn. One that I saw had the entire crown covered in a criss-cross design of different colors, while another had a rose with long stem worked on the brim and still another a long and short stitch running entirely around the brim. If the hats are not large, they are quite small, in toque shapes and many of those are trimmed in breasts and wings, so if you have any left-overs of that sort, you are fortunate. Soft, white plush hats with satin bands are distinctly new, but I think they are a mid-season style and will probably not last into the winter.

Many of the furs are in the same design as they were last year, the skin of the entire animal being used and worn across the shoulder, but one new design in a white fur was in the shape of a sailor collar and fastened at the throat in front by ribbons. This was very new looking and was worn at one of the college dances in place of a scarf of lace. By the way, scarfs like our grandmothers wore have supplanted the light chiffon ones that have been so popular.

The new waists both in silk and wash materials are very much more frilly than they have been—large revers down the front of the waist and large collars, many times edged with lace, make the waists seem more dressy than the plain tailored ones we have been wearing. Some of the fine lingerie waists with their fine tucks and dainty lace are wonderfully pretty and equally high-priced.

There are many pretty separate collars being worn, some suitable for tailor suits and others intended to give a finish to a voile or dimity dress. These dresses are many of them very simply made, with full skirt with applied folds or ruffles and simple surplice waist and girdle. The bordered materials are made with a double flounce skirt.

Another old-fashioned article that has re-appeared is the beaded bag. You see them in black, white and a combination of colors and also plain black silk bags with designs worked on the sides in beads. For dressy use, the silk bag seems to be better style than the leather.

Bags for fancy work are just as popular as ever and now you can pick up beautiful remnants in ribbons for one-half the original price. It would be a good time to buy for Christmas presents, for later in the year, all ribbons go back to their first price.

Another thing I noticed for substantial savings were materials for sofa pillows in cretonnes and linen weaves as well as the velours that in short lengths were only a fraction of their first price.

This store had many sample sofa pillows on exhibition and the large square sofa pillow is a thing of the

WHERE THE DANDELIONS WENT.

Three little dandelions, each in yellow gown,
Stood beside the winding road that led to Londontown.
They heard the merry children, they saw the travellers pass,
And they said to one another, "How sad it is, alas!
That we, too, may not travel and view the world beyond;
We've never even climbed the hill or seen across the pond."

Three little dandelions, each in gown of gold,
Taller grew each summer day in the leafy mould,
Yet they stood on tiptoe and peered through sun and rain,
To see if it was England that lay beyond, or Spain.
One said she saw chimneys, and another smoke and soot,
While the third saw ships a-sailing, but they never moved a foot.

Three little dandelions, each in gown of white,
Laid their plans to travel on a dewy night,
And, while cooling breezes fanned the waking day,
Spread their wings and vanished, oh, so far away!
But, if they reached that smoky town or the seashore as they meant,
I'm sure I'll never tell you, for I don't know where they went.

—Gussie Packard Du Bois, in Los Angeles Times.

past. These pillows were circular, or oblong and were made with cordings and shirred pieces set between circular sides. The materials were not expensive, mostly cretonnes, but the effects were beautiful.

Cretonne is being used not only for bedroom hangings but to make dresser and bureau scarfs as well, and to cover boxes for toilet articles. Yours devotedly, Rosabella Best.

SUNDAY EVENING TEA.

A very pleasant and inexpensive way to entertain the friends of the young people of your household is to give a Sunday evening tea. If you have small tables, it adds to the informality to serve the tea in the living room and the extra distance for the food to be carried is of no consequence, as the young men will attend to that.

A simple meal of hot biscuits or rolls, with jelly or jam, a salad or cream dish, with fruit and cake, with hot or cold tea—depending on the weather—is sufficient, or if you prefer, serve hot buttered toast with marmalade, a welsh rarebit and a gelatine pudding with whipped cream. Keep your refreshments simple and let the young people wait upon themselves, so that they feel thoroughly at home.

After the meal, story telling and singing will help pass a pleasant evening, and having arrived early, they can leave early, thus not interfering with the rest necessary for the next day's tasks.

ECONOMY IN OLIVE OIL.

If your household is fond of mayonnaise, try using salad oil with a small amount of olive oil added—the expense is very much less and the flavor is good.

TEA NAPKINS.

Plain linen finished with a crocheted picot edge is very good style now for tea napkins.

STRAWBERRY CUSTARD.

Make boiled custard with one quart milk, beaten yolks of four eggs, half cup sugar, half teaspoon vanilla. Crush and strain one pint ripe berries, mix with them half cup powdered sugar, then gradually beat this into the stiffly whipped whites of four eggs. Serve the custard in glass cups and pile the strawberry float on top.

FLORAL DEPARTMENT.

By Geo. N. Tyler.

Roses should be dried off this and next month (August). Do not give them any more water till first of September, and before watering, prune back all weak wood, and then put on some bone meal—one pound to the square yard and work it in to the top soil, then put on about one and one-half inches of half-rotted manure from which the heat has gone out. You can water through this manure, and be sure and spray the tops two or three times a day so they will break and make new wood. You will get a fine crop of flowers in October and November, for here in California we have practically two springs.

I would also advise drying off Pelargoniums (Lady Washington geraniums) where they are planted in the ground. You can then prune them back heavily the first of September, and they will make new breaks and the growth will be hard and more able to withstand frost. If you don't dry them off and keep them in a growing condition all the time, they will make soft, tender growth that is very susceptible to cold and frost and they are liable to be cut clear to the root.

Violets that were planted out in early spring are now in strong growth and are beginning to send out runners; keep these picked off or you won't get any early flowers. Keep them well watered and in a growing condition all the time.

Amaryllis will soon be in bloom, so water the place where the bulbs are planted, and they will soon throw up the flowering stalks. If you want to move any, or transplant them, you can do it as soon as they have thrown up the flower stalk, cut off the flower and transplant. The amaryllis is very impatient of being moved and it is the only time of year that you can move them and have them bloom the following year. If moved at any other time they will not bloom for sometimes two or three years.

I have a fernery that is about forty feet long and eight feet wide. There are forty-two varieties of ferns growing in it and about five hundred plants. The varieties are the native ferns and what domestic ferns that stand the frost. I have been asked by a lady to give my method of building and a list of the varieties that are in it that are hardy. I had a number of other varieties, but last winter's frost killed a good many of them and I have cut the list down to what I am now growing and which are perfectly hardy. I will discuss them in my next article.

POTATOES BAKED IN HALF-SHELLS.

Bake a sufficient number of medium sized potatoes. Remove from oven, cut slice from top of each, and scoop out inside. Mash and add two tablespoons butter, salt, pepper, and three tablespoons hot milk; then add whites of two eggs beaten until stiff. Refill skins with mixture and bake from five to eight minutes in very hot oven.

TIMELY TOMATO RECIPES.

Napoli Tomatoes.—Wipe and remove stem end from tomatoes. Scrape out most of the pulp with a spoon. Sprinkle inside with salt and invert and drain for half an hour. Mix well-cooked macaroni with one-half cup of grated cheese and one-half the removed tomato pulp and salt and pepper to taste. Fill the tomatoes with this mixture, sprinkle with bread crumbs and bake twenty minutes.

Fried Tomatoes.—Cut tomatoes in halves crosswise and cut off a thin slice from rounding part of each half. Sprinkle with salt and pepper, dip in crumbs, eggs and crumbs again, place in a well-buttered frying pan and cook for about ten minutes.

Tomato Salad.—Scald and peel tomatoes of even size—cool and place on lettuce leaf. With sharp knife, make two cuts across at right angles about half through the tomatoes. In these openings place cucumber slices and a little chopped celery on top. A generous spoonful of mayonnaise with a dash of paprika completes a very simple but attractive salad.

CARE OF THE TEETH.

Statistics prove that over fifty per cent of the children in the public schools have defective teeth. Mothers should be awake to the value of good teeth and the necessity of care for them. Early training in the use of the toothbrush and regular visits to a dentist should be insisted upon. Care in the early part of one's life will lay the foundation for strong, permanent teeth.

GIVE THE BABY A CHANCE.

The U. S. Public Health Service has a Bulletin ready for distribution on "The Summer Care of Infants," that will be sent free of charge to all applicants. All mothers of small children should take advantage of this offer.

HOW THEY CAMPED OUT.

Pound, pound, thump, thump! A little camp was being made in the hemlock grove half-way up the hill, while two excited little boys watched the preparations and did their best to help. What joy to sleep on a bed of fragrant, springy boughs, while the cool night wind blew round them! They could hardly wait for the time to come.

You see, father and Uncle Frank had just returned from a camping trip in the Adirondacks, and as soon as Dick and his boy friend, Tom White, heard the delightful experiences they were most anxious to have a camp of their own, and sleep in the big out-of-doors, far from any cottage. Mother herself made them some warm woolen sleeping-bags, that were to be drawn up to the sun-burned necks, leaving out only the curly heads.

That same evening Uncle Frank walked to the camp with the little boys, to see that they were comfortably fixed for the night. He spread the spicy boughs evenly, gave a final pat to the wooly bags, and, blowing out the lantern, left them with only the bright, far-off stars to watch over two happy little lads.

Presently something stirred lightly the green carpet; a soft sound broke the stillness not unlike a baby brook singing over the pebbles. Then it became a plain purr, and, behold! there were three campers. It was the black kitten, which had followed Uncle Frank from the cottage, and now settled down very comfortably between the sleeping-bags, not meaning, evidently, to desert his two good friends.

Did they lie awake long, listening to the noises of the wood? I think not, for the very first thing they knew it was daylight, and the east was brightening with the glory of sunrise. They straightway hurried to their separate cottages, where they awakened their sleepy friends to tell them they had slept splendidly, and wanted to spend "most every night" out of doors.

Sure enough, the very next evening, soon after sunset, two little figures might have been seen making their way up the hill toward the woods.

"Pooh!" said Dick, in a very big voice, "I don't care if Uncle Frank couldn't come with us to-night. I guess we know everything about camping by this time."

"Oh, yes," replied Tom, as he strode along, swinging his lantern.

"I'm sure there aren't any strange animals in these woods."

"Tom," continued Dick boldly, "it takes a good deal to frighten me. You couldn't tell me a story that would make me afraid. When I was eight, last summer, I wouldn't have come way up here to sleep. You see, I'm nine now."

Longer grew the shadows. The lights began to twinkle in the cottages at the foot of the hill. The little camp became strangely quiet; it had grown quite dark. In the silence the two boys crept into their sleeping-bags. Queer how different the camp looked by night! In the bright sunshine this morning it seemed so very near home: now there was such a long, dark space between their friends and themselves.

"I keep thinking, Tom," said Dick, "about that book I had for Christmas, 'Wild Animals I have known,'—some kind of frightening stories in there. Do you own that book?"

No answer from the little form at his side. Tom had fallen asleep, to dream, perhaps of wild animals he did not want to know. Oh, would he himself ever go to sleep? Dick shut his brown eyes tightly and listened to the lonely murmur of the wind in the trees.

Well, it would be morning very soon. They must have been in bed hours already. What was his mother doing? Perhaps thinking of her little boy—perhaps. A strange choking feeling came into Dick's throat. He turned and shook Tom vigorously.

"Tom," he said in an uncertain voice, "Tom, I don't feel good, I don't. I've got a queer pain in my chest, and when I have it I must always see my mother."

"Is it very bad?" asked Tom's sleepy voice.

"Awful!" in a hoarse whisper. "I'm going home."

"So am I, then," chimed in the other bold camper. Hastily pulling off the sleeping-bags and pulling on sweaters, they lighted the big tin lantern, and were soon stumbling over sticks and stones on their homeward way. They separated at the grassy lane, Tom turning in, and Dick, minus the lantern, keeping on down to his cottage.

Softly opening the front door, he entered the hall. But what did this mean? The living-room was lighted! Was baby sick? And there sat mother, reading by the open fire, looking dearer than ever in her pretty white gown.

"Why, my little camper!" she exclaimed. "Home again?" And Dick, with both sturdy arms round her, told her all.

O wise mother! O understanding mother! How comforting to a small son to learn that she had been thinking and wishing for him just at the time that he had been thinking and wishing for her! It was well that he came back to this lonely little mother of his.

Just as she tucked him up in his own soft bed Dick opened drowsy eyes to ask:

"And isn't it most morning, mother?" And, smiling, mother answered:

"No, dear, no. It's nearly nine o'clock."—Alix Thorn.



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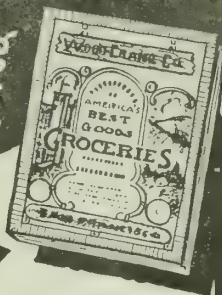
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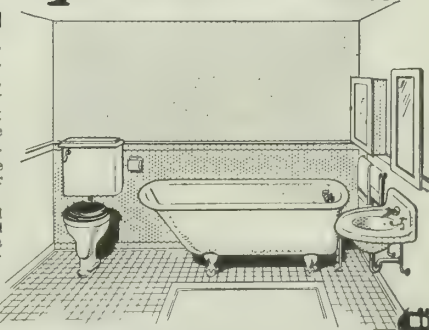
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HATCHET THE MOLE.

To the Editor: Have used traps unsuccessfully to trap the moles which infest my flower garden.—Mrs. M. J. P., Gilroy.

[In our issue of May 27 we advised watching for the moles and striking them through the dirt with a hatchet. Does anyone know a better way?]

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FIGURES GIVEN
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Pacific Rural Press Market Report

PRICES QUOTED
AS PAID TO
PRODUCERS

San Francisco, July 26, 1916.

WHEAT.

Buyers are beginning to take more active interest, and market is stiffening up on both local and northern grain. Sonora is scarce and advanced sharply; both northern and California club and bluestem have been marked up.

Sonora Wheat \$1.77½ @ 1.80
Northern Club 1.75 @ 1.77½
Calif. Club, ctt. 1.72½ @ 1.75
Northern Bluestem. 1.85 @ 1.87½
Northern Red 1.80 @ 1.90

BARLEY.

Both spot and future barley shows some strength. Shipping barley in good demand, both in East and Europe; while none is moving foreign by sea as yet, prices have been marked up sharply. With a light crop, the advance is reflected in feed. Shipping, ctt. \$1.50 @ 1.52½
Choice Feed, ctt. 1.45 @ 1.47½

OATS.

Offerings of all grades are light, with buying movement broadening prices continue to advance. Both red and white feed slightly higher, red seed beginning to move. Black seed also receiving some attention, and held at stiff prices.

Red Feed \$1.65 @ 1.75
Red Seed 1.80 @ 1.90
White 1.62½ @ 1.65
Black seed 2.50 @ 3.00

CORN.

Stocks of corn in the East are rapidly decreasing, and advance there is reflected in local market. Not enough California yellow left to quote, but Egyptian and the other sorghum grains are bringing better prices.

Eastern Yellow, ctt. \$1.90 @ 1.95
Milo Maize 1.45 @ 1.50
Egyptian 1.60 @ 1.65

BEANS.

No quotable change is noted this week, though some fluctuation is likely to occur. At present all lines are fairly firm, with stocks at an unusually low level; but high prices have held demand down very closely, and it is not certain that this level can be held through the rest of season. It will be some time before new beans are offered, however, the outlook is favorable for firm market. It is too early to forecast coming crop, and Association prices on limas will not be made until Sept. 1; though the high range now prevailing cannot be expected to hold when new crop comes in.

(On wharf, San Francisco.)

Bayos, per ctt. \$6.25 @ 6.50
Blackeyes 3.50 @ 3.75
Cranberry Beans 5.75 @ 6.00
Horse Beans 3.25 @ 3.40
Small Whites (south) . 9.75 @ 11.00
Large Whites 8.75 @ 9.00
Pinks 6.75 @ 6.90
Limas (south) 6.00 @ 6.50
Red Kidney 8.00
Mexican Reds 5.50 @ 5.60
Tepary Beans 4.50 @ 4.75

HAY.

Local hay prices are gradually advancing, showing that views of some growers were partially justified, and the fact is realized by local buyers. No. 1 grade of wheat hay has jumped \$1 per ton, with advances in the top figures on No. 2 wheat, wild oats, barley and stock hay. Arrivals are increasing, as there is no longer trouble in handling river shipments a great deal of the river alfalfa is coming in. Dealers report car shortage hampering shipments and all arrivals sold readily, indicating that buyers are disposed to put in supplies. A serious shortage is reported in Nevada, which will tend to stiffen this market.

Wheat, No. 1 \$13.00 @ 14.50
No. 2 10.00 @ 12.00
Tame Oats 11.50 @ 15.00
Wild Oats 10.50 @ 13.00
Barley 10.50 @ 13.00
Alfalfa 10.00 @ 14.50
Stock Hay 8.50 @ 9.50
Straw, per bale35 @ .50

FEEDSTUFFS.

Advance in grain and hay is re-

Special Deciduous Market Report.

By J. L. Nagle.

Sacramento, Cal., July 24, 1916.

This week's shipments will practically complete the shipping season from the Sacramento river district.

The movement of Elberta peaches at this writing is at its height, both in the San Joaquin valley and Placer county, but practically all of this variety will have been shipped by the 29th.

Late plums are now moving and the shipment will also be completed by the end of the week.

The late pear crop is light and some shipments are now going forward.

A few crates of Tokays have been shipped, the berries showing a sugar test of 20 per cent. Malagas and Thompson Seedless are also en route East and the movement on the former variety will be very heavy within a week. We do not look, however, for the bulk of the Tokays to move before the middle of August.

The Bartlett pear movement east has been exceptionally heavy, considerably more so than was anticipated earlier in the season, but all markets have held up remarkably well under heavy offerings.

Competition from eastern states has not been as keen as expected due in a great measure to the unseasonable weather during the picking sea-

son in Georgia. The Georgia shipments are on the decline, having been at their height last week. Some competition will be felt from New Jersey, Delaware and Maryland during next two weeks.

The Wisconsin, Michigan and New York grape crops are not over 60 per cent, and this situation, together with the light pear crop in the Northwest and New York State, indicates that our grape market will be in good shape throughout.

Tokays have been damaged to considerable extent during the recent hot spell and it is conservatively estimated that the crop will be less than 50 per cent of normal. Malagas are normal and likewise Emperors.

The following prices have ruled for the week:

New York.—Bartlett pears averaged \$2.16; Wickson plums, \$1.47; Diamond \$1.60; Duke \$1.68; Giant \$1.30; Burbank \$1.10; German \$1.65; Tuscan peaches \$1.10; Crawford 73c; Decker 86c; Elbertas 80c; Malaga grapes \$1.96.

Chicago.—Bartlett pears \$1.96; Wickson plums \$1.38; Giant \$1.37; Sugar \$1.47; Burbank \$1.37; Duke \$1.54; Egg \$1.20; Diamond \$1.71; Malaga grapes \$1.80; Muscat \$1.79; Crawford peaches 79c; Tuscan 90c.

Total shipments to date, July 24, 4914 cars; total shipments same date 1915, 3371 cars.

POTATOES AND ONIONS.

Delta and Southern potatoes continue firm, with light supplies and some shipping inquiry; some off-grade stock is offered at a reduction. The new crop of yellow onions now coming in good shape and another decline is noted.

(On wharf.)

Potatoes, ctt., Delta ... \$1.50 @ 2.00
No. 2 1.00 @ 1.50
Southern 2.00 @ 2.25
Onions, yellow 1.25 @ 1.50
Garlic, new crop, per lb ... 4 @ 5c

POULTRY.

Arrivals from East have been moderate, but there is plenty of local stock offered, and with slow demand values are easier. Broilers are weak, and fryers have been marked down. Broilers, 18 lbs. to doz. and

less, lb 20 @ 21c
do, over 18 lbs to doz .. 20 @ 21c
Fryers 20 @ 21c
Hens, extra, per lb. 17 @ 18c
Small 16c

Smooth Young Roosters, per lb. 23 @ 25c
Squabs, per doz. 2.00 @ 3.50
Geese, per pair 2.25 @ 3.00
Ducks 13 @ 14c
Old 12 @ 13c
Belgian Hares 7 @ 9c

BUTTER.

Market is uninteresting now. All grades have gained ½c over last week's level, no change has occurred during most of the week, with supply and demand about even.

Thu. Fri. Sat. Mon. Tu. Wed.
Extra 26½ 26 — 26 26 26
Prime Firsts 25½ 25½ — 25½ 25½ 25½
Firsts 25½ 25½ — 25½ 25½ 25½

EGGS.

Closing price of last week has been maintained, a cent's advance Monday bringing in so much stock that gain was lost the following day. The

week's average is now about 3c higher than last year; with production likely to fall off from now on, no important drop is expected.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras 28 28 — 29 28 28
Sol. Pullets 25½ 25½ — 26½ 26 26

CHEESE.

Flats have regained half-cent lost last week, Y. A.'s standing as before; Monterey cheese is easy, off-grade lots bringing even less than quotations.

Y. A.'s fancy 17 c
Fancy Calif. Flats, per lb. 14 c
Monterey Cheese 14 @ 15½ c

LOS ANGELES DAIRY PRICES.

Wed. Thu. Fri. Sat. Mon. Tu.
Butter 26 26 26 26 26 26½
Eggs 28 28 28 28 28 28

DECIDUOUS FRUITS.

Berry market has eased off, except on Logans, which are slightly higher; strawberries, blackberries and currants being quite cheap. Huckleberries coming in with some regularity, but prices still rather high. Top price of Gravenstein and Alexander apples a little easier. There is a strong demand for early apples for England, Australia and South America, but shipping rates are practically prohibitive; the domestic demand keeps values fairly firm. Bartlett pears are in good demand, but local offerings are easier, with a good deal of ripe stock. Apricots firm, with a strong canning demand, and the crop is over in several districts; peaches show wide range, a great deal of off-grade stock being cheap. Figs are quite firm, prices well maintained on better offerings of plums and prunes; nectarines are dull and easy. Cantaloupes and watermelons are coming in freely from Valley points, lower prices prevail. Grapes remain firm.

Huckleberries, lb 12½ @ 15c
Currants, chest \$3.00 @ 4.00
Loganberries, chest 4.00 @ 5.00
Blackberries, chest 2.00 @ 3.00
Raspberries, chest 5.00 @ 7.00
Strawberries, chest 4.00 @ 5.00
Apples, Gravenstein ... 1.00 @ 1.15
Astrachan85 @ 1.00
Alexander75 @ .85
Crab apples, lug40 @ .50
Pears, Bartlett, bx, No 1 1.25 @ 1.40
No. 2 60 @ 75c
Apricots, small box 50 @ 75c
do, lugs, 50-lb. 1.25 @ 1.50
Peaches, lugs50 @ 1.00
Peaches, basket50 @ .85
Figs, blk, bx, dble layer. .90 @ 1.25
Plums, crate40 @ 1.00
lugs75 @ 1.00
Prunes, crate 1.25
Nectarines, crate50 @ 1.00
Cantaloupes, standard
crate 1.25 @ 1.50
Watermelon, doz 1.75 @ 3.00
Grapes, Thompson, small bx .75 @ 1.00
Fontainebleau, crate 1.25

DRIED FRUITS.

The market remains in about the same quiet condition as last week, except the dullness is more widespread than before. Packers say that Eastern buyers are taking practically no interest, and the prospect of a railroad strike and other labor troubles has checked business to a great extent. Packers have accordingly made a further reduction in offers for prunes of either old or new crop, 5c being about the top. Top figure on apples also reduced slightly, and there is little movement of new apples. The reluctance of Eastern trade to buy has so far had no influence on most of the growers, and there seems to be no reason to force fruit on the market. Growers of apricots appear to be justified in holding, there is nothing to indicate values will be lower for any extended period, though it may be some time before any advance is realized. Figs remain firm and scarce, peaches are quite steady. Raisin situation strong.

Apples, old crop 7 c
Apricots, per lb, 1916 12 @ 13 c
Figs, white, 1916 6½ @ 6½ c
Black, 1916 5 @ 5½ c
Caltmyrna, 1916 9 @ 10 c
Prunes, 4-size basis, 1915 5 c

Special Livestock Market Report.

No change in prices can be quoted on any class of livestock or wool.

Cattle.—There are plenty of cattle to supply all demands at least until fall.

Hogs.—It seems like everybody wants to get rid of their pigs without feeding them. The quality of receipts is poorest yet. Many people are shipping 100 pounders off from alfalfa, unfinished and soft. It would be a good time to get feeder stock, as

the demand continues to be for 175 to 225 pound hogs. Hot weather makes consumption low at this season anyway.

Sheep.—Consumption is low at present prices and will probably continue so, at least until cold weather.

Wool.—No material change and nothing outstanding in any of the foreign or domestic markets. Defective wools are dragging even more than usual.

1916 5 c
Peaches, old 5 @ 5 1/2 c
1916 6 c
Pears 6 1/2 @ 7 c
(Associated Raisin Co. Prices.)
Fancy Seeded, 16 oz. 7 c
London Layers, 3-crown,
20-lb. box, 1916 \$1.30
Imperial Clusters, 6-crown,
20-lb. box, 1916 2.50
Bulk, layers, 50-lb. box, 1916 2.75
cases, per lb 8 3/4 c
Sultanas, 50-lb. cases, per lb . 8 c

CITRUS FRUITS.
The lemon growers are now having their innings. The hot weather in the east and the scarcity of hold-over stock is causing prices to soar. Valencia oranges are also bringing good prices and prospects for the rest of the season are good.
At New York on Monday, July 24, the citrus auction averaged for valencias from \$2.80 to \$5.10 per box, and for lemons \$4.70 to \$6.30. At Boston the same day oranges averaged from \$3.65 to \$4, and lemons brought as high as \$8 per box. About 80 cars of oranges and 45 cars of lemons are being sent east daily.
Hot weather throughout the country has caused an extremely heavy demand for oranges, lemons and grapefruit, the two former have steadily advanced at shipping points. Lemons have been marked up to ex-

treme prices in local market, while oranges are going up less rapidly, there is considerable stock here, bought before the advance.
Oranges, Valencias \$3.00 @ 3.75
Grapefruit 2.00 @ 3.00
Lemons, box 3.00 @ 7.00
Lemonettes, box 2.00 @ 3.00
HONEY.
There is a good demand for honey, as arrivals have been light, most of the dealers would be glad to get more stock. Prices are well maintained.
Water White, comb 13 @ 15 c
Amber 10 @ 12 c
Water White, extracted .. 8 @ 9 c
Light Amber, new 6 @ 7 c
Dark 3 1/2 @ 4 c

NUTS.
Almonds remain quiet, with few growers showing anxiety to sell in advance. There is good demand for new crop.
(Prices offered by packers.)
Almonds, 1916:
Nonpareils, lb 17 1/2 c
I. X. L. 15 c
Drakes 13 c

HORSES.
Considerable buying is still being done for American and foreign army requirements, but dealers state that that is the only real activity. No new offerings worth mentioning have appeared in the local market this week, and that is just as well, as buyers are taking no interest, difficulty being experienced in moving anything at satisfactory prices. Values in the country are well maintained, there is apparently enough demand at outside points to justify prices asked.
(Approximate values in San Francisco, based on auction sales.)
Drafters, 1700 lbs and up \$ 250
Drafters, 1550 to 1650 .. 150 @ 200
Chunks, 1350 to 1500 lbs 150 @ 175
Wagon horses, 1050 to
1350 lbs 110 @ 150
Green Mountain range
horses, 950 to 1200 lbs 20 @ 75
Farm workers 50 @ 100

LIVE STOCK.
(Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.)
Steers, No. 1 6 3/4 @ 7 c
No. 2 6 1/2 @ 6 3/4 c
Cows and Heifers 5 3/4 @ 6 c
No. 2 4 1/2 @ 5 c
Bulls and Stags 4 @ 4 1/2 c
Calves, light 7 1/2 @ 8 c
Medium 7 @ 7 1/2 c
Heavy 6 @ 6 1/2 c
Hogs, grain-fed:
100 to 150 lbs 8 c
150 to 250 lbs 8 1/2 @ 8 3/4 c
250 to 325 lbs 8 @ 8 1/4 c
Prime Wethers 7 @ 7 1/2 c
Spring Lambs, f. o. b.
country points \$5.00 @ 5.50

WOOL.
(Prices paid in the country.)
Red Bluff, year's 25 @ 27c
Sacramento Valley, year's .. 19 @ 25c
Mendocino, year's 31 @ 32c
Mendocino, 7 months' 26 @ 27c
Southern, year's 18 @ 21c
Southern, 7 months' 15 @ 18c
Imperial Valley, year's 17 @ 19c
Imperial Valley, 7 mos 14 @ 15c
Nevada 21 @ 23c

HOPS.
The market is extremely quiet at present, with practically nothing doing in new-crop hops, for which growers are asking 11c. Old Sacramento hops are held at 8 to 9c, Mendocino and Oregon at 9 to 11c, but there is very little demand. There is said to be 10,000 bales left in Sacramento district, 4,000 to 5,000 in Sonoma, etc., and 7,000 to 8,000 in Oregon.
Sacramento, 1915 8 @ 9c
Mendocino, 1915 9 @ 11c
Oregon, 1915 9 @ 11c

GROCERIES.
Sugar is very firm, prices having stood for some time at \$8.30, granulated basis, for cane and \$8.10 for beet dry granulated from refiners. Flour is quiet, but firm at the old

California Almond Growers' Exchange has met every obligation, weathered every storm and has held fast to those teachings which stand for honesty and square dealing in business.

Its original membership six years ago was 230. The net increase in membership since the 1915 crop is 267, making a total membership of 1086 growers.

Every almond grower is urged to join the Association and give it greater strength in developing and protecting the industry.

California Almond Growers' Exchange

SAN FRANCISCO, CAL.

level of \$6.40 to \$6.80 for family extra. Pacific codfish shows a further advance of 1/4 c per lb. An advance is expected in canned meats.

Publisher's Department

GOOD AS AN ENCYCLOPEDIA.
I have been reading Prof. Wickson's latest book, the "Second Thousand Questions," and find it so good that I feel you all ought to know about it and get a copy. It is like having an encyclopedia in the house. A short time ago, I hired a man to come out and bud some almonds on peach trees for me. He said it could not be done, as the one was a nut, the other a fruit. Now I let him bunco me with that; but a few days later found the answer in "One Thousand Questions," and he got orders to come back and do the work. This book is good, take my word for it; there are answers to almost every

question the farmer runs up against.
Susan Swaysgood.

In an address before the Advertising Clubs at Baltimore, G. B. Sharpe, advertising manager of the De Laval Separator Co., said: "As one of the largest buyers of farm advertising in the country, the first thing I want to know about a farm paper is not its circulation, but the service it is rendering its readers through its editorial columns. The next thing is, does it exclude objectionable advertising, then whether the paper sells to its subscribers on merit or is given away through premiums for nothing. A statement in a publication that deserves the farmers' confidence has vastly more weight than in a paper that has no standing with its subscribers."

One hundred and seventy-six new subscribers were added to our list during the past week.



Join these engineering and automobile classes—

Auto machinists—auto repairers and trained men of every kind are in big demand at good pay.

Practical courses, directed by practical experts, will qualify you for any of these positions—

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- Mathematics
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- Industrial Chemist
- Estimating
- Structural Engineer
- Auto Truckman
- Electrical Engineer
- Wireless Operator
- Architect
- Plan reading
- Concrete Builder

8 stories of modern equipment—modern machine shops—Assembling plant—Electric shops—Lathes, Drill presses—Shapers—Milling Machines—Grinders—Bench Tools—Gear Cutting—Autos.

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Heald's Automobile
and
Engineering Schools
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San Francisco

Please send me full information about the course checked above.

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Address

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Contains the vital elements that plant life needs for growth. Produced 344 flowers on a Shizanthus in 28 days. Try this wonderful fertilizer. Easy to apply—inexpensive—odorless. One tube treats 100 plants. Mailed direct from manufacturer, if you desire. Full directions with each tube. One tube, 25c—Five tubes, 90c.
FORBES CHEMICAL CO., 35 St. Anne St., San Francisco

Classified Advertisements

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Rates in this directory. 3c per word each issue; or if carried weekly for one year, 2 1/4 c per word.

REBUILT GAS ENGINES from 3 to 50 h. p. Thoroughly overhauled and guaranteed. We only handle high grade engines. Write us your requirements. Motors, Gas Engines bought, sold and exchanged. Mechanical Installation Company, 181-89 Second St., San Francisco.

EVERY SIZE WROUGHT IRON WATER PIPE and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a SQUARE DEAL. Weissbaum Pipe Works, 180 Eleventh Street, San Francisco.

GAS ENGINES—I can furnish rebuilt Fairbanks, Morse, Otto, Peerless, Samson, Union and other good makes in all sizes. All investigators buy and all buyers are delighted. Pay when satisfied. J. J. Pottinger, 189 2nd St., San Francisco.

SECOND HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHEETER PIPE WORKS, 306-8 Howard St., San Francisco.

FOR SALE—Spaulding Deep Tilling Plow. Plows 24 inches deep. Have plowed only 40 acres with machine. Good as new. Cheap for cash. Marin French Cheese Co., Box 679, Petaluma, Cal.

LIVING EXPENSES REDUCED THROUGH CO-OPERATIVE BUYING—Write for catalogue and particulars. Pacific Co-operative League, D236 Commercial St., S. F.

BUY ROASTED COFFEE WHOLESALE—Best, 10 pounds, \$3.00 delivered. Order with remittance. WM. F. SCHROTH CO., 112-B Market St., San Francisco.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency. Savings and Loan Building, Stockton, California. Established fifty years.

TO REDUCE THE HIGH COST OF LIVING, send for our Wholesaler to Consumer Catalog. SMITHS' CASH STORE, 106 Clay St., San Francisco.

FOR \$30—Sharpe's Separator, first class condition. No use for it. B. F. Ballinger, Hazelle.

WANTED.

WANTED—ABOUT SIXTY YOUNG MEN and women to enter the WESTERN NORMAL on August 28, 1916, to prepare for teaching. Western Normal graduates secure and hold good positions. We assist graduates to secure good positions and promotion. We also give a two year high school course. For information, address WESTERN NORMAL, J. R. Humphreys, Principal, Record Bldg., Stockton, Cal.

WANTED—Reliable solicitors for country paper. Must furnish bond. 217 Underwood Building, San Francisco.

LAND FOR SALE.

WHY NOT COMBINE BUSINESS WITH PLEASURE in your vacation? Look up some GOOD land. Send us Lists of STATE Land (any 3 counties), INDIAN lands (Special NOW), SCHOOL Lands, services until 917, 55. COUNTY Sectional Maps showing GOVERNMENT Land, \$2.50 ANY County. STATE Map, showing SCHOOL Land, \$2.50. Order TODAY. Booklet, FREE. Joseph Clark, Sacramento.

FOR SALE—Well improved 30 acre ranch, with modern bungalow, barn, corals, etc., 10 acres almonds, remainder in alfalfa, family orchard, etc. Electric motor or pumping and electric lights. On good road, close to town, schools and churches. Price, \$37,500. Terms. Address Owner, Box 32, Rt. 1, Manteca, Cal.

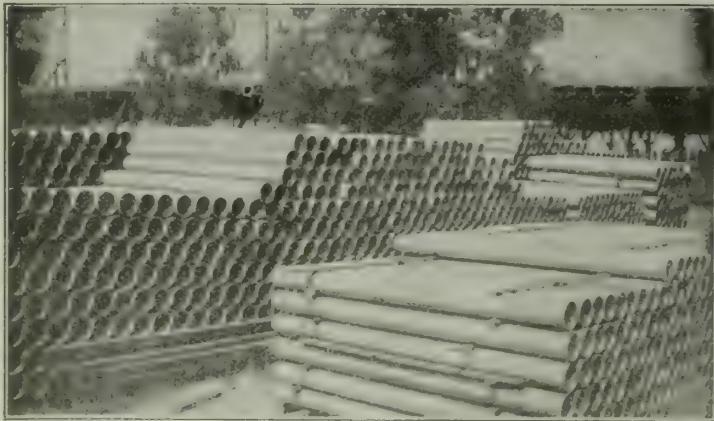
FARMS can be sold quickly by applying the Co-operative Service offered by Realty, the National Real Estate Magazine. Write for particulars, Realty, 220, 5th Ave., New York City.

WANTED TO RENT a ranch on shares or for cash. Fruit or stock proposition preferable. Can furnish references as to ability. Address P. O. Box 31, Livingston, Cal.

FOR SALE—House and two large lots, well, tank-house and garage. Suitable for chicken ranch, etc. For terms write Box 282, Redwood City, San Mateo Co., Cal.

FOR SALE—Nicely sheltered ocean shore land for a home or an investment. J. W. McMillen, Gualala, Cal.

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Large Stock on Hand—All Sizes.
"WESTERN"

Surface Irrigation Pipe GALVANIZED

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Best for Strength and Durability.

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of California.

444 Market Street,
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1758 N. Broadway,
LOS ANGELES.

Compare the Cost

TWENTY years ago a farmer borrowed \$1,000.00 at 6 per cent straight on the old fashioned loan plan. He has renewed the loan at intervals with constant expense of renewal commissions, abstract charges and recorder's fees, and he still owes the principal sum of \$1,000.00

He has paid \$60.00 interest every year for 20 years, a total of 1,200.00

Total cost to farmer, including \$1,000 still unpaid.....\$2,200.00

Under the amortized rural credit plan, his total interest and principal payment would be \$90.76 a year for 20 years, or..... 1,815.20

A saving on a loan of \$1,000 of.....\$ 384.80

The following table shows the amount of INTEREST SAVED by borrowing on the amortized or rural credit plan:

Amount Borrowed.	Annual Payment Amortized Loan.	Total Payments. 20 Years.	Straight 6 per cent for 20 years and Principal Repaid.	Interest Saving Amort. Loan.
\$ 1,000	\$ 90.76	\$ 1,815.20	\$ 2,200.00	\$ 384.80
2,000	181.51	3,630.20	4,400.00	769.60
4,000	363.02	7,260.40	8,800.00	1,539.60
8,000	726.05	14,521.00	17,600.00	3,079.60
10,000	907.56	18,151.20	22,000.00	3,848.80

We think this amortized loan which can be paid off any time is the best loan, for the farmer, being offered in California, but if preferred, will make 10 year loans, annual interest and favorable prepayment options. Both types, each being for a long term, offer a big advantage in selling a farm, for each gives buyer longer time to pay out than sellers or other loan companies generally grant.

Full information given on request without obligation to borrow.

LOMBARD & SON, Inc.

519 Underwood Bldg.

San Francisco



Bumper Grain Crops Good Markets — High Prices

Prizes Awarded to Western Canada for
Wheat, Oats, Barley, Alfalfa and Grasses

The winnings of Western Canada at the Soil Products Exposition at Denver were easily made. The list comprised Wheat, Oats, Barley and Grasses, the most important being the prizes for Wheat and Oats and sweep stake on Alfalfa.

No less important than the splendid quality of Western Canada's wheat and other grains, is the excellence of the cattle fed and fattened on the grasses of that country. A recent shipment of cattle to Chicago topped the market in that city for quality and price.

Western Canada produced in 1915 one-third as much wheat as all of the United States, or over 300,000,000 bushels.

Canada in proportion to population has a greater exportable surplus of wheat this year than any country in the world, and at present prices you can figure out the revenue for the producer.

In Western Canada you will find good markets, splendid schools, exceptional social conditions, perfect climate, and other great attractions. There is no war tax on land and no conscription.

Send for illustrated pamphlet and ask for reduced railway rates, information as to best locations, etc. Address

Superintendent of Immigration, Ottawa, Canada, or apply to Gilbert Roche, Canadian Gov't Agt., Canadian Bldg., Exhibition Grounds, San Diego, Cal.

Canadian Government Agent



HOW ABOUT CROPS THIS SUMMER?

Proper irrigation will more than double your crops—ask your neighbor who has tried it.

Electric motor-driven pumps will solve any irrigation problem. They need no attendant, deliver water steadily day and night and cost but little to operate. Insist on a

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to do your pumping. It will pay for itself in a short time in bigger crops, perfect satisfaction and low upkeep.

A G-E portable motor can be used to drive various farm machinery, greatly reducing your labor bills and insuring you against scarcity of "help".

Your local power company will gladly tell you what G-E motors can do for you; or write our nearest office for booklet No. 3166 on electric farming—the request will place you under no obligation.

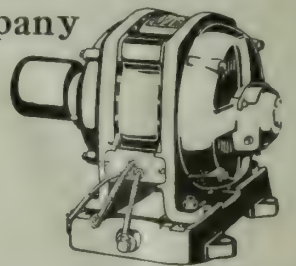
General Electric Company

Los Angeles Office:
124 West 4th Street

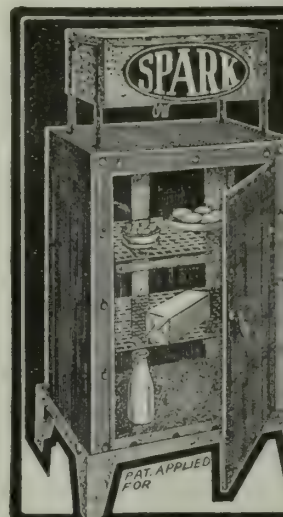
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5453



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A practical household necessity. No family should be without one. Will pay for itself in one season. Butter, Milk, Eggs, Fruit, Meat, Vegetables, can be kept cool, sanitary, in the hottest weather. Constructed of heavy galvanized iron—does not absorb moisture like wood and becomes foul lined with germs. Inside is lined with heavy galvanized wire mesh—keeps out mice and rats. Covered with heavy brown leather—easily replaced. Heavy reinforced wire shelves—thoroughly sanitary. Made in 3 sizes. Send for Descriptive Circular.

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WOOD-CRANE COMPANY

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San Francisco, Cal.



THE PACIFIC RURAL PRESS

SAN FRANCISCO

AUGUST 5, 1916.

LOS ANGELES

Rules and Prizes, State Cow Competition.

Cows which are not purebreds will compete among themselves only, for cash prizes of \$1995, seven purebred bull calves of four breeds and \$100 worth besides, five separators, and three trophies. The total additional prizes for purebreds, grades, and common cows will be \$2740 cash, two milking machines, 1 separator, 15 tons dried beet pulp, and six trophies and medals. At least one creamery company will pay half of the expense of testing by patrons. But the prizes are of far less value than the discovery of cows which do not pay their keep, and the feeds which produce most economical profits. Contest conducted by University of California.

[By Prof. F. W. Woll, in charge of dairy tests, University Farm, Davis.]

RULES.—Any cow owned by a resident of the State of California may be entered in the competition.

The awards of the prizes offered in the competition, except as otherwise given, shall be made on the basis of the production of butterfat during a period of ten consecutive months, as determined by the system of semi-official testing of dairy cows.

Cows entered in the competition shall be tested for two days of every month, as arranged for by the rules governing semi-official yearly tests in this State. Grade cows may, however, be tested for only one day each month, if desired.

In order not to place young animals at a handicap in the award of prizes, the records for production actually made by cows under five years of age shall be increased in accordance with the average results obtained in authenticated yearly tests of cows of different ages, as follows: Records made by cows under 2½ years at the beginning of the test shall be increased by 30 per cent; 2½ to 3 years old, by 24 per cent; 3 to 3½ years, by 18 per cent; 3½ to 4 years, by 15 per cent; 4 to 4½ years, by 8 per cent, and 4½ to 5 years, by 5 per cent.

The owner shall furnish a correct monthly statement of the amount of milk produced by cows entered in the competition and of the kinds and amounts of the different feeds eaten by them. Blanks for reporting milk yields and the feed eaten will be furnished free of charge for this purpose. Milk records calculated from the data obtained in the monthly tests may be used, at the option of the Experiment Station authorities, for arriving at the production of the cows, in the place of those reported by the owners or where regular milk records are not kept by the owner.

Records of production for the competition may begin on the fifth day after calving and shall close ten months from the date of the beginning of the test. A cow will not, as a rule, be tested prior to the fourteenth day from freshening. When an official test of a cow in the competition, of seven days' duration or longer is conducted during a month, the average fat content for this period shall be used for the calculation of the production of butterfat by the cow during that month.

Failure to get a cow in calf before the end of the fifth month after calving shall bar her from competing for any but the monthly prizes and the trophies offered by the various breed associations.

The cost of the monthly two-day tests conducted in connection with the competition shall be \$7.50 for each farmer, and that of one-day tests of grade cows, \$5. This cost includes all direct expenses of the tests to farmers, except room and board of the supervisors while on duty, and

transportation to and from the nearest railway station or ranch where tests are conducted.

The maximum number of cows in a herd that may be tested at one time shall be fifteen if the cows are milked twice a day; ten if any are milked three times a day; and eight if any are milked four times a day. No cow entered in the competition shall be milked more than four times a day, and this number of times only when yielding over 60 pounds of milk per day.

The maximum amount of prize money paid to any one breeder (exclusive of monthly and special prizes) shall be \$500. Prizes shall only be awarded to the bona fide owner of a cow at the time her record is completed. Only records of production of 365 pounds of butterfat or more by purebred cows for ten months shall be considered in the award of cash prizes.

Where a choice of two or more prizes is offered, the highest production shall entitle the owner to first choice, the next highest to second choice, etc., in the order of decreasing production.

What is a Grade?—In the award of prizes to be made in the competition, it shall be considered that a grade cow is the progeny of a purebred bull and a grade or common cow, and that a common or "scrub" cow is the progeny of a "scrub" or grade bull.

All questions not covered by the preceding rules or by the rules governing the semi-official tests in this state, shall be decided by the Chief of the Division of Animal Husbandry in the College of Agriculture of the University of California, whose decision shall be final.

Applications for entry in the competition may be made any time prior to May 1, 1917, when the entries will close. Records of production may commence on November 1, 1916, and prizes will be awarded for records for ten consecutive months made prior to March 1, 1918. Entry blanks and further information concerning the competition will be furnished upon request. Address, Professor F. W. Woll, in charge of dairy tests, University Farm, Davis, California.

Prizes and Contributors.—The general cash prize fund is contributed by: Alexander and Kellogg, Suisun; Mrs. Anita M. Baldwin, Santa Anita; Balfour, Guthrie & Co., San Francisco; "Calf-Way" Milker Co., San Francisco; California Central Creameries, San Francisco; De Laval Separator Co., New York City, New York; W. H. Dupee, Santee; J. S. Gibson Co., Williams; F. M. Helm, Fresno; Miss M. M. Holdridge, Modesto; Larowe Milling Co., Los Angeles; Millbrae Dairy, Millbrae; A. W. Morris & Sons Corp., Woodland; B. E. Nixon, Yountville; Pacific Dairy Review, San Francisco; Palo Alto Stock Farm, Palo Alto; Sacramento Clearing House, Sacramento; Somers & Co., San Francisco; Sperry Flour Mills, Stockton; State Holstein Breeders' Association, Chino; State Jersey Breeders' Association, Stockton; F. Stenzel, San Lorenzo; Western Creameries Co., San Francisco; G. W. Wilder, Redlands.

It will be awarded as follows:

Herd Prizes.—For the highest production of butterfat by ten cows in a herd during ten consecutive months:

	1st Prize	2nd Prize	3rd Prize	4th Prize
(a) Jerseys or Guernseys	\$300.00	\$200.00	\$100.00	\$50.00
(b) Holsteins	300.00	200.00	100.00	50.00
(c) Grades and other cows not included in groups (a) or (b)...	300.00	200.00	100.00	50.00

Individual Prizes.—For the highest production of butter-fat by a cow during ten consecutive months:

(a) Jerseys or Guernseys	\$200.00	\$100.00	\$50.00	\$25.00
(b) Holsteins	200.00	100.00	50.00	25.00
(c) Grades and other cows not included in groups (a) or (b)....	200.00	100.00	50.00	25.00

(Continued on page 136.)



"THE BULL IS MORE THAN HALF THE HERD."

An experiment station bull sired cows which averaged 153 pounds more butter fat in one year than their mothers did. The highest amount of prizes for any one purpose in the California State Dairy Cow Competition is \$400 in monthly prizes of \$25 each, offered for the highest average production of butter fat by five cows in a grade herd headed by a purebred sire. The same cows may compete only once for this prize.

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EDITORIALS

THE WEEK.

WITH the current activity in crop-gathering and selling; with the gloriously moderate temperatures prevailing and contrasting with the fierceness of the extremes east of the mountains; with the political primaries doubling the delights of election day, and with war becoming cooler on this hemisphere as it waxes hotter on the other, the Californian has no excuse for discontent nor dullness. There is, in fact, quite the opposite of these conditions prevailing. Most crops are making a better out-turn and commanding better prices than expected, and though there may be in some lines of trade less activity than operators therein would enjoy, the outlook, when various distractions shall have passed, is certainly very gratifying. Though the year will be counted quiet as compared with the last, which was of course notable through our effort at world entertainment, it will be a year of notable gain in self-confidence and understanding for California—a good preparation for the new conditions which will follow the attainment of peace in the world. During the period of relative leisure after the harvest, there should be quiet thought and discussion of the problems of industry and citizenship which will arise for consideration by the next Legislature, and a little more effort made than usual, perhaps, in the selection of legislators in November, who shall properly represent the fundamental interests and aspirations of the State.

HOW MANY FARMERS FAIL?

SOME of our contemporaries are lambasting each other for things they have printed about the percentage of farmers who go to the bad financially. We have not the exact exclamations to cite, but, as we remember, one journal said nearly all people who go on land go off again, worse for their excursions, and therefore the government should undertake to get them on right and show them how to stay on, or else prevent them from getting on in the first place—and then gave us a column or so of paternalism. Another journal denies the allegation that nearly all farmers fail; that, if they did, they would have no credit for anything instead of the good credit standing which they now enjoy—and then gave us a column or so of anti-paternalism. Now, as to the issues between these two dromios of the near-farming press, one needs but a little common sense to reach a workable distinguishment. Manifestly, the first declaration, which exploits the universal failure of farmers, is based upon the all too sad experiences of assisted farmers whom over-zealous subdividers have planted on poor land, with neither farming knowledge nor sufficient capital to work with, by convincing them that knowledge was not necessary and by taking away from them all the money they had, in partial payment for the land. The fundamental fact is that not one man in a thousand can farm successfully without knowledge or money. Incidental facts are that the land was often poor, over-valued, and unready for cropping. These incidental facts, even though grievous, might be overcome if the men

knew how to work and had money to work with—but the fundamentals are indispensable. Naturally, statistics drawn from the experience of men who have been staked out on land without these fundamentals, will show a very great preponderance of failures and nearly everything which can be reasonably said about the humane duty of the State to guard her unwary wards against imposition of this kind is warranted. They may have to be protected against imposition by interested fleecers in some cases; we are sure they should be protected against their own delight in being imposed upon, and the general public should be punished in some way for prescribing farming as a pursuit for restless people with empty heads and pockets. Of course figures of farming failures based upon the experience of such people should not be made to apply to farmers as a class nor to farming as an occupation. When that is done, it is perfectly just to say that the true standing of farmers among the industrial classes of the country is wrongly impeached. It was true a few years ago, and we believe there have not been enough escapades of over-the-wall intruders to change the fact that the percentage of failures among American farmers was lower than in any other occupation of men. It was of the farmer that the villager said: "His word is as good as his bond." It was the farmer's endorsement on the villager's note which made the country banker mellow. It was for visiting farmers' notes that sharks jostled each other in the dark city waters. It is, of course, a great mistake to claim that our real farmers, who have used their land wisely and generously, and who have labored intelligently in ways which they understand, have been otherwise than successful in greater percentage than have men in other occupations. They are not asking for special privilege. Their claim is for fair play; they ask protection only from those who entrench themselves between the farm and the market and take, say, three-fifths of the consumer's dollar instead of one-fifth of it. Although they have carried this handicap for generations, farmers have always been the most dependable and financially the soundest class of our industrial population. They have succeeded because they have had the largest endowment of practical wisdom and of persistent, self-denying work.

THE PROPER ATTITUDE.

THE persistent enemy of good, dependable, successful farming is the gambler, and "gambler" is the name of a genus, with many species. It is a genus of parasitic fungi with very grotesque forms, such as the "hoss-trader," the shell-artist, the gold-brick conspirator, and the like. These fungi have also more elaborately organized forms: the promoters of wild-cat ventures, the vendors of expensive uselessness for the farm and the farm home; the gamblers who make farm products a foot-ball for kicking by those who buy and sell nothing but scraps of paper. More recently farming has been widely exploited as an arena for action by new experts in social economy, some of whom are sincerely philanthropic, others politically altruistic. And yet, the basic conservatism, financial dependability and secure success of farmers as a class, remain firm and will not be seriously shaken. And this basic character will always remain because its collapse would wreck the world. No matter how far ambitious agitators may push the pendulum of honest and successful farming policy, one way or the other, the accumulating backward force of its return to its center of gravity in established economic order, will mow them down. Therefore, in this time of many half-truths and doubtful deductions, it is perfectly safe for the farmer to give diligent heed to their proponents and to join in a general effort to demonstrate whatever truth there may be in them. It is the only way by which farming can be advanced to full understanding of its relations and forced to occupy its place in the sunlight of fair play among the activities of mankind. It is not true that "he who hesitates is lost," as these new agitators for economic progress exhort us, but it is true that he who shirks his share of the advancement efforts which are now being made will to that extent retard the attainment of things eminently to be desired. Get into the middle

of the fight and strike hard for what is right as you see the right!

GRAIN-GAMBLING IN THE NORTHWEST.

THERE have been many efforts in the Middle West during the last few decades to stop "grain-gambling," which is generally understood not to mean speculation in grain buying and selling, but speculation in paper tokens for grain, which ends in paying margins one way or the other and which has no more relation to real property than the writing or printing of the name thereof on the paper token. These efforts to stop this fictitious trading have accomplished so little that a stronger movement has now arisen. It is announced that North Dakota farmers have launched a nation-wide fight to stop gambling on grain and farm products in all stock markets of the United States. The movement is by the Non-Partisan Political League of North Dakota, which has just swept the State of North Dakota clean, in the recent primaries—nominating all their State candidates. The effort was begun by farmers, and was supported by labor union men of North Dakota's cities. The organization was for the single object of the complete abolition of all gambling with grains and foods. The leaders are enrolling farmers of Minnesota, and when that State is swung, it is planned to make the movement national. It is eminently fitting that these great grain States should attack this fictitious trade and they seem to be doing it in a way to win. Its evil effects are more real to them than to us, for grain is relatively small with us at present, and yet the prohibition of such trading may have far-reaching effect. We have forms of food gambling which are exceedingly grievous in their effects and which arbitrarily and unreasonably influence the value of a food before it actually comes into existence at all. It is purely fictitious because it aims to deal with the value of a thing which may never exist or may exist beyond all reasonable expectation. Therefore, it is a scheme of a go-between to rob either the producer or the consumer, or to wreck himself, as the case may be. It is not legitimate trade and everyone should be protected against it.

THE PRODUCER AND HIS DEFENSE.

WE DO not underrate the importance of early selling. It is advisable that a product should move quickly, and that some one should be ready to push it into consumption. Advance selling as soon as a reasonable conclusion can be reached of the probable amount of a crop is a good thing in its general results if one enters upon it wisely and with a good motive. Indeed, if the motive is fair trade, he may legitimately take his chance on buying or selling on what he considers his prophetic power, resulting from his study or experience in available supplies and demands. But there ought to be some check placed upon a man's willingness to gamble for the clear purpose of depressing values of others' property through some break which his bluff may produce. Such operations are in restraint and demoralization of legitimate trade. They are surely immoral even if they should never be made illegal. We have recently seen such things undertaken with almonds and prunes, the influence of which, so far as they have any, will be to rob some one of what fairly belongs to him as the fair recompense for his investment and his labor. Perhaps this infringement of another man's rights cannot be reached by law, but it is not therefore incapable of prevention. It seems to us the available force against such dynamiting of legitimate trade lies in producers' co-

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco, for the week ending at 5 p. m., August 1, 1916.

STATIONS	Past Week	Rainfall Data		Temperature Data	
		Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka .....	.02	1.31	.11	62	48
Red Bluff	0	1.02	0	98	62
Sacramento	0	.06	0	94	54
San Francisco	0	.03	.01	70	50
San Jose	0	0	0	90	44
Fresno	0	0	0	100	58
Independence	0	0	0	98	—
San Luis Obispo	0	0	.01	80	44
Los Angeles	0	0	0	84	58
San Diego	0	.02	0	74	60

operation. If producers can, by association, keep these flighty dealers from getting goods below a reasonable and warranted price, their gambling on the chances of getting supplies below value from handicapped, weak, or timid growers will be reduced to amounts which will be negligible. This is what the organizations with control and capital are now doing or aiming to do.

PROCLAMATION WITHOUT POWER.

SUCH proclamations may, possibly, do more harm than good; they are apt to do nothing but supply the enemy with targets to fire at. If we are not mistaken, the recent convention to declare a minimum prune price for 1916 has operated about in that way. The meeting declared resolutely for 6 cents, but we emerged from the sound of the discussion with the impression that, unless one really wanted prunes, it could be dangerous to offer some fraction below 6c. to those resolute people, in corners of the fence where you might encounter them singly. It seems to have turned out that way, if the gossip we hear is at all true. The price was a bluff because there was no power behind it. It was a public bluff, and therefore more impotent than a quiet, determined attitude, assumed by many people privately, which one may keep coming up against and find his attack constantly weakening. Now they say that buyers have stopped bidding, and some people are getting alarmed because buyers did not follow them home and offer 6c. Buyers are not that kind of fools, nor are the Eastern dealers upon whom they plan to unload. A bluff suggests a bluff and that is what the growers have been getting since the meeting, unless we are very much mistaken. The growers' committee is not a control organization; it is an advisory affair. As it has no power nor control, it would have been better not to start machinery which needs power to be effective. The public meeting seemed a good way to get broad, advisory data, and yet we are quite sure the committee did not learn a new thing about growers' desires by the assembly. They could have gone on quietly securing facts and have quietly suggested that 6c. was the point aimed at by many growers. That is all the convention did, but it did that most offensively. It invited just the attitude which buyers afterward assumed. A confidential, advisory mention of 6c. by the committee would have made every prune grower just as wise, and it might not have arrested the bidding which, we understand, was quite brisk just before the convention.

There seem to us two lessons to be drawn from this recent experience:

First, it is idle to think of driving an enemy from his entrenchments by simply filling the sky with "light bombs" if you have no high explosives to drop on him. It simply shows him where you are so he can yell at you to go to a hotter place.

Second, this little game of bluff and bluff does not have the slightest effect on the real value of prunes. It is still long enough before the crop is in to do all the early business that still remains to be done. If the growers can stand the buyers' bluff as well as the buyers' stood the growers' bluff of June 23, there will be no danger of the sky falling. But, of course, to right wrongs and to insure fair trading, there must be organizations with all kinds of power to support their proclamations.

Unirrigated Alfalfa.

To the Editor: I am anxious to grow, if possible, alfalfa on a thirty-acre field where irrigation in summer is impractical.

The field grows wheat, sown in March, from forty-two to seventy-five inches tall and never fails. The land is deep rich loam with some gravel mixed all through it. The field slopes at the rate of about two per cent and is uniform in slope right down to winter flood water—the highest part of the field being about eighteen feet above high water mark. Water never stands on any part of the land. Annual rainfall is about forty inches beginning in September and ceases about June 15th. Frosts sufficient to kill tomato plants do not usually occur before November 25th. Elevation about 1000 ft. Would you advise fall sowing

and how about Turkestan, Grimm or common alfalfa?—H. M. C., Covelo.

You ought to get plenty of alfalfa without irrigation under the conditions described and we should sow the common variety. If you can plow the land dry, leave the furrows up and harrow down and sow as soon as you get fall rain enough to wet down well. With the frostless fall you speak of, you ought to get growth enough to go into dormancy well and then, while dormant, it does not matter how much water you get on it. But if you sometimes get sharp frosts much earlier it is better to fear them than to trust to their not coming. With rains as late as June you are fairly sure to get a good stand from March sowing, if you can then count on frost-freedom. Alfalfa will not stand frost like wheat, and with rains coming so late you can wait for later sowing than you name for wheat. Either fall or spring sowing ought to work well with you—if you have luck enough to have things come as you expect.

Irrigating Fruit Trees.

To the Editor: Should fruit trees be watered by the square check system, allowing a square for 4 trees, or should they be watered by the little streams of water running through the rows between the trees, making about five or six furrows to hold the small flow? We can only get water about twice during the watering season for trees, so this will make quite a difference in the system used.—H., Modesto.

The system of irrigation which is best for any piece of ground depends upon the slope and character of the soil. Where the furrows can be drawn in such a way that small streams of water can move slowly through them and the soil is of such character that the water will move sideways through it, as well as downward, the furrow-system is best, because the soil can be evenly moistened below without wetting and puddling the surface. If, however, the soil is so light (open or sandy) that the water goes downward too fast and too far, without moving sideways sufficiently, it is necessary to use checks or basins and use a large head of water to fill them quickly so that the downward movement of the water may reach all the soil mass included in the check. In all cases thorough cultivation must follow.

If you have to use a large head of water for a short run you may be obliged to use checks. A smaller head and longer run favors furrows, if the soil is right for it. This is a large subject. It is discussed in details, with methods and reasons, in "California Fruits and How to Grow Them."

Dandelions in Lawns.

To the Editor: Can you suggest something to rid my lawn of dandelion? I have had it cut off several times and it seems to come up as thick as ever. I hate to dig the entire lawn up, it's so hard to start again.—L. G., Merced.

We have to confess that dandelions are not easy. We have just dug over, for re-seeding this fall, an old lawn which seemed to have as much dandelion as grass. We have also two other pieces which are under the cutting-out treatment and they have at present a hopeful look which has cost us much work. Where the neighbors fill the wind with taubes carrying seed-bombs the outlook for a dandelion war must be doubtful.

Cutting-out is waste of time, unless you cut deeply so as to bring out several inches of the fleshy tap root. This is done with a chisel or an old table knife, squared and sharpened at the end so you can plunge it in obliquely and cut the root several inches below the surface. It is then only a question of keeping at it, for a plant cut and pulled out that way cannot start again.

There comes a claimed demonstration from Colorado and Minnesota that dandelions can be killed and cleaned out by spraying once a month during one summer, with sulphate of iron, 1½ lbs. to a gallon of water. This must be shot forcibly into the lawn with a forceful spray pump—not merely sprinkled on. This cannot be used on a clover lawn, for it will kill clover or any other broad-leaved plant, but the grass will survive such treatment. The lawn should not be watered for

three days after the copperas water is applied. We have never mustered spunk enough to try this ourselves—still it is possibly the true way for amateurs with a high efficiency-percentage.

Blooming Celery Plants.

To the Editor: I am growing celery in a trench fully a foot deep and it looks bonanza and promises a performance to beat anything purchasable—but a number of the plants are coming into bloom. Do you suppose the seedlings which were given me were sown too early? I do not think they have suffered from dryness since planted.—C., Napa.

It is possible that the seed was sown too early and the plants went through a dormant period—their growth being arrested by cold or drouth. It is also possible that the seed was too old or was taken from poor plants. Such seed is apt to produce plants lacking vigor, which are liable to disease, to bloom-breaking, etc. The only way to get good celery is to use fresh, selected seed and keep the plant going strongly, and then transplanting does not upset its first impulse toward strong leafage. Probably poor seed has caused commercial growers more loss and vexation than any other single difficulty they have encountered.

Rose Leaf Cutting.

To the Editor: Something is simply riddling my rose bushes, but I can find no trace of the pest. The inclosed leaf is taken from a climbing rose and was picked about eight feet from the ground. Is it possible that a worm, living in the ground in the day time, travels even much higher than that every night to eat the foliage? If you can tell me what to do for it, I shall certainly appreciate it.—H. A., Tulare.

The clean-cut circular or half circular pieces taken from your rose leaves have been carved out by leaf-cutting bees (megachile). They are of the bustling form of bumble bees but smaller. They do not eat the leaf-pieces but make cells of them, for their larvae to grow in, by placing them in layers and gumming them together, in hollow plant-stems or in cracks in the carpentry of your house. They are probably very thankful to you for growing such nice rose leaves so near to the place where they wish to use them. They cannot be called pests. It is better to use Josh Billing's classification and call them "interestin' little cusses." Just watch for them and see how quickly they can snip out a piece of leaf and fly away with it.

Strawberry Crown Borer.

To the Editor: We have a bed of strawberries with a sub-irrigation system. The plants were healthy, but before long, plant after plant seemed to die. We dug up one plant and a borer was in the root. Two-thirds of the plants died just that way, but a dozen or more plants at the end nearest the faucet lived, and seem very strong and healthy. What can we do to get rid of that borer, or worm in strawberry roots?—E. G., Vallejo.

The insect called the crown or root borer is destroying your strawberry plants. It is quite a common pest and does much injury and it is not easy to fight. Removing and burning plants as soon as you notice their failing symptoms will reduce the multiplying of the insect. This can best be done in February—a little before the perfect insect appears to lay eggs for more worms in April. By this time of the year the eggs are probably all laid and new grubs are beginning to work. If you can border the bed and keep water standing on the plants for four or five days, it will kill the worms. This can be done any time during the fall or early winter, for the grubs are growing for months in the root-crowns. Where such submersion is not possible, about all you can do is to take out and burn all plants which are going wrong.

Stump Blasting.

In answering a question about removing stumps with powder we inadvertently neglected to mention the Hercules Powder Co., Chronicle Building, San Francisco, as publishers of a desirable pamphlet describing how this work can be done. The Hercules people have been long at the effort to make explosives useful in farming, and should not be overlooked.

Citrus Blast---a New Disease.

[Written for Pacific Rural Press by R. W. Hodgson, Berkeley.]

On returning to Oroville in May, 1915, the writer was struck by the wide-spread occurrence of a condition ascribed to a late frost by some growers, and characterized by others, where no frost could have occurred, as a "heavy leaf drop." This condition was found due to neither of these causes, but was apparently the result of the same disease which had been first noticed three years before. The same peculiar canker was prevalent all through the mature trees. Throughout the remainder of the season this trouble was studied.

Causal Organism.—Under the personal supervision of Prof. R. E. Smith, investigations carried on recently have demonstrated the causal organism to be a bacterium, probably of the genus *Pseudomonas*. The disease is technically defined as a bacterial wilt of citrus.

Disease Characteristics.—Infection is apparently confined to new spring growth, and occurs chiefly at the junction of the petiole and blade of the leaf. It also occurs at the tips of the very young leaves and tender shoots. Once established, the disease progresses rapidly down the shoot toward the older wood. Only the new tender growth is affected, the older limbs apparently possessing greater resistance. The young shoots are often killed back to the older wood including a portion of the bark about the base of the infected shoot. At these points the characteristic cankers are formed. It is not unusual to find a branch several feet long with every node infected.

Leaves Hang On.—Upon infection the leaf turns pale yellow, then darkens irregularly in spots and wilts in place, where it later shrivels and dries, still hanging to the shoot. If the disease is virulent and conditions favorable, it may attack small branches of the previous season's growth, killing them back several feet.

The dead area about the base of the infected leaf or shoot varies greatly in size, and is ordinarily more or less irregular in shape, frequently extending along the stem some distance. On younger growth, girdling is apt to occur and the

shoot dies back to the point.

The disease spreads with remarkable rapidity. Only a few days of the proper weather conditions are required for serious damage.

As the dry season approaches, activity is retarded and in mid-summer the disease is entirely quiescent. The wilted shoots and leaves shrivel and dry. At this season they may be found as veritable herbaria of various fungi among which are the common withertip and gray mold. The line of separation between healthy and infected tissue becomes very clear-cut and definite. Frequently in early summer, a pinkish, resinous gum is exuded from the cankers. These, as well as all the dying or dead tissues, take on a characteristic dark red color, and are sunk below the surface of the healthy tissue. This dead wood, as it dries, becomes very hard and tough. The healing process begins and, in the wounds, callous material is developed which raises the dead tissue up in the form of scabs. These are sluffed off in the course of time leaving very characteristic scars which may be visible for several years.

A Peculiarity.—The infection does not seem to penetrate into the wood. Indeed, in some cases, the cambium layer is not killed, which is evidenced by the formation of callous material in the center of the wound as well as about the edges. Where trees containing a large amount of weak, twiggy, interior brush are badly attacked the bark rots away leaving the interior of the tree full of dead white twigs which may resist decay for several years.

Later in the season the effects of the disease are masked by the new growth. To find it at this time one must examine those branches under three-quarters of an inch in diameter for the cankers.

Pear Blight Methods.—One of the large holdings in the Northern Citrus district is now using pear blight control methods in an attempt to eradicate the disease. We may expect, as is the base in all bacterial diseases, to find efficient control difficult, but it is hoped that observations and experiments made this season may lead to some cheap commercial method.

What Eastern Fruit Buyers Said.

"Properly packed, there is practically an unlimited market for early California fruits in the East."

[Written for Pacific Rural Press by Prof. W. L. Howard, University of Cal.]

Last winter, while in the East, I made a special effort to investigate conditions surrounding the sale of California fruits, particularly green apricots, peaches, and plums. I visited most of the prominent dealers in Chicago. The opinions of the president of the auction there and also the auctioneer himself were typical of what I heard. These gentlemen told me it was a shame the kind of packing many of the California growers were doing. Properly packed, they declared that there was practically an unlimited market for early California fruits. Many of the retailers in Chicago, they declared, were handling much less early fruit than formerly, because many of their

best customers had quit buying. The reasons were always the same—that only the top layer of any basket of the very early fruit was fit to eat.

Many of the customers of that early fruit are perfectly willing to pay any reasonable price, and even an unreasonable price, for fruit provided they get something for their money. Some of the dealers told me that they had traced shipments direct to the consumers and found that they had become discouraged and had quit buying.

The president of the auction and other prominent commission men declared that they would be glad to co-operate with the state authorities in California for the improve-

ment of our fruit pack. J. Ellis Slater assured me that if we had a central authority here who would take the matter in hand, he would be glad, at his own expense, to send to that authority packages of fruit that he was sure he would receive this spring, provided that state officials would follow up the case by taking the matter up with the grower who packed the fruit and try to remedy the situation.

"California" Magic.—I asked several commission men why it was they had been able to sell California fruit so long, if it was packed so badly as they claimed. The answer was always the same—that in the past they had been able to sell practically any-

thing that was labeled "California" or "California grown." This impressed me very much, and I discussed the matter with the auctioneer. He assured me that too many Californians had very little appreciation of the value or prestige of the name California on a fruit package. He gave it as his opinion that thousands of people in the East, in the past, have bought California fruits that were not fit to eat, but while under the hypnotic spell of the name on the package, would take a bite of a half-grown apricot or peach, close their eyes, conjure up visions of orange groves and gold mines, and persuade themselves that it was good. However, when the fruits were placed

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on the table and the package with the magical name was out of sight, the spell would invariably be broken and neither the owner of the household nor his guests were able to get any pleasure out of the fruit, and hence they had quit buying it. When asked if we could redeem ourselves by sending a better grade of fruit, he unhesitatingly said that we could.

MERCED FIG DRYING.

[Written for Pacific Rural Press.]

Adriatic figs should be picked from the ground as soon as possible after they fall and not later than three days at the most, according to D. R. Oliver of Merced county, who farms the 13-acre Rodger orchard, one of the oldest and best fig orchards in the county.

Lug boxes are used to pick in and directly after gathering 75 full boxes are put into the sulphur house, where they are allowed to stand over night, or if badly rushed, six hours. For that number of boxes two quarts of sulphur is used, equivalent to four or five pounds.

When taken from the sulphur house the figs are put on trays which are set in the sun for one to one and a half days in warm weather. After that they are sorted and dumped in the bins, care being taken to keep the pile in the bin level so that they all go through the sweat in the same degree. By keeping them stored in

these bins some time before shipping they have more weight and sugar up better.

Calimyrna figs receive much different treatment by Mr. Oliver, than the Adriatics, no sulphuring being done in this case. Instead the figs are put directly onto trays after dropping and these trays are stacked in order to protect the fruit from the hot summer sun, which would otherwise dry them out too quickly. Late in the season it is sometimes deemed advisable to let them lay in the sun instead of in stacks.

The time that they are left in the trays depends upon the weather, four days being sufficiently long in the hottest and a week being required in cooler weather.

As soon as they are dried on the trays they are taken to the bins and also allowed to go through a sweat, this method making a more pliable skin and less toughness according to Mr. Oliver. Late in the fall it is more difficult to dry Calimyrnas on account of their getting sour on the trays if the weather is cool or damp.

Dipping and sulphuring Calimyrnas is a waste of time, thinks Mr. Oliver; in fact, he finds that buyers prefer to have them just as near to the way they come from the tree as possible and Mr. Oliver's way meets that requirement.

The fig season on this ranch starts about August 10 and continues till the middle of October, about 50 tons of dried fruit being harvested per year from the 13 acres of Adriatics.

DRYING PEACHES.

The California Peach Growers' Association wishes to raise the standard of the California dried peach. It therefore requests that each grower make an especial effort to produce clean, bright fruit.

The final settlement between the Association and the growers will be on the basis of grades. The better the fruit, the higher price the grower will get for his peaches. As some of our growers are inexperienced in the proper methods of drying peaches, we make the following suggestions:

Do not shake the fruit from the trees. Pick carefully and at the proper time. Fruit picked too green will have neither weight nor flavor; if too ripe, the result will be a lot of slabs.

Peaches must be properly sulphured. This condition is attained only when the cup in the up-turned half of the peach is filled with syrup. No definite rule as to the amount of sulphur required can be given. This depends on the tightness of the sulphur house and the condition of the fruit. Use only the best quality of sulphur.

Do not spread the fruit on the dry-ground after four o'clock in the afternoon, but rather leave it in the sulphur house over night. The dampness of the night will darken the fruit.

Do not use an alfalfa field for the dry-ground. Green foliage such as grass or weeds under the drying trays will darken the fruit. Use a clean dry-ground.

When the fruit begins to shrivel, the trays should be stacked and the fruit allowed to become thoroughly dry in the stack instead of on the ground.

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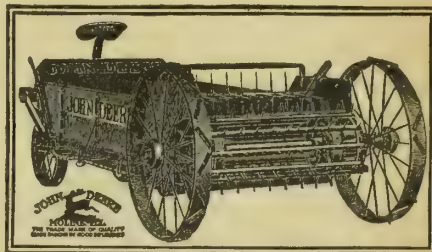
BEATER drive works on the principle of a horse power. No clutches, no chains, no trouble. Mounting the beater on the axle (a patented feature) does away with half the types of castings.

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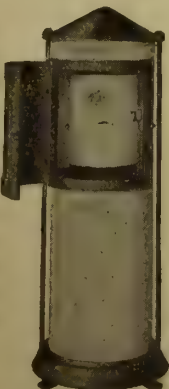
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State Crops and Market Notes.

[Written for Pacific Rural Press.]

The following table shows as accurately as possible the condition of the total State crops. Figures are based on estimates of horticultural commissioners reported to Deputy State Horticultural Commissioner Geo. P. Weldon.

It is evident that a 90 per cent condition of peaches in a county which produces 5 per cent of the total State crop does not mean so much as a 90 per cent condition to a county which produces 29 per cent.

To arrive at the true State averages, take pears for example.

A Sacramento county normal crop is .18 of State normal tonnage. Sacramento county reports .68 of normal crop. .68 multiplied .18 equals .1223 of State normal tonnage. If that is 10,000 tons, then Sacramento county produces 1124 tons this year. Adding similar figures for all counties producing over 2 per cent of the normal State tonnage, we have .5028 of normal State tonnage as the prospective tonnage this year from counties producing 80 per cent or .80 of the State tonnage. Dividing .5028 by .80 we find that the average condition of all the acres of pears in all of the counties which produce a total of 80 per cent of the State normal crop, is 62.85 per cent of normal. It is reasonably accurate to assume that the crop in the other 20 per cent will average the same.

STATE AVERAGE CROP CONDITIONS.

State average is assumed to be practically the same as the total true average for all the counties producing normally over 2% of the State normal crop.

FRUIT	% of total normal State tonnage produced this year in these counties...	% of total normal State tonnage produced by counties which produce over 2% of it.....	Total average condition of crops in these counties: % of normal.....
Almonds	76	45.40	59.7
Apples	90	75.75	84.2
Figs	89	86.40	97.0
Lemons	97	87.30	90.0
Olives	95	67.95	71.5
Oranges	96	79.40	82.7
Peaches	85	59.00	69.4
Pears	80	50.28	62.85
Plums	56	40.45	72.2
Prunes	82	44.40	54.1
Walnuts	98	81.80	83.5

Note: Solano county excluded because there is no report.

Grapes.—The first shipments of Malagas and Thompson Seedless were made late in July, Horticultural Commissioner Roullard having nine inspectors in the field and three more to add as soon as shipments get heavier. All of these inspectors have either motorcycles or automobiles and spend all of their time at the various packing houses in their respective districts. They do not stay at any one packing house long, neither do they state when they will be at certain places. Some rejections have been made on account of green fruit.

Mildew has already started to appear in the county, though only to a limited extent. Notwithstanding the fact that the season is about two weeks early this year, the sugar content is exceedingly good. Shipments of Thompsons will be materially reduced on account of the high price of raisins of that variety.

According to W. P. Giffen, where

grapes are only moderately affected with mildew they have no serious effects on the raisin market. Where it is bad, the grapes are not made into raisins at all, so taken as a whole mildew does not affect the raisin market.

The raisin people are all feeling good. The crop will be some lighter than it was last year. No holdover is anticipated. No exporting has been done for several months; but it is thought that some may soon be shipped. He attributes present good markets to advertising, general employment at good wages all over the country, and the lack of importation of currants and raisins from other countries on account of war. He thinks there is no question but that Thompsons will be heavily planted the coming season as they have been in the past two years on account of the price of seedless raisins. Whether they are the most desirable is purely a question for everyone to decide for himself.

State horticultural commission reports indicate full crops in Fresno, Tulare, Kings, Kern, Los Angeles, San Diego, San Bernardino, Marin, Merced, and Yuba counties. Sutter raisin varieties 90, table 100; Yolo 80 and 80; San Joaquin table 50; Sacramento table and raisin 25; Riverside table 90; Madera raisin 100, table 80; Colusa table and raisin 75, and Butte 70. Stanislaus reports 125 per cent of all varieties.

Peaches.—Fresno county Horticultural Commissioner F. P. Roullard says that little-leaf has affected peach crop 20 to 30 per cent this year. He figures that the crop in this county will be 55 to 60 per cent of normal. A good many peaches have been shipped from this county as fresh fruit this year, these shipments just being completed the last of July. Muirs are the only variety that are a full crop this year in Fresno county.

The average crop of dried peaches for the past five years has been 26,000 tons. The average for the last three years has been 30,000 tons and it is estimated by Manager Niswander of the Cal. Peach Growers' Ass'n that this year's crop will be about 25,000 tons. There are 41,000 acres signed up in the Association, but nobody knows what the total acreage of the State is. It is estimated around 50,000 acres.

Peeled Peaches.—There have not been over three or four carloads of peeled dried peaches sold in any one year before, because of the excessive cost of peeling, making them sell at 12 to 15 cents a pound. If some mechanical method of peeling them can be devised, and the Peach Growers' Association is working toward that end now, 75 per cent of the crop could be sold in that manner, at not to exceed 10 cents a pound.

Prunes.—While the prune crop in our crop report table looks small, our own observations and reports would indicate that the crop will not be so light as anticipated. Props and trays have been sold this season and are being freely used in Santa Clara Valley. Individual estimates from over two hundred prune growers, made to sales manager W. S. Breton of the Cal. Farmers' Union, average

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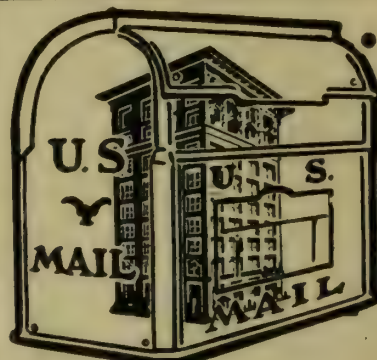
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well over 80 per cent of last year's crop. These estimates have been rising with each report. Very little aphid or cracking has occurred, and not a lot of dropping. Contra Costa was severely damaged by cracking but that county produces less than 2 per cent of the State crop.

Present Prices Do Not Indicate Value. — Notwithstanding the increasing crop estimates, there seems no reason to change earlier marketing decisions. About three-quarters of California prunes are still in the growers' hands. There seem scarcely enough prunes in the world to supply a normal demand, and growers will observe that the downward tendency of prices occurs often at this season without indicating what the price will be when harvest

is over. "No Eastern dealers will buy on a falling market, but farmers help a falling market down by becoming panic stricken." Packers received a lesson last season on selling short, and they are said to have few orders to date because they are afraid to sell fruit that they don't own, low enough to tempt Eastern jobbers to speculate. Western packers can't sell short unless Eastern jobbers think the price will rise enough for them to make some money. Growers succeeded in raising the 3 1/2-cent offers last year to 5 cents, and the crop was cleaned up. With a smaller crop this year, draw your own conclusions. If you organize rightly, you will control all speculation next year and secure right prices.

Rural Credit Loan Board Appointed.

The next step toward installation of rural credit under government auspices has been taken.

WASHINGTON, July 27. — President Wilson today nominated Charles E. Lobdell of Great Bend, Kas.; George W. Norris of Philadelphia; W. S. A. Smith of Sioux City, Ia., and Herbert Quick of Berkeley Springs, W. Va., as members of the Farm Loan Board, created under the rural credits bill recently passed by Congress. Secretary McAdoo is an ex-officio member of the board.

The President hopes to have the nominations confirmed quickly by the Senate in order that the organization of the rural credits system be perfected without delay.

Lobdell (Republican) is a student of farmers' problems and has had extensive experience in loans on farm lands. He was a farmer before studying law, served in the Kansas Legislature for ten years and was Speaker of the Kansas House in 1895. In 1902 he was elected a Judge and served on the bench for nine years, resigning to become president of a bank at Great Bend.

Norris (Democrat) is a graduate of the University of Pennsylvania and has been successively a newspaper man, a lawyer and a banker. In 1911 he retired from the banking business to study social and economic questions. Later he became a director and deputy chairman of the Federal Reserve Bank of Philadelphia.

Smith (Republican) is a farmer by occupation, for the last year has been an expert in farm practice in the Department of Agriculture, and has had extensive experience in farming problems.

Quick (Democrat), until a few months ago, was editor of Farm and Fireside, and for many years has devoted himself to a study of rural credits and other farm problems. Early in his career he taught school and practiced law, and later was general manager of a telephone company in Nebraska and Iowa.

GRASS FOR WET LAND.

To the Editor: I have about 10 acres that has been sub-irrigating more each year until now a little is under water, and some of it only a foot down to the water table. As one drives over it, if very wet, a team can scarcely get through, but after it has been travelled or pastured some time, it does not get soft even if under water for months. Beans planted this year are getting yellow. What kind of grass can I

sow for good pasture; when should it be sowed; how much per acre, and will it have to be resowed every year? Perhaps I will put sheep on it.—E. L., Winton.

[Answered by Prof. P. B. Kennedy, University of California.]

[The grasses most likely to succeed under the conditions of soil and moisture that you describe are the Italian and perennial rye grasses, and red top, all of which can be purchased on the market.

The best time to sow would be in the fall of the year if the winters are mild, with rain and no snow; if there are cold winters, with intermittent snows and freezes, and cold and rain, then it would be almost necessary to sow them in the spring as early as the preparation of the land will permit, and after the worst freezes are over.

Rye grasses are sown at the rate of about 35 pounds per acre, usually broadcast. Red top varieties from 10 to 20 pounds per acre, according to the quality of the seed purchased. No. 1 grade, which contains practically pure seed and no chaff, required 10 pounds; No. 2 grade, 15 pounds; No. 3 grade about 20 pounds per acre. This last mentioned must be very lightly covered.

Probably about 10 pounds Italian rye grass, 10 pounds perennial rye grass, and 15 pounds red top would meet your requirements and give you a satisfactory pasture.]

[If you pasture sheep on wet land look out for foot rot. It is considered poor practice among sheepmen.—Ed.]

ARSENICALS AND DIABROTICAS.

To the Editor: What quantity of arsenate of lead, "Corona Dry," should be used when the directions call for one tablespoonful to paris green? Is there any way to rid dahlias and Shasta daisies of the little "green lady-bug," greenish yellow, black spotted wings, that devour the flowers almost as soon as they develop? Could Corona Dry or paris green be used in a weak mixture that would not be dangerous to children, and yet do away with the "lady-bug"?—F. J. H., Los Angeles.

Geo. P. Gray, who has charge of the insecticide and fungicide laboratory of the University says: "Corona Dry Arsenate of Lead contains about 30 per cent of arsenic in the form of arsenic pentoxide. Paris green

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contains a little over 55 per cent of arsenic in the form of arsenic trioxide. Roughly speaking, when the formula calls for a tablespoonful of paris green, use two tablespoonfuls of Corona Dry Arsenate of Lead."

Concerning diabroticas, which are the insects you describe, E. O. Essig, of the entomological department of the University, says: "The best method for controlling the diabrotica is the application of a neutral lead arsenate 3 lbs to 50 gallons of water. This seems to act as a repellent, and experiments made by myself are proving very satisfactory."

We cannot give you any advice about using a virulent poison in a flower garden frequented by children. You must take the responsibility yourself. With our own children and their quality of obedience (with which their mother is to be credited) we should consider it safe.—Ed.]

The Southern California Tractors Association held their meeting in Los Angeles on July 18, and decided on holding a tractor demonstration in Los Angeles county the latter part of September. The location and date of this demonstration will be decided at a meeting held in the near future, at which time a definite date will be announced.

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California Highways---Present and Future.

The State Highway Commission's "overhead" expense has been 4.41 per cent, 1820 miles of highway have been completed, including some of the most difficult projects, many sections are uncompleted for lack of funds.

[Written for Pacific Rural Press.]

At a time when Congress has just appropriated \$85,000,000 for national highways and the California State Highway Commission has spent \$18,000,000 and wants \$15,000,000 more, it is well to note what has been done and what is proposed.

The National Highway Ass'n of Washington, D. C., proposes 100,000 miles of roads to be built by the Federal Government, traversing 2030 of the 2953 counties in U. S. This will relieve the States, counties, and smaller units of the cost of these roads so their regular appropriations may be put into more permanent local work where many of them are now spending all of their appropriations in maintenance of poor roads at excessive cost.

mately \$79,000,000 was spent by all the States, counties, districts, and townships in U. S. for road purposes. Ten years later the corresponding expenditures were nearly \$225,000,000. In the present year it is estimated that \$300,000,000 will be spent on roads. Last year there were 2,445,664 registered motor cars of all sorts in U. S.—more than one per mile of rural roads.

Government Appropriation.—Of the \$85,000,000 recently appropriated by the Government \$10,000,000 goes into National Forest roads. \$5,000,000 of the remainder is available for distribution to the States this year. After June 30, 1917, the appropriation is increased at the rate of \$5,000,000 a year until 1921



A Moreland Truck Operating on a Southern California Highway.

The American Highway Ass'n furnishes the following figures: There are approximately, not counting streets in incorporated cities and towns, 2,275,000 miles of public roads in U. S. In 1904, approxi-

when \$25,000,000 will be available. This money is to be distributed to the States according to their proportion of area, population, and mileage of rural mail delivery routes. California's share this year is figured at \$151,063.92. It must be used to pay half the expense of permanent roads built and to be maintained by the States.

California's Achievements.—Under the State Highways Act of 1909, the State Highway Commission had built, up to Apr. 15, 1916, 933 miles of concrete highway (including 3 miles of concrete trestle over Yolo Basin at a cost of \$400,000), 129 miles of oiled macadam, 33 miles asphalt, had graded 395 miles more and had surveyed 2280 miles of road. Towns and cities have built their own sections. Bridges with 21-foot roadways, mostly of concrete and capable of carrying a 20-ton tractor, have been built by counties under the Commission's plans and supervision. This has included the moving of 11,750,000 yards of earth and rock @ 38 cents average, and the laying of 8,750,000 square yards of concrete pavement @ 74½ cents.

Permanence and low cost of maintenance have been considered more important than first cost. Ex-Governor Gillett said he expected the system of state highway trunk lines

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required by the State would cost over \$50,000,000; that the \$18,000,000 voted was simply to prove to the people their advantages.

Overhead Expenses.—Under the law, all books and papers pertaining to the work of the Commission are at all times open to the inspection of "any citizen of the State."

A recently issued circular of the Commission states that "out of every dollar of the \$16,119,583 expended to Apr. 15, 1916, 87½ cents went directly into the roads in materials bought at rock-bottom prices and contracts let under keen competition. The remaining 12½ cents represents every other character of expenditure including costly preliminary surveys of mountain laterals," an engineer inspector on every job, drafting and engineer's assistants, clerical force, commission attorney and secretary, office rent, drafting work in advance of contracts, equipment and stores on hand, etc., etc.

The Commission furnishes materials to contractors to insure honest composition, to eliminate contractors' profits on materials, to get the benefit of purchasing in such large quantities, and to secure a half freight rate agreement with the railroads.

The inspection to insure honest work by contractors after honest materials have been furnished by the State, is done by a resident engineer on every job; and is very expensive, but is considered justified in view of future maintenance costs.

Proposed Extensions.—The State Highways Act of 1915 was passed to provide the \$12,000,000 needed to finish the State system of highways as proposed in the first act; but uncompleted as shown in the accompanying map. \$3,000,000 are added to be applied on a county aid proposition to build eight cross-state roads, four of which connect the interior main highway with the coast. This act will not be in force until voted on by the people in November.

POWER NOTES.

Increased facilities at the State Fair for displaying pumping plant equipment will be afforded this year.

The Yuba Construction Co. proposes to show at Nevada State Fair. Nine machines are being operated around Lovelock.

California automobiles registered up to July 19 totaled 194,507. A total of \$1,927,192 has been collected in registration fees.

A Marmon car was driven from New York to San Francisco in 5 days 15½ hours arriving July 29. The trip was approximately 3400 miles.

A Hudson supersix chassis was driven 1819 miles in 24 hours on Sheepshead Bay track May 2 by Ralph Mulford. Average speed was 75.8 miles per hour. The test was officially observed by the American Automobile Ass'n.

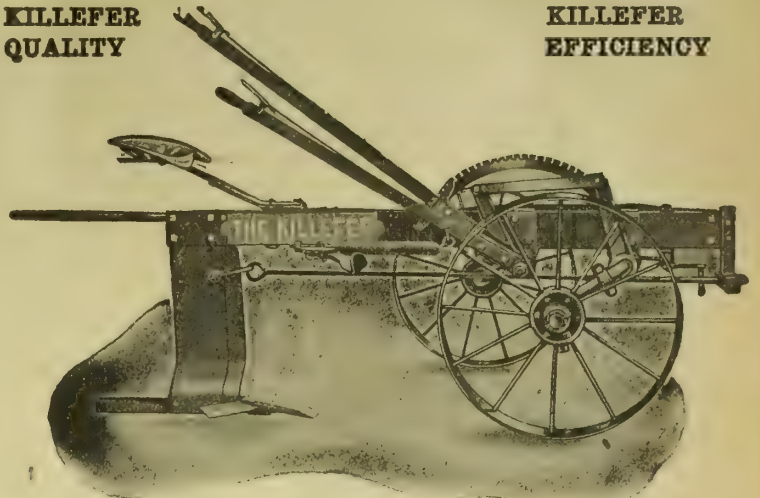
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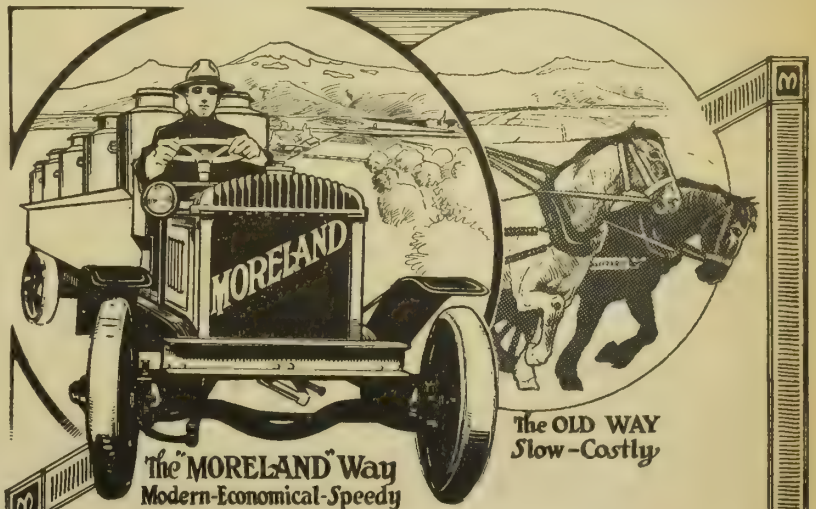
Was designed for the smaller grower where traction power was not available for handling the larger plows. The draft is very light and no more weight has been used than was necessary to give the proper strength.

The axles are large with long wheel bearing. This plow is equipped with a compound lever which enables the driver to level it to any of the irregularities of the ground. At the same time it is only necessary to use the one lever to raise the plow at the end of the row. The compound lever works in connection with a heavy coil spring, which assists materially in handling. The foot lever controls the shifting hitch and is below the frame, making it much easier on the driver than the old style.

We build this plow with either straight, sloping, or bent standards and with any style of wing or point required.

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In every business in which highway hauling is a factor, economy demands the supplanting of the horse by the motor truck. For Pacific Coast service, the Moreland is indisputably the peer of all trucks.

It is built on the Coast expressly to meet Pacific Coast conditions. It is sold direct from manufacturer to you, without middleman's profit. It operates on Distillate at about half the cost of gasoline. Being built right on the Coast, factory service and new parts are always immediately available.

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¾-ton 1 ½-ton 2 ¼-ton 4-ton

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FAMOUS LUITWIELER PUMP



Correct in every detail. No trouble. Cheaper water. Perfect satisfaction. 2 Irrigation Booklets free. Luitwelier Pump Eng. Co., 713 N. Main St., Los Angeles.

General Agricultural Review.

GRAINS AND FIELD CROPS.

A barley roller may be installed at Alpaugh.

Kings county has been shipping hay to Los Angeles.

Grain has yielded well around Grimes, Colusa county.

Rice fields south of Dixon are reported in good shape.

The Garvanza bean is attracting notice in Sutter county.

Colusa barley growers sold 25,000 sacks recently at \$1.40 f. o. b.

Rice fields in Marysville district have been thriving in hot weather.

A pea-threshing machine has been purchased for use around Salinas.

A thousand-acre sugar beet experiment is to be tried out near Merced.

San Joaquin county beans are threatened with red spider. Sulphur them.

Fifteen to forty sacks of barley per acre have been harvested around Gustine, Merced county.

Sutter county river beans are reported in fine condition and larger acreage than ever before.

A Le Grand harvester threshed 160 acres of winter sown barley in 4 days, getting nearly 17 sacks per acre.

The alfalfa seed crop through Lassen and Modoc counties is estimated at 2-3 of normal; but it is too early to judge rightly.

Alpaugh shipped about 80 carloads of sugar beets during the season just past. Growers are planning for beets on alfalfa land next year.

The rice rates of the S. P. and Santa Fe railroads will be considered at a hearing by the State Railroad Commission at Biggs Aug. 7.

It is reported that a large acreage of land in the Merced district will be planted to sugar beets next year for Tulare county sugar factories.

Some rot has been published about the "80,000,000 pounds of rice grown in California last year going to waste for lack of a market." It was practically all sold this spring.

Twenty thousand acres of sugar beets are proposed for the Corcoran and Visalia sugar factories which recently came under the same ownership.

A 40-acre field of rice is being grown at Chowchilla this year as an experiment on land that would otherwise be of little value for agricultural purposes because of its alkali.

The hay crop in the northeastern part of the State promises to be 1-3 short of normal. Some hay is being sold at \$7 to \$9 per ton in the stack. Some growers are holding for \$10.

Small shipments of sweet potatoes are being made daily from the Atwater district, producers receiving four cents a pound, f. o. b. Carload shipments will start within the next week.

Grain elevators have been completed at Athlone, Merced county, and Chowchilla, Madera county; and both are well filled with grain at present. The latter has a capacity

of 80,000 bushels. Because of the dryness of this climate it is not necessary to stir the grain in the bins as is the case in Eastern States.

DECIDUOUS FRUITS.

Dried peach buyers around Chico are offering 6 cents.

Tulare county reports a better prune crop than usual.

Ventura county reports some dried apricot sales at 14 cents.

Los Molinos is shipping about 10 cars of Elbertas this year.

Prune picking started last week on Sugars in Napa and Santa Clara valleys.

One shipper of Dinuba has been shipping a car of Tuscans per day to Armona.

Ventura county reports 1000 tons dried apricots as against 1870 tons last year.

For the week ending July 26, 98 carloads of fruit were shipped from Vacaville.

One company contracted for 10,000 boxes of Contra Costa pears for Eastern shipment.

Libby, McNeil and Libby have been employing 530 people at their Selma cannery.

Yuba City Tuscans are about cleaned up and the cannery has been packing Muirs.

At the meeting of prune and apricot growers at Campbell July 25, 22 growers signed up.

Elberta shipments of one company from Kings county to the East are estimated at 65 carloads.

The first car of pears ever shipped from Antelope Valley, Los Angeles county, went out last week.

Riverside Bartletts are expected to all be gone by Aug. 15. They are nearly a month earlier than usual.

The Kings County Packing Co. of Armona proposes to increase its capital stock from \$100,000 to \$250,000.

Butte County Horticultural Commissioner Earle Mills has bought 56 acres of "slickers" along the old Cherokee canal which he will plant to prunes.

A crate of Millard Sharpe's new Mammoth plums developed near Vacaville sold recently in New York for \$7.37 1/2.

The Cal. Peach Growers' modern packing plant at Selma was begun last week. It will be brick, 100x140 feet.

A Stanislaus grower is said to have sold 30 boxes nectarines from one tree in San Francisco at \$1 per box. He thinks he may plant 20 acres to this fruit.

The Banning Canning Co. opened for the peach season with about 200 employees. Muirs and Lovells are ripe and other fruits are ripening fast at the same time.

Fresh fruit shipments are reported by the Cal. Fruit Distributors for Jul. 26 as follows for 1915 and 1916 respectively: Peaches 11 and 85 1/4 cars; plums 28 1/2 and 28 1/2; pears 39 and 75 1/2; grapes 2 and 4 1/4.

Green fruit and cannery shippers shipped 65 carloads of peaches out of the Atwater district last week. Green fruit shippers are paying \$20 a ton and about half of the fruit leaving the district is for green fruit consumption. The peach crop in this district is variously estimated from 60 to 90 per cent.

Bankers offered the California Farmers' Union loans of 50 per cent of the market value of their prunes on warehouse receipts. With this substantial proof of confidence, the Union expects to pay members 2 1/2 cents on delivery, another payment about the time taxes are due, and if final settlement is not made within 60 days thereafter, another payment will be made within that time, according to Sales Manager W. S. Breton.

There is a difference of opinion in the East as to how high peaches can be sold without seriously injuring the peach market. Some letters at hand say that six-cent peaches are O. K., while others are pessimistic, largely a matter of where one's interests lie. Probably the best illustration of inconsistency on the part of California packers who are spreading this report, is the fact that they themselves are paying 6 1/4 cents, according to the Cal. Peach Growers, Inc.

CITRUS, OLIVES, NUTS.

The Esparto Almond Festival is no more.

Esparto almond picking is in full swing.

A 40-acre Butte county almond orchard recently sold for \$750 per acre.

The grinding walnut cracker at Goleta is to be replaced by one with a hammering action if the latter works as well as hoped.

Fumigation of 4,000 acres of citrus orchards in Tulare county has begun under inspection of Horticultural Commissioner Chas. F. Collins.

GRAPES AND RAISINS.

Esparto Sultanas are moving. Clovis Thompsons were practically cleaned up this week.

The first carload of Malagas from the Fresno district was shipped from Cutler July 28.

The new disease of Lodi Tokays has been diagnosed as stem sunburn and stem mildew.

Vacaville sent the first Tokay shipment of the season July 14.

The first Dinuba Thompsons sold in Boston at \$2.85 per crate.

A 34-acre San Joaquin county Tokay crop recently sold on the vines for \$6,000 cash.

The first car of Thompsons from Reedley left July 28. Grapes are ripening rapidly.

The first car of grapes from Livingston, Merced county, were Thompsons and Malagas shipped July 26.

Lodi Tokays are coloring and sugaring rapidly and carload shipments are expected soon after the middle of the month.

Clovis shipped a car of Malagas July 28. Some of these tested over 20 per cent sugar. Seventeen per cent is the legal minimum.

Seeded raisins in tin cans are being produced by the Kings County Packing Co. and advertised as keeping their freshness, and flavor better than in cartons.

A 40-acre Thompson crop in Imperial county was sold on the vines at \$30 per ton, yielding \$105 per acre. They went out a month or six weeks before grapes from any other part of U. S.

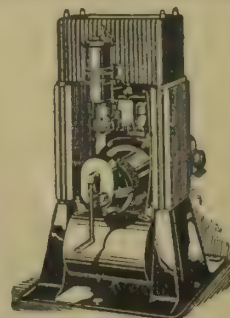
Concord grapes grown on the Gibson ranch near Litchfield, Honey Lake Valley, contain 19.4 per cent sugar, said to be over 4 per cent higher than Eastern Concord. They have proved to be good bearers. Twelve acres are set to this variety on the Gibson ranch.



Sanitary Barn and Dairy Equipment Stalls, Stanchions, Feed and Litter Carriers

Catalogs and Barn Plan Books Free.

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BASELINE-ELECTRIC UNIT
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Electricity for Farm Homes

At one-third cost of juice from Power Company, (this includes interest on cost of plant). It is the simplest and most economical plant on the market.

No Batteries - No Switchboard - No Rheostat.

Will operate 50 lights 7 1/2 hours for 11c. Will also operate electric fans, irons, small motors, etc.

If your buildings are not wired, send us plans and we will give you full instructions so that you can wire them yourselves. Material furnished at lowest cost.

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Beautifully lithographed stock labels ready for immediate shipment. Write for free samples—address

Label Department,

SCHMIDT LITHOGRAPH CO.,
San Francisco.

CUT FLOWERS

Cut out the Middleman. Buy direct from the Grower. All varieties of cut flowers in season direct from the plants, sent by parcel post or express. Also floral work of all kinds. Try a sample order. 40 varieties of ferns in 4-inch pots now ready, 25c each.

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PUREBRED STOCK SALES A SPECIALTY.

Sales Conducted in all parts of Calif.

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Tamworths and Duroc-Jerseys

We can fill orders for mature stock and weanling pigs of both sexes. This is the largest herd of TAMWORTHS in the State. Our Stock is sure to please.

Write or call and see us.

W. O. PEARSON, Prop.

Woodland, California.

CORN

Harvester cuts and throws in pile on harvester or windrows. Man and horse cuts and shocks equal to Corn Binder. Sold in every state. Price only \$22.00 with folder binder. Testimonials and catalog FREE showing picture of Harvester. PROCESS MFG. CO., Dept. 262, Salina, Kansas.

MISCELLANEOUS.

The Dean Iris Gardens of Moneta have recently put out a little booklet listing 162 named varieties.

A Long Beach man claims to have found that toads are better than sprays, etc., to control garden snails.

The Tulare County Bee-keepers' Ass'n recently contracted their crop of at least 10 carloads of honey at a trifle over 6 cents per pound.

A. B. Humphrey of Escalon recently planted 100 acres of corn on his Berkshire-Guernsey ranch; 50 acres are Indian corn for silage.

Work has commenced on a trail between Lake Tahoe and Yosemite Valley along the summits largely at an elevation of 6,000 to 7,000 feet.

Merced county supervisors will hold a hearing Aug. 9, 2 p. m., to learn whether farmers want concerted action against ground squirrels.

A Berkeley rose grower is said to have produced a variety which is deep copper colored mornings and evenings, but dark red in the afternoons.

Glenn and Tehama counties are proposing a system of cruising the land to get equitable valuation of farm lands.

Practical work done by boys and girls on the farm should, and does in some places, count as grades and credits in their school work, according to U. S. Dept. Agr.

A Santa Maria (Santa Barbara county) farmer is suing for \$10,000 damages against two men who are accused of scattering wild morning glory seed over his ranch.

The Farm Advisers of seven counties met Yolo County Farm Adviser N. P. Searls July 25 and were shown what State Leader of Farmer Advisers B. H. Cocheron said was the best bunch of farm bureau demonstrations in the State.

Because a large part of the land in the Atwater district of Merced county is being made worthless by sub-irrigation and seepage water from the main irrigation laterals, the owners of 7000 acres in that section have formed a drainage district and will start work digging ditches in the near future.

In order to rid the large areas of unsold land in the Chowchilla district of rabbits and squirrels a bounty of five cents each is being paid for rabbits and a large crew of men are working under the supervision of the U. S. Bureau of Health, spreading poisoned grain on the burnt over grain stubble.

1916 FAIR DATES.

Sonoma-Marin District Fair, Santa Rosa, Aug. 7-13.

Solano County Fair, Dixon, Aug. 16-19.

Yolo County Fair, Woodland, Aug. 26-29.

Vintage Festival, St. Helena, Sept. 1-4.

Cal. State Fair, Sacramento, Sept. 2-9.

Alameda County Fair, Pleasanton, Sept. 13-17.

Ventura County Fair, Ventura, Sept. 10-16.

Napa County Farm Bureau, Napa, Sept. 14-16.

Stanislaus Livestock Show, Modesto, Sept. 18-23.

Merced County Fair, Merced, Sept. 19-23.

Nevada State Fair, Reno, Sept. 21-26.

Oregon State Fair, Salem, Sept. 25-30.

Fresno District Fair, Sept. 26-30.

Kings County Fair, Hanford, Oct. 2-7.

Kern County Fair, Bakersfield, Oct. 9-14.

Riverside County Fair, Riverside, Oct. 16-21.

Arizona State Fair, Phoenix, Nov. 13-18.

International Livestock Exposition, Chicago, Dec. 2-9.

Pacific International Livestock Exposition, Portland, Dec. 4-9.

San Diego Panama-California Exposition, Dec. 31.

HARDENING TREES FOR WINTER.

To the Editor: We have some walnuts and pears in the west end of San Fernando valley, set out last April. How many times should they be watered before they go into the dormant state? We have watered them twice already, the last time was July 1.

We also have 10 acres of oranges and 5 acres of lemons, the trees being 25 ft. apart in form of a square. What would be your opinion of setting a tree in the center of each one of the squares? How often should citrus trees be watered and when commence to harden them for winter?—O. B., Owensmouth.

[If you keep the ground among your walnuts and pears moist deep down until late September, they will go into the winter in good condition. There is no need of throwing them dormant earlier than that as you would lose that much growth.

If we had citrus trees on 25 foot squares, we would not plant anything in the squares from which we could not reap profits the first year. In other words, we would not plant trees at all, but would plant garden crops or cover crops to improve the soil and fertility.

Citrus trees should be watered

often enough so that they do not suffer, remembering that the water should go down as deep as the roots will follow it, which is more than three feet.

Let suckers grow after September in order to harden the wood for winter, but we would not attempt to harden it by withholding water.]

German farmers have for years been borrowing money and repaying enough principal yearly to clear the debt at a given time, reducing interest yearly. Such a system is now available in Cal.

26 Extra Features
73 New Conceptions

Mitchell

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MODEL

\$1325
F.o.b. Racine

The Expert's Car

This Shows What Men Think of a Bate-Built Car

Most of the Mitchell sales in cities are made to very able men.

Our Chicago dealer, in one week, sold Mitchells to five big bankers. Our New York dealer—in the home of the critical—has ordered 2000 of this Mid-Year model.

Your nearest Mitchell dealer has a list of engineers—men of national fame—who selected the Mitchell. They chose this car, among 400 makes, because of its mechanical perfection.

Due to John W. Bate

The Mitchell's position among shrewd buyers is due to John W. Bate.

This great efficiency engineer designed all our factory buildings. They now cover 45 acres. He equipped those buildings with 2092 up-to-date machines. He trained our workmen.

The result is a model motor car plant. He has reduced our factory costs 50 per cent. No other plant in America, we think, could build such a car at our cost.

That is why such a car can be sold at our price. And why it includes 26 costly extras without any extra price.

Extra-Strong Parts

In the car itself Mr. Bate has worked out more than 700 improvements. He has spent 13 years on it. This is his 17th model.

Hardly a casting remains in it. But 440 parts are either drop-forged or stamped from toughened steel. He allows big margins of safety. He uses much Chrome-Vanadium steel. Important parts are all made oversize. The result seems to be a lifetime car. Six Mitchells have averaged 164,372 miles each, or over 30 years of ordinary service. And they are running still.

That is why men who get expert advice are buying this Mitchell now. They want a car which John W. Bate calls, "The best car I can build."

Now 73 New Touches

The Mid-Year Mitchell is our second 1916 model. It was completed after other new models came out. Our experts examined 257 of the latest models to get ideas for this.

So this Mid-Year Mitchell combines all the best attractions brought out in this year's cars.

In addition, it has 26 extra features—things other cars omit. Things like a power tire pump, cantilever springs, an extra-cost carburetor, an easy control, a ball-bearing steering gear, etc. You will find here the most complete car shown. You will find beauty, luxury and comfort in extreme. You will find the car which you will want when you buy a car to keep. Go see it. If you don't know your Mitchell dealer, ask us for his name.

MITCHELL MOTORS CO., INC.

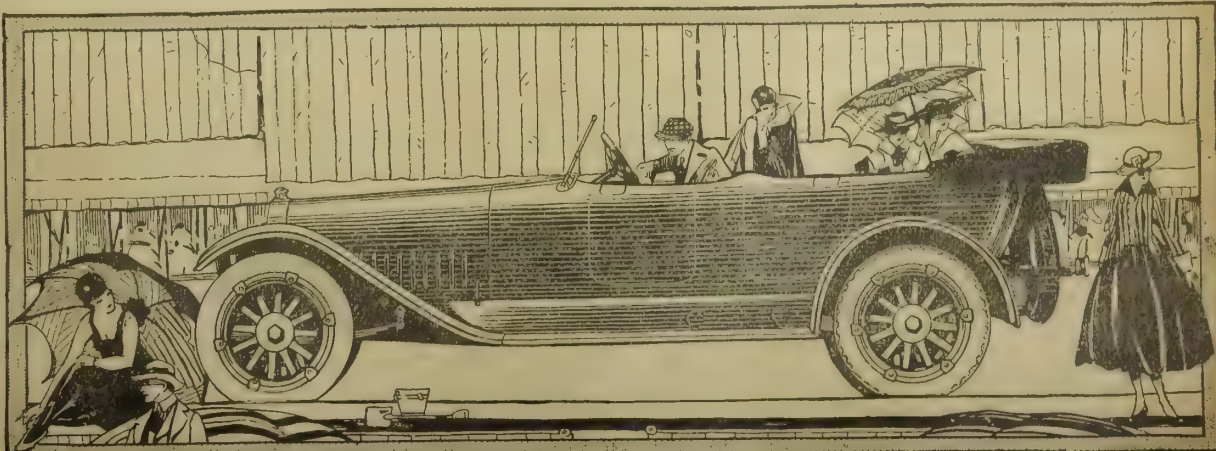
Racine, Wis., U. S. A.

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Racine

For 5-Passenger Touring Car or
3-Passenger Roadster

7-Passenger Touring Body \$35 Extra

High-speed economical Six. 48 horsepower; 127-inch wheelbase; complete equipment, including 26 extra features.



Best Cow Ration Explained.

To the Editor: What is the best and cheapest grain ration to feed my cows for best results? Am feeding all the green cut alfalfa they will eat, with a small amount of red oat hay, also five sacks each of middlings and cocoanut meal per month to 10 cows giving 8 to 45 pounds milk. Prices here: cocoanut meal \$32 per ton, rolled barley \$30, bran \$30, middlings \$36.—J. C. N., San Jose.

[Answered by E. C. Voorhies, University Farm, Davis, California.]

[A good grain mixture with the feeds given would be 200 lbs. barley, 100 lbs. bran and 100 lbs. cocoanut oil cake meal. The price set for your cocoanut meal is too high and you should be able to obtain it more cheaply. It is sold around San Francisco for \$24.00 per ton, and the freight to San Jose should not be \$8.00. Middlings are too high priced usually to feed to dairy cattle, and your cows will probably do as well on the ration suggested as on the one which you are now feeding. In a short while dried beet pulp will be available and the following ration will give very good results:

Equal parts of barley, bran, beet pulp, and cocoanut oil cake meal, by weight.

The beet pulp should be obtained as cheaply if not cheaper than what you are now feeding. The last named ration has been fed on the University Farm for some time with success.

To the best cows one should give about one pound of this mixture or other concentrate for every 5 or 6 pounds of milk that the cow gives, up to the point where 8 pounds of grain is given per day. It rarely pays to feed much more than this amount.]

DAIRY TENANT PROBLEM.

[Written for Pacific Rural Press.]

To the Editor: What is a reasonable share proposition on a dairy ranch where the tenant furnishes half the stock and does all the work of caring for the stock and putting up all the hay? There are 80 acres in the ranch and about eight acres in the orchard that was set out last year which the tenant has to care for.—G. E. H., Modesto.

[It is customary for the owner to furnish the land and cows, giving the tenant half of everything grown on the ranch. As the tenant in this case is to furnish half the cows as well as do all the work he should, we believe, receive half the income together with interest and depreciation charges on the cattle he furnishes. For illustration, if there are 50 cows in the herd and 25 of them belong to the tenant and have a valuation of \$75 each the land owner should pay six per cent interest on the investment plus ten per cent depreciation on the total valuation of the tenant's stock or about \$300 annually. Half of the heifers would belong to each party interested. By this arrangement, the land owner would simply pay a fair rental to the tenant for his cows. As the orchard is a young one the tenant should be paid for all work done in it till it comes into bearing.

We quote general principles as written for your query by Prof. R. L. Adams of the University of Cal.:

In determining the proper division of profit or loss in cases of leased land, a clearer understanding of what each party is rightly entitled to

will result if the various items entering into the deal are tabulated at correct figures, based upon careful estimates of forthcoming expense, or just valuations of present investments. The interest of each partner can then be determined therefrom.

Each party is rightly entitled to:

(a) Repayment for all labor—manual and supervisory.

(b) Repayment of all moneys paid out for operating expenses—sacks, twine, seed, fertilizer.

(c) Interest on all moneys invested in land, improvements, stock, implements, and the like, based upon fair valuations, and the going rate of interest.

(d) Interest on all moneys advanced for operating expenses—feed, material, labor, harvest, and the like.

(e) A sum to offset depreciation of plant—buildings, implements, stock, and the like.

Thus in the case mentioned it will be necessary to tabulate all items entering into the business and from this determine the share of each.

In general, the safest and fairest basis of what constitutes the proper disbursements of farm receipts between lessor and lessee is to repay each partner according to the share put into the business. The owner usually offers land, possibly buildings or other improvements, sometimes livestock, and occasionally feed. The tenant, as a rule, supplies labor, sometimes working equipment and operating capital.

Each is entitled to a reasonable rate of interest to the extent of his capital, to a sum for depreciation (reasonable wear and tear), and to replacement of any items the use of which exhausts capital, as seed, sacks, fertilizer, and the like, and to reimbursement for labor.

In figuring out a given scheme care should be exercised that only correct data be used, and that due allowance be made for overcapitalization of land, labor and all items necessary to the proper planning of the scheme.]

SHIPPING BEEF CATTLE TO EASTERN MARKETS.

[Written for Pacific Rural Press.]

While shipments of beef cattle from California to Omaha, Kansas City, and even to Chicago from central California are rather limited in size, it is nevertheless interesting to note that from Merced county alone shipments East this year have amounted to over 125 carloads.

Quoting a member of the firm of Robinson Bros. of Merced, who sell cattle most every year for Eastern shipments but do not ship on their own account, "There is a psychological time each year for the shipment of California cattle East. Usually June 10 is that time, as the markets at home are nearing their lowest ebb, the cattle are in prime condition, having fattened on dry grass and usually go back from that time on, and the Eastern markets are usually close to the high point at that time."

It is usual to ship heavy cattle, the weights running around 1300 pounds or better. There are three primary reasons for these heavy steers being shipped: (1) because the freight rate per pound is less, freight being paid at the car rate and more weight being secured per car with the heavy steers; (2) older steers stand the long shipping better than younger stuff would; (3) the Eastern market for heavy cattle has usually been good at that time of year.

Tuberculin testing under the new law will be done by the State free of cost.

It has been fully demonstrated in California that a Silo

FILLED WITH SOUND SILAGE IS A POSITIVE INSURANCE AGAINST LOSSES FROM SHORTAGE OF GREEN FEED HOWEVER CAUSED, AND ALL SILAGE IS SOUND WHEN MADE IN

A "Remco" Air-dried Redwood SILO

Mechanical Perfection, Highest Grade Material, Continuous Efficiency and Durability of a Lifetime, Are Its Outstanding Features

ORDER YOURS EARLY

and avoid the rush and consequent delay which always occurs in September.

A catalog showing details of design, material and construction—sizes and prices, is yours for the asking.

SEND FOR A COPY TODAY.

Redwood Manufacturers Co.

1608 HOBART BUILDING,

SAN FRANCISCO.

KNOB HILL STOCK FARM Registered Big Type Poland Chinas : : :



SOME TYPICAL KNOB HILL BROOD SOWS.
(Large type, combined with high quality.)

Our herd is nominated in the California Poland China Futurity to be held in connection with the State Fair this fall. We have just imported and added to the herd some of the best blood of the East, including boars from W. J. Hather, Ord, Neb., and Peter Mouw, Orange City, Iowa. We are offering pigs of both sexes from prize-winning stock. Litters coming at all seasons and stock usually on hand to suit customers.

Come and see them, or write for what you want.
ALL STOCK REGISTERED. ALL BREEDING GUARANTEED.
A. M. HENRY, Prop. Farmington, Cal.



SANTA ANITA RANCHO

ANOAKIA BREEDING FARM



HOLSTEIN CATTLE The breeding herd of registered Holstein cattle at Santa Anita Rancho is made up of individuals selected strictly upon their merits as producers, high individual quality, and proven transmitting power of their ancestors. PRINCE GELSCHER WALKER, whose combination of breeding, individuality, and the production of his daughters stamp him as one of the greatest young sires of breed.

Females in the herd are making large official record as rapidly as they freshen, and the herd is being developed to become one of the largest groups of high producers in the West.

At present a few bull calves are offered for sale. These are straight, well-marked youngsters, bred right, and priced moderately.

BERKSHIRE HOGS The breeding herd of registered Berkshires has been carefully selected and represents the blood lines that are in the very first rank of the breed. The herd is headed by KINTYRE LAIRD, first prize junior yearling and reserve senior champion boar at Panama-Pacific Exposition. He is an unusually good type, and comes from a family noted for uniformity and prize-winning quality.

A few boar pigs are offered at this time.

POLAND-CHINA HOGS In founding the herd of registered Poland-Chinas at Santa Anita Rancho, the choicest individuals of the most noted prize-winning families in the West were drawn upon and for uniformity, desirable size and quality, the herd is unexcelled in the West. At the head of the herd is BANKER'S BOY, junior champion and reserve grand champion at P. P. I. B.

Anita M. Baldwin, W. H. TAYLOR, Superintendent.
Santa Anita, Cal.

Digester Tankage

Send for sensible folder on feeding hogs

Western Meat Company

Animal Food Dept. 704 Townsend St., San Francisco

Woman Raises Hogs Successfully.

[Written for Pacific Rural Press by Glenn F. Smith.]

Mrs. Della M. Foster of Holtville claims the distinction of being the Hog-queen of Imperial Valley. Mrs. Foster, formerly a breeder of Hampshires in Indiana, has a 160-acre ranch unusually well equipped. Everything found by experience to be suitable for her locality has a place on this ranch. It is fenced hog-tight into small fields with plenty of shade for every field. All buildings have concrete floors; are whitewashed inside and out, and all pens are equipped with running water from artesian wells.

This ranch supports 900 grade Hampshires. Out of 85 sows that farrowed recently, all but 3 raised good litters. Sows, all good individuals and cholera-immune, run in alfalfa up to a week or ten days before farrowing, when they are thoroughly disinfected and placed in disinfected pens unusually clean and well kept until pigs are ready to wean. Pigs are immunized a week before weaning.

After weaning time sows are turned into alfalfa and allowed 3 weeks' rest before breeding. Pigs are placed in pens where they have plenty of exercise, shade, and are fed all the soaked ground barley and cracked milo they will eat; until they reach an average weight of 75 pounds. Then they are turned onto alfalfa, and barley stubble until fattening time. Mrs. Foster recently shipped 2 carlots that averaged 180 pounds at seven months.

Her rules for success in the hog business in Imperial county are: (1) Disinfectant is cheaper than disease; (2) feed abundantly and with regularity; (3) provide shade and all the fresh, clean water the hogs will drink; (4) market as early as practicable.

All the feed necessary to keep the 900 hogs is raised on the 160 acres, except stock-food and disinfectant.

DO YOUR PIGS "EAT THEIR HEADS OFF"?

[Written for Pacific Rural Press.]

Everybody who is endeavoring to make economical gains of pork should have a pair of scales, is the belief of progressive farmers who are in the pork-making business in either a large or small way.

True enough, most any feeder can tell by observation whether a hog is gaining or not, but whether such gains are being made most economically is another question.

An acquaintance tells of a neighboring farmer who became enthusiastic over hogs, thinking that he could buy a carload of feeders and by the use of self-feeders, make

economical and satisfactory gains.

The hogs were purchased and turned into pens with the self-feeders and alfalfa pasture. For three weeks everything went well and then the feed bill began to scare the feeder. Having no scales he did not know how many pounds a week he was adding to each hog, but he did know how much money it was costing.

With that knowledge he sought our acquaintance, telling him of the feed bill and asking for advice. Learning that he had no scales but was obsessed with the one idea that they were "eating their heads off," he was advised to sell them half finished. As our acquaintance remarked, "He wouldn't find out whether the heavy feeding was justifying itself, and it's better not to feed hogs at all if you go at it half-heartedly."

And that's the truth. Too few farmers adjust the feed sack to the actual pounds of pork produced. Oftener they adjust it to the regulation of the stingy fist; and as a result the pigs go to market half fed, half fat, and weighing much less than they should.

BUSINESS MEN PROMOTE COW-TESTING.

[Written for Pacific Rural Press.]

What is perhaps the first concerted action ever taken by bankers and business men of a California city toward the promotion of a county cow-testing association is the one being undertaken by the Chamber of Commerce of Merced.

H. P. Spencer, a banker of Merced, who is chairman of the cow-testing committee of the Chamber of Commerce, believes that the community would be materially benefited by a co-operative culling out of "boarder" cows and states that the committee is compiling data on the work of other associations and that in the near future subscriptions will be solicited and the organization perfected.

It is worthy of note that while many of the business men of California are not directly interested in dairying, they have large amounts of money loaned to farmers who depend upon cows to meet their obligations. It is with the understanding that a dairyman with poor cows is apt to be a poor customer that the merchants of Merced are lending their moral and financial aid to the cow-testing work. It is to be hoped that dairymen will see the advantages of such work and give it their support, also that business men in other districts may learn something from Merced's pioneering.

BOARD HOG FENCES.

[Written for Pacific Rural Press.]

Never use wire fencing to enclose small hog pens, is the advice of W. W. Everett, manager of the River Bend Farms at St. Helena.

When he built his farrowing lots a year ago he set posts close to each other and used heavy hog-tight wire, stretched tight. Since then the sows have used the wire for scratching purposes to such an extent that it is practically destroyed. "I'll use boards next time," says Mr. Everett.

The Ideal Green Feed Silo

BECAUSE OF ITS

PROPER DESIGN BEST MATERIAL and GOOD WORKMANSHIP

will serve you better than any other.

It will give you longer service, a better quality of silage and more profit on the investment than any "cheap" silo. This has been proven by the experience of many farmers who have tried both.

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THE ACME ALFALFA MEAL ATTACHMENT

can be fitted to all sizes of Acme Feed Cutters. This attachment will enable the making of an excellent grade of alfalfa meal from alfalfa hay at a cost not exceeding that for baling.

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By feeding Silage and Alfalfa Meal made with an Acme Cutter. Alpha Engines. James Barn Equipment.

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Seattle

Everything for the Dairy.

1 Gal. more milk per Cow - at 33 1/3% less Cost

That's
what

Mr. W. F. Eldridge
of the Premier Ranch,
Corona, Cal., says about
Larrowe's Dried Beet Pulp.

—Hundreds of other dairymen
will tell you of similar satisfactory
experiences with this succulent vegetable feed. It not only increases the
production of milk but improves the
health and physical condition of
the cow.

ALFALFA & DRIED BEET PULP

—a perfectly balanced ration.

—Official tests by experiment stations and well known authorities prove that a ration composed exclusively of alfalfa and dried beet pulp contains the proper proportion of elements necessary to enable a cow to do her best. Silage is not needed, for dried beet pulp has equal or greater succulence with five times as much nutriment.

—Read what one of California's most noted breeders says:

"We do not consider corn silage an economical feed where dried beet pulp can be obtained for \$30 per ton or less; for the simple reason that it is necessary to supplement a ration of alfalfa and corn silage with a liberal ration of high-priced grain in order to get the cows to do their best, while even the heaviest producing cow will give practically as much milk on a ration of only alfalfa and dried beet pulp as on the most concentrated grain ration. We have proved this absolutely by the official scales and test."

—Test it for yourself. Go to your feed dealer and order a single 100-lb. sack. Ask for "Larrowe's." Try it with one cow whose milk record you know—and watch results.

SEND FOR "PROFITABLE FEEDING"
—a booklet that we have issued, giving
feeding instructions and valuable information. Sent free on request.

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FOR SALE!

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Includes the
WONDERFUL SECRET PROCESS
Horses and wagons, fine stable, beautiful home
and 25 acres of land, one mile from Petaluma,
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GET STARTED RIGHT.

Registered DUROC JERSEYS

Service Bears from Prize-Winning Stock
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They grow faster. Send today.

NEW ENGLAND CALIFORNIA
CORPORATION.

Ripon, California

With the Live Stock Men.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

DAIRYING AND DAIRYMEN.

Tuberculin testing under the new law will be done by the State free of cost.

Two Fresno county dairymen were recently fined for not cooling their cream.

The Chico Creamery has consolidated with the Velvet Ice Cream and Butter Shop.

Two Monterey county cheese-makers have been arrested for using unclean milk.

The Orland Cheese & Butter Co. paid \$10,689.39 to patrons in June for butterfat.

Alexander & Kellogg will show Dairy Shorthorns at Solano county fair Aug. 16-19.

A. W. Morris & Sons shipped a 16-months Holstein bull July 27 to J. K. Newman of Louisiana.

Three Kings county dairymen were fined last week for not cooling and keeping their cream cool.

The Henderson Co. of Sacramento has engaged C. Kohlbeck of University Farm to make cheese on their ranch at Elliott.

A. W. Morris & Sons of Woodland recently bought the Judge Curtis H. Lindley herd of 62 head of registered Holsteins through D. O. Lively.

The Madera Co-operative Creamery is turning out 1200 pounds of butter daily. A goodly portion of this is coming from the Chowchilla district.

A Fresno county man on horseback was knocked out with his horse by an angry bull. A Merced county man was killed by a bull about the same time. Better be safe than dead.

The recently reorganized creamery at Merced is churning about a ton of butter a day, a large portion of which is being sold to the lumber companies in the mountains back of Merced.

The Jersey cow "Surprise" owned by D. H. Bitner of Kern county led in the cow-testing association 30-day contest by producing 64.8 pounds butterfat. A Durham produced over 60 pounds.

Two 20-pound (butter) two-year daughters of King Walker Segis will be included in McAlister & Sons' sale at Rivera Sept. 19 and 20. Four of this bull's first crop of daughters have made over 20 pounds butter as two-year-olds.

Work has been commenced on the new creamery building at Chowchilla, Madera county, which will be ready for operation some time the coming fall. It is said that most of the alfalfa growers in that district are either already in the dairy business or contemplate going into it.

The first annual sale of registered Holsteins from the Frank Helm herd at Fresno will be held September 12; and will consist of 75 head, of which 60 will be females and 15 males. All of the animals in this sale will be tuberculin tested and 14 of the females will be A. R. O. cows. Except 10 heifers, the females will be three to seven years old. There will be seven granddaughters of King Segis in the offering and seven grandsons of the same bull, also three daughters of Prince Beauty Pietertje Segis. Mr. Helm states that he has secured the services of Col. Ben Rhoades of Los Angeles as auctioneer. As Mr. Helm's herd now numbers 300, there should be a choice lot of Holsteins in this sale.

HORSE OWNERS! USE

GOMBAL'S CAUSTIC BALSAM.

A safe, speedy and positive cure. The safest, most efficient ever used. Removes all lumps from horses. Impossible to produce scar or blemish. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Cleveland, O.

SWINE AND SWINEBREEDERS.

S. G. Owens of Madera is breeding purebred Durocs.

Hogs are reported to have been selling at \$7.50 per hundred in the yards at Elmira.

Le Grand farmers thought their herds had cholera; but only small pigs died and the trouble is about over.

"It is not economical to try to produce growing pigs or fattening hogs on dry pasture," says Washington Experiment Station.

A number of hog cholera outbreaks about Riego, Placer county, have been prevented from becoming epidemic, by vaccination.

Hogs fed all the grain they will eat make more rapid but less economical gains. This may enable them to be marketed at a better time.

Simple dipping often does not cure hog itch according to Arizona Expt. Station because the mites which cause it are too deep under skin or scabs.

The cost of producing 100 pounds of pork with corn and tankage was 60 cents less than when corn alone was used at Missouri Experiment Station.

Ben F. Thorpe of the Canfield Estate, Bonsall, reports that they have purchased a son of the Hampshire Messenger Boy from Iowa for herd sire.

D. O. Lively of San Francisco recently exported three Poland China sows and two boars to Guayaquil, Ecuador; also two Poland China sows and one boar to Valparaiso, Chile.

J. E. Rodefer of Yuba City started last November with 15 Poland-China-Chester-White brood sows on a 500-acre grain ranch. He now has 130 sucklings, and is an enthusiastic pork raiser.

Mark Requa of Oakland is establishing a herd of registered Berkshires near Orland. The herd sire is White's Longfellow's Model; and several sows will farrow pigs sired by Mayhews Leader Sixth.

Rape pasture replaced 64 pounds of corn in every 100 pounds gain made by hogs in an 11-week experiment at Ohio Expt. Station. An acre was found able to supply green feed for 30 100-pound hogs for three months.

In establishing his new Poland China ranch, O. L. Linn of Modesto made it a point to take advantage of eucalyptus shade. He has purchased a Big Joe boar from Judge Kemp, but cannot ship him until fall on account of hot weather.

That the Fresno District Fair is going to make a feature of its swine show is the advice received from Secretary C. G. Eberhart, who says that he has secured the services of Fred C. Gatewood, an experienced livestock show man, whose work will be confined exclusively to the swine department. A new hog barn with a capacity of 150 head is being constructed which with the other barns will make room for 250 head.

HORSES, SHEEP, CATTLE.

T. S. Glide will show Shorthorns at Solano county fair.

J. Bidegaray of Fresno has sold all of the rams recently advertised in our columns.

R. Barry of Golconda, Nev., has been appointed sheep inspector with headquarters at Golconda.

Cattle are now imported from Colombia for use in the Canal Zone, cheaper than from New York.

Salinas valley men are saying that they can sell three-year mules for cash enough to buy five-year mares.

D. B. Harris, manager Sierra Vista Vineyard, Madera county, is going to

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SWINE.

BILLIKIN HERD OF IMPROVED CHESTER WHITES—The kind that makes money. Purebred—registered—cholera immune. An extra fine lot of weaned pigs—both sexes—representing the best and most popular blood lines this breed produces. Five different sires used. Can mate up not skin. Quality combined with size. Rapid growing—early maturing. A few nice fall gilts that will be bred and ready to ship in September. Write for prices and circular. C. B. Cunningham, Mills, Sacramento County, Calif.

YOUNG POLAND CHINAS, LARGE TYPE—Boar IBA Wonder won first and Reserve Championship P. P. I. E., weighing 730 pounds under 2 years and in breeding condition. 60-day special—fine young sows bred to IBA Wonder at very low prices; also weanling pigs, either sex. Satisfaction, or money refunded. W. A. Young, Lodi, Cal.

REGISTERED DUROC-JERSEYS—All ages. We have produced hogs weighing 240 lbs. at 7 months at a cost of 3 1/2 cents per pound, including pasture, grain and upkeep of sow. If you want some of the kind it pays to raise, we would suggest that you order immediately, as our spring stock is going rapidly. Haden Smith, Woodland, Route No. 1, Box 84D.

REGISTERED DUROC-JERSEY—Weanlings, shoats, gilts and boars. Unrelated. Many of our hogs are related to the several prize-winners at Panama Exposition. This herd is undoubtedly the finest in the State. Have had as many as 19 pigs to a litter. Grange Stock & Poultry Farm, Yountville, Napa Co., Cal.

REGISTERED BERKSHIRE HOGS for sale. I am selling out all my stock. First-class brood sows at a sacrifice. Cholera immune. Going out of business. Address Paul Williamson, 546 E. Poplar St., Stockton, Cal.

GUERNSEY BULL CALVES from Grand Champion Bull. Also Hampshire Swine, both sexes, from Grand Champion 700-lb. boar and Grand and Junior Champion Sow. Bella Vista Herd, J. W. Henderson, 1st National Bank Bldg., Berkeley, Cal.

REGISTERED BERKSHIRES—World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapeville Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

NOW IS THE TIME to breed for Fall litters. I have a choice lot of young boars ready for immediate service. Also bred sows, bred gilts, weanlings of both sexes. Attractive prices will be quoted for quick sale. Geo. A. Smith, Corcoran, Cal.

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REGISTERED POLAND CHINAS. Young stock for sale. J. H. Cook, Paradise, Cal.

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HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRE PIGS—Write or call Greenwood Ranch, Brentwood, Cal.

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DAIRY CATTLE.

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be on the Hereford map in a big way pretty soon.

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Porterville cattle men shipped about 750 fat cattle to San Francisco last week.

Annual co-operative cattle sales in S. C. have shown that, if farmers can be assured of a profitable market, they will feed cattle on cottonseed meal and hulls, silage, and other strong feeds.

GENERAL LIVESTOCK.

Solano county will not have a county exhibit at the State Fair, for lack of funds.

Eastern Oregon is entering a new campaign of coyote extermination on account of rabies.

The Cudahy Packing Co. will soon begin a \$20,000 meat smokehouse and a cooking plant in Fresno. San Bernardino and San Diego expect similar plants.

The Napa County Fair will have no races. Its central interests will be in exhibits of farmers. In this it is courageously undertaking the true province of a county fair.

The number of cattle in U. S. has been slowly increasing since 1912, and the causes of this are still in active operation, says the Chamber of Commerce of the U. S.

The Modesto Farmers' Union is planning a county auction sale to be held monthly to dispose of veal calves, cows, hogs, sheep, chickens, second-hand implements, etc. The first is planned for early September.

GREAT BERKSHIRE SALE.

The Berkshire sale, held August 2nd at W. M. Carruthers' farm near Mayfield, was a pronounced success. There was a good attendance from all sections of the State, the stock offered was of outstanding quality, Auctioneer Hord was in fine fettle, and L. E. Frost of Chicago was an able ring general.

Too many animals were catalogued for the limited time of the sale, so eleven head of boars were not offered. The 36 head of boars and sows sold brought an average price of \$178.33; total sales amounting to \$6420. Jas. Mills of Willows was the largest buyer, bidding in over \$3000 worth. Other buyers were Mark Requa of Orland; E. R. Sheldon of Sonoma; D. O. Lively and E. O. McCormick, San Francisco; Chas. Turner, San Jose; H. L. Hill, Los Altos; D. B. Wentworth, Napa; C. A. Thayer, San Rafael; J. M. Bomberger, Modesto, and others. The highest price paid was \$400 for a gilt, farrowed Sept., 1915. The success of this sale will doubtless stimulate others, but it is doubtful if the prices received will be exceeded for some time. Mr. Carruthers is to be congratulated upon his success.

STARVING WOMEN IN ALBANIA.

To a Good Samaritan:

A nation is dying of hunger. It is a small, weak nation, and its call for help is unheard among the stronger appeals of its powerful neighbors, in their sudden, recent sufferings. For three years the country of Albania has been the victim of sword and famine. Now, the people are without food. Ten thousand human beings are starving daily.

The women are emaciated; their bones seem about to protrude through the skin. Would you give bread to one famished woman, save for her a child as dear to her, as yours to you? Would you win a grateful look from the appealing eyes of her in whose wasted hands you place the gift?

Give one hundred cents to buy flour for Albania. If you have given to other countries until you feel that

MISCELLANEOUS.

CROLEY'S CALF FEED with skim milk will raise fine dairy heifers cheaply. Geo. H. Croley Co. Inc., 631-637 Brannan St., San Francisco.

D. O. LIVELY, 216 Hobart Building, San Francisco, buys and sells livestock—any kind—any quantity.

DUROCS AND GUERNSEY BULL CALVES Gilts bred to 900-lb. boar. Ed. E. Johnson, Turlock, Cal.

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WORLD'S FAIR GRAND CHAMPION Berkshire Boar is bred in Champion lines—won championship honors in one of the greatest Berkshire shows ever held—sires champions, and we have championship material for sale. Our 75 brood sows have been selected through six years of careful breeding. Choice gilts bred to the Grand Champion for sale as well as boar pigs of Grand Leader breeding. Visitors welcome. Satisfaction guaranteed.

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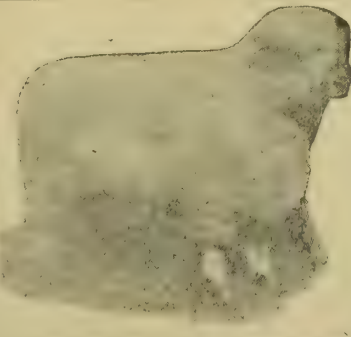
See our Show Herd at the State Fair (about 30 entries). Don't miss the **Western Berkshire Congress Sale**. It consists of entries from among the Best Berkshire Herds in the State. The sale will be held immediately after the judging.



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The only separator that skims perfectly clean at widely varying speeds and delivers cream of unvarying thickness. Saves \$40 to \$60 a year extra, due to this wonderful Suction-feed feature (the feed varies with the speed). Has other important exclusive features—no discs to wash, knee-high supply tank, ball bearing. Over one million Sharples users. Send for catalog.
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Aged Ram, First and Second. Yearling Ram, First. Ram Lamb, First, Second and Third. Champion Ram. Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of Sire, First. Pen of three Lambs, bred by Exhibitor, First and Fourth. Pen of Four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock, one year old, bred by Exhibitor, First. Flock under one year, First. Flock under one year, bred by Exhibitor, First. Produce of Ewe, First, Second and Third. Premier Championship for Breeder. Premier Championship for Exhibitor. A total, including American Shropshire Specials, of 15 Firsts, 9 Seconds, and 6 Championships.

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Holstein Cattle
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you can do no more, give ten cents. A bit of bread from each of the well-fed to one of these will feed all.

The Albanian Relief Fund.
Send money to Albanian Relief Fund, 70 Fifth Avenue, New York.

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Latest improved machinery. Doors, Windows, Frames, Mouldings.
R. F. WILSON, STOCKTON, CAL.

Johnson-Bermuda Pig Pasture.

To the Editor: What is the value of Johnson grass and Bermuda grass as compared with other pasture? I understand that they make pretty good pig feed. I have a lot of land covered heavily with Bermuda grass, and since I need a lot of pig pasture would it not be just as well to use it for this purpose instead of trying to kill it by plowing?—E. L. San Francisco.

(Answered by Prof. P. B. Kennedy, University of California.)

[Both Johnson grass and Bermuda grass are nutritious. In the northern part of the State Bermuda grass does not grow tall enough to make any considerable bulk of forage, but in the southern part where there is a longer growing season, and a greater number of warmer days, it makes a very satisfactory and substantial growth. Bermuda grass does not enter the ground deeply, and hence as a feed for hogs would not be likely to produce the same bulk of forage. Johnson grass extends into the soil for several feet and produces large, succulent roots. It is these that the hogs root for and eat with considerable relish and nutriment.

If you want to get rid of these grasses, one of the best means to lessen their vitality is to pasture them heavily. When they have been thoroughly subdued in this manner, you will find that eradication by plowing or other means will be greatly hastened.

Bermuda grass will compare favorably with any of the known pasture grasses as a food. The only real objection to it is the difficulty in its eradication when the land is desired for other purposes.

Johnson grass, because of its coarser growth, could not be considered as good a pasture for sheep or cows as Bermuda, but the roots make it quite valuable for hogs. The ground, however, would have to be of such a nature that the hogs could readily feed on the roots; or it might be plowed to allow freer access.]

RULES AND PRIZES, STATE COW COMPETITION.

(Continued from first page.)

Special Prizes in dairy bull calves, dairy apparatus, feed, trophies, etc., are contributed for the purposes and by the people as follows:

Purebred Bull Calves.—For the highest average production of butterfat during 10 consecutive months, by a grade herd of 10 to 25 cows headed by a purebred sire, four prizes, choice of: An Ayrshire, Guernsey, Holstein, or Jersey bull calf—donated respectively, by J. W. Clise, Seattle, Wash.; A. B. Humphrey, Escalon; K. W. Abbott, Milpitas; and N. H. Locke Co., Lockeford.

For the highest average production of butterfat during 10 consecutive months, by a grade herd of more than 25 cows, headed by a purebred sire, four prizes, choice of: An Ayrshire, Guernsey, or Jersey bull calf, donated, respectively, by E. B. McFarland, San Francisco; W. H. Saylor, San Francisco; C. G. McFarland, Tulare; and of \$100 worth in purebred Guernsey or Hampshire males, donated by Dr. J. W. Henderson, Berkeley.

Milking Machines, Cream Separators, Feeds.—For the two herds having the largest and next to the largest number of cows producing over 300 pounds of butterfat in 10 consecutive months, two prizes, choice of: A 2-unit outfit of the "Calf-Way" Milker, donated by the

"Calf-Way" Milker Company, Chicago, and a 2-unit Sharples Mechanical Milker, by the Sharples Separator Company, West Chester, Penn. Milking machines are awarded for use in winner's herd only.

For the highest average of butterfat by 10 cows in a grade herd, five prizes (winner of first three cash prizes barred), choice of: A No. 35 Iowa Cream Separator, capacity 850 pounds per hour, donated by the Associated Manufacturers Company, Waterloo, Iowa; a No. 5 Simplex Iowa Cream Separator, capacity 850 pounds per hour, by Baker & Hamilton, San Francisco; a No. 6 Anker-Holth Cream Separator, capacity 600 pounds, by Beck Hardware Company, San Francisco; an M-2 Baltic Cream Separator, capacity 300 pounds per hour, by the Empire Cream Separator Company, Bloomfield, N. J.; a No. 2 Primrose Cream Separator, by the International Harvester Company of America, San Francisco.

For the highest average production of three cows in the same herd, 2½ years to 3½ years old at the beginning of the competition: A No. 15 De Laval Cream Separator, capacity 675 pounds, donated by the De Laval Dairy Supply Company, San Francisco.

For the highest production of butterfat during 10 consecutive months by a cow entered in the competition, 5 tons of Larowe's Dried Beet Pulp, offered by the Larowe Milling Company, Los Angeles, provided, that if the winner of this prize consumed not less than one half-ton of Larowe's Dried Beet Pulp in her ration during the record period, the quantity to be awarded shall be increased to 15 tons.

Special Cash Prizes.—For the highest production of butterfat during 10 consecutive months by five cows in a herd, bred by the owner, three prizes: \$150 each for (a) purebred cows, (b) grade cows, (c) cows irrespective of their breeding—offered by the Country Life Department of The Sacramento Bee, Sacramento. No cow shall compete in more than one of these groups.

For the highest and next to the highest production of butterfat during 10 consecutive months by a cow in the Imperial Valley, two prizes: \$25 and \$15, offered by Barber & Thomson Company, Los Angeles.

For the highest average production of butterfat by 5 cows in a grade herd, headed by a purebred sire, during each calendar month, November, 1916, to February, 1918, inclusive: A cash prize of \$25 per month, donated by the Pacific Rural Press, San Francisco—The same individual cows shall compete only once for this prize.

For the highest production of butterfat for one year by herds belonging to a cow-testing association, three prizes: One hundred dollars each for herds of (a) 10 to 25 cows, (b) 26 to 50 cows, (c) over 50 cows; offered by the California Cultivator, Los Angeles. Association records for twelve consecutive months during the period of November, 1916, to February, 1918, will be considered in the award of these prizes; entries to close February 28, 1917. All heifers and cows in milk during six months or more must be included in the average for the herd.

For the highest production of butterfat by a grade cow for each month during the year 1917: A cash prize of \$10 a month, offered by McAlister & Sons, Chino. Records made by the same cows shall only be considered once in the award of this prize.

(a) For the highest average production of butterfat by ten cows in a grade herd, headed by a purebred bull out of a dam with a semi-official yearly record at least 10 per cent in excess of the average butterfat production of the herd, and (b) For the highest average production of butterfat by ten cows in a registered purebred herd, covering ten months: Two prizes of \$150 and \$100, respectively, offered by the Livestock and Dairy Journal, Sacramento.

Trophies and Medals.—For the highest production of milk during 10 consecutive months by a cow irrespective of her breeding: A silver trophy, donated by Scott, Magner & Miller, San Francisco, California.

For the highest records of a registered Jersey cow and by 10 cows in a grade herd, sired by a registered Jersey bull: Two cups, offered by the American Jersey Cattle Club, New York City, New York.

For the highest records by a registered Guernsey cow and by 10 cows in a grade herd, sired by a registered Guernsey bull: Two trophies, offered

by the American Guernsey Cattle Club, Peterboro, New Hampshire.

For the highest records by a registered Holstein cow and by 10 cows in a grade herd, sired by a registered Holstein bull: Two silver cups, offered by the Holstein-Friesian Association of America, Brattleboro, Vermont.

For the largest production of butterfat during 10 consecutive months by a cow bred by the owner: One gold medal.

For the largest production of butterfat during 10 consecutive months by 5 cows in a herd, bred by the owner: One gold medal.

GRANDSONS OF TILLY ALCARTRA



Prince Alcartra Korndyke,
Best bred son of Tilly Alcartra.

Our supply of these young sires is always limited, but we have a few now which we are offering at very reasonable prices.

Write us at once, or call and see the herd.

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Shropshire and Merino Sheep
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Shropshires sired by rams imported by me from England.

HILLCREST LAD,

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Individuals and Carload Lots.

A Few Shorthorn Bulls for Sale.



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1st Prize State Fair 1911.

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Forty head of A No. 1 pigs, both sexes, January, February and March farrow, priced to sell, and to sell right now. All registered, well bred, well developed and guaranteed satisfactory, or money refunded. Conditions are such that we must materially reduce our herd. This is your opportunity. Details for a postal.

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Choicest blood lines in the West—Defender, Cherry Chief, Proud Colonel, Crimson Wonder, Missouri Model Top, and Freed's Colonel Breeding—for sale now. Bred Sows, Bred Gilts, Herd Boars, extra growthy four-months gilts and boars. One or a car load. We are the largest breeders in the State. All stock cholera immuned. Ranches, Holtville and Devore, San Bernardino Co., Cal.

Address, **PETERS, LAMSON & WALKER, DEVOIRE, CAL.**

HOPLAND STOCK FARM REGISTERED SHORTHORN BULLS

REGISTERED BERKSHIRES (Boars, Bred Sows and Gilts)
HERD BOAR, ROYAL POINTER 2nd, 197092, First Prize
Senior Yearling, F. P. I. E.
3 REGISTERED HOLSTEIN BULLS from High-Testing Cows.
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BIG TYPE POLAND CHINAS

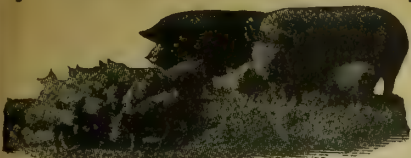
Gilts from Weanlings to one year old. Bred or open. Boars from weanlings to 8 months.

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The Inter-State Vaccine Co., at their Hog Stock Yards at Kansas City, ship out one hundred thousand stock hogs a year and guarantee every one of them to be immune from Cholera. Now, then, if we did not do this successfully, our business would not keep up, but instead, it has grown from 7,000 to an immense business. Now in this country, our work has shown the same success, and we wish to help all Hog raisers that we can reach. There is no "if." The Scientific system the Inter-State Vaccine Co. has in making their high potent serum, and the device in which we apply it, is evidence of our success in all Eastern and Middle States where we do a very large business. We have come now to California to help in the suppression of Hog Cholera. We teach the hog raiser how to vaccinate his own hogs—Free.

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ABSORBINE, JR., the antiseptic liniment for manking, reduces Strained, Torn Ligaments, Swollen Glands, Veins or Muscles; Heals Cuts, Sores, Ulcers. Allays pain. Price \$1.00 a bottle at druggists or delivered. Book "Evidence" free. W. F. YOUNG, P.D.F., 86 Temple St., Springfield, Mass.

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We loan on Cattle and Sheep in California and Nevada.
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Blake, Moffitt & Towne, Los Angeles
Blake, McFall & Co., Portland, Oregon

Veterinary Queries and Answers.

[Answered by Dr. H. B. Wintringham, Petaluma, Cal.]

[Subscribers wishing an immediate reply should send money order for \$1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

MARE BREATHE HARD.

To the Editor: I have a mare which I think has heaves. She pants, breathes hard, and coughs when on dry feed; but is better when on green feed.—E. W. C., Patterson.

[There is no cure. The green feed will give her the best relief.]

CREAM THIN.

To the Editor: A cow had a calf 12 days ago and is in splendid condition; but her cream is very thin, though heretofore it has been very fine.—F. W. M., Graton.

[Her trouble will probably pass off in a short time.]

ALFALFA MEAL IMPACTION.

To the Editor: Does alfalfa meal ever ball up in cattle's stomachs and kill them?—H. E. R., San Francisco.

[A cow can become impacted on this as well as any other food.]

DIGESTIVE TROUBLES.

To the Editor: April 1st I purchased a cow which was in good condition and apparently healthy. May 25 the dealer that I purchased from examined her and advised me to start drying her up, as he said she would be fresh within two months. She was then giving 20 lbs. of 4 per cent milk a day and when I skipped a milking the milk would leak from her teats. I hadn't made much progress toward drying her up in a week's time, when she got off her feed and bowels didn't move freely. She also seemed to have trouble urinating and there was a foul odor about her and she had cramps in her hind legs. I dosed her with salts a couple times and at present am feeding a little green alfalfa once a day thinking it will help her bowels, which now move freely but in small quantities. As she won't eat any grain or mash I am unable to give her medicine except by drenching. I still have to milk her out every few days to keep her udder from caking. The cow has lost flesh. She now eats hay fairly well, but only about half what a cow of her size should. She seems well and chews her cud all right. She seems no nearer calving than when I started drying her up. Do you think that drying up a cow giving this quantity of milk would disorganize her system in this manner? And can you advise what is her trouble and how to treat her?—E. J. W., Ripon.

[The trouble was not caused from drying up. It is digestive. Give her two pounds epsom salts dissolved in a gallon hot water at one dose.]

EYES RUN AND BLEED.

To the Editor: A mare's eyes run, and get very sore as soon as warm weather begins each year. They seem swollen and granular under the lids, and the tissues surrounding the eyes, and the eyes become whitish. Flies keep the flesh raw and bleeding from the corner of the eye down several inches along nose bone. I have tried boracic acid for washing the eyes and various ointments to heal flesh, and keep flies off, but of no use. The running of the eyes washes off the ointments. A veterinarian washed out the tear ducts several summers ago, but it was a temporary relief. She is a good mare during the cool months, but scarcely worth her feed from May to October.—C. S. M., Dinuba.

[Give this mare one dram of potassium iodide dissolved in water three times a day for ten days. Place a few drops of a 25 per cent solution argyrol in the eyes three times a day.]

NERVOUS MARE KICKS.

To the Editor: Mare—not young—developed habit of vigorously kicking when hitched, especially when first brought to standstill. Animal is inclined to be nervous standing in stall, ears twitching, sometimes tail switching, etc. Just before getting so bad, displayed uneasiness when standing hitched—pawing, looking around, etc. Fed grain hay in spring, alfalfa now. Light worked. Weighs perhaps 1300. In good condition, looks fine. Veterinary who saw one of her kicking tantrums remarked that a little operation would remedy that. What did he mean? Is it likely that this is due to some physical cause? What would be the nature of the operation and probable cost? Mare a bit inclined to be mean always, but until this spring perfectly workable and steady. Woman not used to horses could drive her nicely hitched to buggy. Afraid of nothing. Stand anywhere.—A. A. J., Turlock.

[This is nymphomania due to ovarian trouble. The cure is the removal of the ovaries which is the operation referred to. The cost of such an operation ranges in the neighborhood of \$20.00.]

IMMATURE CORN SILAGE.

[Written for Pacific Rural Press.]

While he has not been successful in raising corn past the milk stage, on account of the cool climate, John Belloni of Fortuna, Humboldt county, has found his two silos a paying investment on his grade Jersey dairy.

This is due to the fact that the silage, while washy and not having the same value as silage from more mature corn, supplies a succulent feed during the winter months, when pasture is not available on account of the long rainy season. By feeding hay with the silage Mr. Belloni is able to supply milk to local customers the year round; and this would be far more difficult and expensive without the silos.

HEIFER TWINS BREED.

To the Editor: My cow gave birth to twin heifer calves. Do such calves ever make good milk cows?—A. H. H., Ukiah.

[Answered by C. E. Beck, Durham.]

[I was raised on a ranch. Father had a cow that gave birth to twins every time except one; some were twin heifers, and some one heifer and one bull. She never had a heifer calf but what would breed and made a good cow. I am 47 years old and have never seen a twin heifer but what would breed if she had the proper show.]

[This must of course be considered in connection with the long accepted belief that a heifer twinned with a bull (a free-martin) is generally sterile.—Eds.]

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An all-steel, indestructible machine. The only Cutter and Blower with a positive Self-Feeding Device.

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AGGIE GRACE PONTIAC CREAMELLE
Half Brother of Marie Clothilde
Pontiac Creamelle, California
Champion 2-year-old.

This youngster's dam, Aggie Grace Brookside Princess, grand-daughter of Pontiac Klondyke, the greatest Holstein sire in the world, has an official record of

28.17 lbs. BUTTER - 456 lbs. MILK
TEST 4.9%

This record was an increase of 6 lbs. butter over her previous record and I expect her to make at least 30 lbs. on her next test.

His sire is Dutchland Pietertje Creamelle, one of whose daughters at 2 yrs. 1 month has just made a record of 22.52 lbs. butter, 391.7 lbs. milk, test 4.72%, making her California's champion 2-year-old.

This young bull is perfect in type, is 50% white and just ready for service. Born Apr. 22, 1915. Write or call and see the herd.

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SAN LORENZO, CALIFORNIA
Breeder of high-test Holsteins.

Shorthorn Bulls

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On April 21st we arrived from Missouri with a carload of choice registered Bulls and Heifers.

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H. L. & E. H. MURPHY,
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1300 YEARLING RAMS AND 1000 EWES.

These sheep are purebred, large and smooth, with heavy fleeces of fine, long, staple, white wool. Individuals or carload lots.

Prices reasonable.

Correspondence solicited.

CHAS. A. KIMBLE, HANFORD, CAL. Breeder and Importer.

Farm Poultry for Profit.

HOT WEATHER NOTES.

(Written for Pacific Rural Press by Susan Swaygood, Pomona.)

The seasons come and go. This is the vacation season with a capital letter, you notice, but the poultry scribe never gets a vacation with even a little. Reason: everybody and his aunt have poultry troubles along about vacation time, so ye scribe has to keep the think tank going whether it is comfortable or not.

Turkey Troubles Scarce.—There are less turkey troubles heard from this year than usual. Whether this is because of the short crop being raised or because importation of outside stock was prohibited by the State, I do not know, but this I do know, that two-thirds of the turkey troubles are due to over-feeding and the other third is due to wrong feeding and lice. Naturally, the turkey is a healthy bird, used to foraging for what it eats; and to have a big breakfast given to it before it has an opportunity to get any exercise causes all sorts of trouble in the digestive tract. If young turks were allowed to rustle a great portion of what they eat, the loss would be very small from disease of any kind.

For those who are trying to hatch a batch of late turkeys perhaps a few suggestions will be helpful. If you have hatched the early broods and put them with chicken hens, let the turkey hen take the last hatches; not that she is any better mother,

but because the eggs she will lay from now on will not be of much value to you and by letting her hatch and raise a batch of turks she will get into good condition. If she is to be marketed, the flesh will cost little or nothing. But be sure that she is well dusted with a good lice powder several times during incubation and again when the hatch comes off; then she may be very easily kept clean, and her poults will not be bothered until they are old enough to stand them.

Little turks require more animal food than do chicks. This can be supplied by feeding hard-boiled eggs and clabbered milk. One way of overcoming a scarcity of insect life is to have a fly catcher made and cantaloupe or watermelon; then when the poults are home for the night open the fly trap, first wetting the flies so that they can't fly, and bait it with a piece of musk melon, the poults will get a good feast of natural animal food.

The first great preventive of disease among poults is range; let them go and rustle; if they do not rustle enough, make it up by a good feed at night, and let that feed be as near the natural food as possible. The first two weeks, it is best to feed a little every two hours, but always chop up some kind of green feed and keep chick food away.

Feeding Laying Hens.—Around this section we learn that numbers of hens are commencing to molt, feathers are dropping fast; and this in July is a little unusual. When a flock is found to be so far in the molt, it is best to keep the feeding up to the average and give extra grit and mineral so as to help the system to prepare for the business of making new feathers. This is really what robs the hen of her nice red comb, making her pale and bloodless. Feathers are composed mostly of mineral substance; and the more mineral the hens can eat and digest the easier it will be on her. Some grit contains a very good percentage of mineral that is available to the hen; while in other kinds, what mineral value there is in it seems to be locked up and held there unavailable to the hen.

Dealers who take an interest in these matters should investigate, before purchasing, the available min-

eral in the grit they buy. The poultryman has to buy what is for sale in his community; but dealers can and should get that which is best.

Plenty of juicy green feed not only holds in easy reach the very best form of mineral for molting hens, but it also furnishes a vital force that abstracts the good out of all other food furnished. It's the man on the farm that can produce the most healthy chickens and eggs that come to market, because he has the room. These little chicken ranches where intensified poultry keeping is carried on can never compete with the man on several acres of land when it comes to quality.

See that everything under your care is provided with shade, good clean water and necessary food to last through the extreme heat of the day. The hours of inactivity are good for growth in young stock and for repairing the wear on the system in the laying flock. Laying stock need rest during these hot days and should not be unnecessarily disturbed. If they have been fed and are within reach of water, rest is just what they need, but it is a good idea to spray those places where the flock mostly congregates, at least once a week. In places where they have summer showers, this is not necessary because the rain washes the ground and cleans it of both odor and filth. Here we have to rake up and spray to keep the ground in fair condition. When these things are neglected and the flock goes to the same old camping ground day after day for a siesta, the filth and odor accumulate until some epidemic breaks out that proves a scourge to every poultryman within reach.

POULTRY TENANT TERMS.

To the Editor: How fair are these terms for a rented poultry farm: Tenant to furnish and take care of all fowls. Landlord furnish land and buildings, pay for feed, and pay tenant \$35 per month. Products to be divided equally?—S. V. S., San Francisco.

(Answered by Geo. H. Croley of Federated Poultry Association of California.)

[Tentative partnerships, more or less similar to this, are frequently entered. If the poultryman in question has only ordinary ability and capacity to profitably produce fowls and eggs and furnishes stock of only fair quality, the terms are probably in his favor; on the other hand, it could be extremely favorable for the lady should the poultryman have a good-sized flock of high grade, and should prove to have more than ordinary ability to market as well as produce fowls and eggs.

It always requires a very careful examination and the weighing of all factors entering into such transactions to determine the proper division of net profits.]

TOMATOES FOR POULTRY.

To the Editor: Is it safe to feed ripe tomatoes to growing turks and chicks? Is there danger of feeding too many?—P. S. J., Bonsall.

(Answered by Susan Swaygood.)

[There is no danger if the turks and chicks are fed sufficient dry grain and other feed to offset the acid conditions. If they are just allowed to help themselves to either

dry feed or tomatoes they will adjust matters all right; it's only when they are obliged to eat that or nothing that harm comes. However, when chicks or young turks eat tomatoes or fruit the nostrils get clogged up. Go over them once in awhile after they have gone to bed and wipe the beak with a cloth damp with coal oil. You can wipe a dozen off in ten minutes even if you have to catch them.]

CEDAR-LEAF NESTS.

To the Editor: If poultrymen will use in nests the straw or leaves from cedar, instead of old grass or grain straw, there will be no lice or mites. I put green leaves in the bottom of nests and some dry on top, and have never seen a bug around the ranch. This makes the most comfortable nest for the hen—soft and well ventilated.

Pine Grove, Harrison Mitchell.

A poultry keeper of Tulare recently reported that one of his Black Minorca hens, which he has named "Macduff," laid an egg which measured in circumference $6\frac{1}{2}$ inches one way by $8\frac{1}{2}$ inches the other. Now comes a neighboring breeder at Terra Bella who claims that one of his White Minorca hens, that he has named "White Hope," has laid an egg 7 inches by $8\frac{1}{2}$ inches. We have seen some large eggs in our time, but before making any further comments we would like to see these eggs also.

The newly organized San Francisco Bay district milk producers have advanced the price of their milk one cent per gallon.

Poultry Breeders' Directory.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

NO BABY CHICKS DURING JULY.—Fall hatching starts in August. Get in touch with us immediately, and assure chicks when you want them. Ask for special "Fall Chick" circular. White and Brown Leghorns, Banded Rocks, R. I. Reds, and Black Minorcas. Campbell Poultry Ranch, Campbell, Cal.

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MAKE AN EARLY START with your Fall chicks and get them right now. We have Baby chicks as well as chicks one and two weeks old with price same as baby chicks. No weak ones. All strong chicks—all varieties. Santa Clara Valley Hatchery, San Jose, Cal.

CROLEY'S DRY MIXED INFANT CHICK FEEDS for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by GEO. H. CROLEY CO., Inc., Poultry Supplies, San Francisco.

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BABY CHICKS.—Strong and healthy, from high-bred free-range White Leghorn stock. Prices on application. Western Hatchery, W. S. Waldorf, Petaluma.

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and Kill Lice and Mites
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CHARLES WEEKS,
Palo Alto, Cal.



The Home Circle Page of the Pacific Rural Press

MRS. BEST'S LETTER.

My dear Friends:

I had the pleasant experience last week of being shown the wardrobe of a young lady who was going away to school and I was so charmed with the daintiness and simplicity of it that I want to tell you about it.

This wardrobe was for fall and winter use, so aside from a ready-made silk suit she owned, there was no provision for summer clothes.

A simple little pongee suit made in a belted style and gored skirt trimmed with the new stitch in white, I told you about a few weeks ago, and to be worn with a white silk blouse with deep hemstitched sailor collar was expected to be of much service for school wear. This had a white leather belt, and with white shoes made a very harmonious costume.

An attractive white garbardine skirt was made with a yoke, with two large pearl buttons on each side and a circular piece set on. This also had three rows of the new stitching around the bottom about six inches apart. For a wrap with this, she had a rose jersey cloth sweater, made with a large collar and cuffs of the same material with a white band on the edge. A soft belt that tied in front and large white bone buttons completed a most attractive garment.

For afternoon wear, she had a rose-colored flowered silk, made with fitted waist, square neck and tight sleeves, finished by a flaring circular ruffle. The skirt was made very full, with a pannier, effect at the sides that lifted it a little and finished at the bottom with a heavy cord. The skirt was shirred on to the waist and was to be worn without a girdle.

There were two evening dresses, one being of pale green made in a pointed tunic over an underskirt of lace ruffles with an underwaist of net and full, puffy sleeves with the silk coming up to the shoulder in a graceful line. This tunic was stitched in the same fancy stitch in three different colors, pink, blue and green, and the girdle was of ribbon of the same shades, sewed together and ending in a rosette at the back.

The other evening dress was a two-tone, pale blue Faille silk—it was to be the "really party" dress, so was made a wee bit lower in the neck and sleeveless except for a frill of lace.

The skirt was very full, trimmed with pink ruffles that curved up on to it, each ruffle ending in a rose made of silk. The waist was almost surplice in effect and the neck was outlined in a gold lace that also formed the sleeve.

All of these garments would be suitable for any girl who was to be away from home or at home for that matter, but the girls at school are very busy and have no time to make clothes during the term, so of necessity must have their wardrobes in better condition. Yours devotedly,
Rosabella Best.

The very newest lamp shades, made of silk, have bead fringe.

INDIA CURRY, RICE BORDER.

Wipe slice of veal, weighing one and one-half pounds and cook in frying-pan without butter, quickly searing one side, then the other. Cut in one and one-half inch pieces. Fry two sliced onions in butter until brown, remove onions and add to butter, meat and one-half tablespoon curry powder, salt and cover with boiling water. Cook slowly until meat is tender. Thicken with flour and add one teaspoon vinegar. Serve on platter, surrounded by boiled rice.

BEEFSTEAK PUDDINGS.

[In answer to the request, printed a few weeks ago, from a lady at Alameda, the following has been received from Los Angeles, and while the matter is a little long it is too valuable to give only to one person. We believe several hundred women of California will read the recipes with interest, and we wish to thank the writer for her helpfulness.—Editor.]

I have written out one recipe for steak and kidney pudding which I have always considered good, but have usually made it in one deep basin. There can be no reason, however, why it should not be either steamed or baked and made in individual dishes. In this case, however, I would certainly cook the meat first, using for the purpose a casserole. (Those useful dishes have such good fitting covers, all the juice and steam is kept in and excellent results follow.) If steamed it is not necessary to tie up in cloth. If your casseroles have no covers turn a small saucer or plate upside down over the top of crust to keep steam from crust.

If baked, and I think this is probably what you are referring to, make a good rich short biscuit crust, put meat mixture into whatever dish you wish to use, cover with crust and bake. A bottom crust or not as pre-

ferred. The drawback to small puddings is, the gravy does not seem to be as rich and plentiful as we English people like it. This however could be overcome by careful watchfulness while the pudding is baking by adding a little as it evaporates through the crust (cut a hole in it) and serving additional in a separate dish.

If I have misunderstood your request and sent you something you did not want, write me direct and I will write you again.

In addition to the one I thought you wanted I am enclosing two others, slightly different. The one with potato crust sounds rather as if you had robbed the garbage pail, but it is a nice supper dish in cold weather when served very hot. This is altogether too lengthy for such an important paper as the Pacific Rural Press so I am asking the editor to send it you direct. Cordially yours,

(Mrs.) A. Stanton.

Box 1048, Los Angeles.

Beefsteak and Kidney Pudding.

Ingredients.—2 lbs. steak, 2 kidneys, seasoning to taste of salt and black pepper; suet crust made with milk in the proportion of 6 ounces suet to each pound of flour.

Mode.—Procure some tender steak and divide it into pieces about an inch square, and cut each kidney into eight pieces. Line the pudding

dish, which should be quite deep, with crust made in the above proportion with suet and flour, leaving a small piece to overlap the edge. Then cover the bottom with a small portion of the steak and a few pieces of kidney; season with salt and pepper and a little flour or cornstarch to thicken the gravy, then add another layer of steak, kidney and seasoning. Proceed in this manner till the dish is full, when pour in sufficient good stock to come within two inches of the top of dish. Moisten the edges of the crust, cover the pudding over, press the two crusts together that the gravy may not escape, and turn over the overhanging paste. Wring out a cloth in hot water, flour it and tie up the pudding. Put it into boiling water and let it boil for at least four hours. Replenish water with more boiling, so that the pudding is kept at the same temperature as nearly as possible during the entire time of cooking. If, when the cloth is removed, a small round piece is cut from the top of the crust it will be quite possible to turn it out into the dish for serving without the pudding bursting.

Note.—This is a large pudding and enough for 10 very hungry "boys" after "hubby" has had a generous share.

Personally I think it tastes better if made in one large dish, but steak may be stewed first and then made into as many small puddings as required to feed one apiece, cooked in a steamer, using a casserole dish just enough for one, and instead of turning it out, serve in the casserole, and at serving time remove the top crust and substitute the individual favorite relish. Say a slice of tomato and a spoonful of dressing, or a couple of stoned olives with cavity filled with the favorite dressing or asparagus tips, a touch of mushrooms, an oyster, in fact anything to give variety and the little touch of individualism. If however the crust is really liked and wanted, it could be served on a small separate dish with a generous spoonful of—again the favorite relish or sauce either sweet, savory, or piquant, or even covered with creamed oysters, etc. The ways of varying the same things are legion.

I am supposing the pudding is for home and not for sale nor a restaurant.

If you want to bake them in individual dishes, the casserole again would be nice. Use a bottom crust or not—if served in the dish it is baked in I would suggest about 1/4 to 1 inch strip of crust around the sides to join to the top crust and keep in the gravy. Fill with steak, etc., previously stewed, put on top crust, and bake.

The crust for baked puddings or pies would of course be a good rich, short biscuit crust. There would be some gravy or sauce left over in the casserole where the steak had been stewed. This could be served hot in separate dish if wanted.

Mirrors of any shape or size are being much used—they are all framed in gilt, some simple and others more elaborate in design.

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MY FRIEND. By Blaine C. Bigler.

My dog and I are the best of friends,
We always go together;
Over the hill where the woodland
ends,
Scrambling through brush and
heather;
Down by the mill where the river
bends,
Through any kind of weather.
Down through the woods through
the purple haze;
Down where the leaves are falling;
Through all the gold of the autumn
days
Filled with the west wind's call-
ing;
Skipping along by the streamlet's
maze,
Where the waterfall comes brawling.
Crossing the fields in the twilight's
glow,
Where soft the wind comes creep-
ing;
Where e'er I lead he's sure to go,
From morn till the stars come
peeping;
So that is the reason I love him so—
He's faithful, awake or sleeping.

HOW THE BEAN BROTHERS WOKE UP.

"Here are five little Bean Brothers for you," said mother one morning, dropping something into Boykin's hand. "They have been in bathing all night long."

"With their clothes on too," exclaimed Boykin; "their little white coats are all wrinkled."

"You'd better put them to bed right away," suggested mother. "Here's a flower-pot on the sunny window-sill. The fresh soft earth will make a fine bed for the Bean Brothers. And if they have a good nap, who knows what will happen?"

So Boykin put them to bed in the soft, brown earth and covered them

up snugly. Day after day the Bean Brothers slept soundly and showed not a single sign of waking up. Then one morning one Bean Brother poked up a tiny bit of slim green back, out from under the bedclothes, but his head he kept safely underneath.

"Come, get up, you sleepyhead," cried Boykin, and, taking hold of Bean Brother's back, he pulled him straight out of bed.

"Oh, see," he called to mother, "Bean Brother has a leg, too, a long spindly one."

"Better put him back again, if you can, and let the others sleep a little longer. It's not time for them to be up yet," mother told him.

Next day the other Bean Brothers had poked up their little bent backs too, but Boykin only watched them and sprinkled their bed with fresh water. Day by day the Bean Brothers pushed up their backs higher.

"A funny way to get out of bed," declared Boykin; "they hump themselves up like green caterpillars."

Then one day the strongest of the Bean Brothers ventured to pull himself away from the warm bedclothes, but he could not stand up straight, and drooped his head sleepily.

"Oh, see, mother," cried Boykin, "Bean Brother has grown out of his old coat and split it in two."

"True enough, what Boykin had called Bean Brother's coat before he had tucked him into bed was hanging in two pieces to his side.

Pretty soon the other Bean Brothers pulled themselves out from under the bedclothes. Then little by little they all straightened up and lifted their green plummy heads. The old coats clinging to their sides shrank and shrivelled and finally dropped off altogether.

Boykin picked up two of the wrinkled bits.

"His coat is all worn out," said he.

"He won't need it again," mother explained. "But it was a good coat in its day and a wonderful one too, for it not only kept Bean Brother warm when he was a tiny baby, but it gave him food so that he could grow into this nice tall Bean plant."

"And will he always live in this flower-pot?" asked Boykin.

"No," answered mother; "when he is stronger we will take him and his four brothers out of this bed and put them in a corner of our big garden, where you can watch them."—Rebecca Deming Moore, in Mothers' Magazine.

CAMPING OUT OUTFITS.

Encourage the small boy to camp out, even if only one night and then very near home, by providing him with a sleeping bag and a few utensils to cook and eat with. The sleeping bag need not be anything but a pair of dark blankets, folded over and sewed across the end and side, one end being left open for him to crawl in. If he is susceptible to cold and you want a more luxurious article, use one pair of blankets and an eiderdown comfort and after folding them over, cover with denim. This makes a very tidy looking bag that will not catch the dust and is very light to carry.

A folding frying-pan and a small pail and tin cup are necessities and one of the knife and fork sets would



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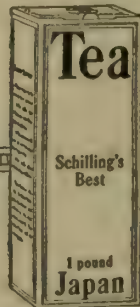
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delight him. These sets consist of a glass, into which fits a folding knife, fork and spoon, all of it being encased in a neat leather case. If a lunch is being carried, a knapsack is a convenience, but if not, have the canned supplies rolled up in the blanket and tie well with heavy cord or rope, fastening the ends together and carry over the shoulder.

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30x3 1/2	8.05	2.10	2.35
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34x3 1/2	10.95	2.30	2.55
36x3 1/2	12.05	2.40	2.75
38x4	13.20	2.50	3.10
38x4 1/2	13.85	2.55	3.20
38x4 1/2	14.05	2.95	3.30
38x4 1/2	14.70	3.10	3.40
38x4 1/2	14.95	3.15	3.50
38x4 1/2	15.05	3.20	3.60
38x4 1/2	15.85	3.30	3.70
38x4 1/2	20.25	3.85	4.30
38x4 1/2	20.85	3.95	4.35
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GETTING RID OF ANTS.

Food supplies that are attractive to ants must be kept in glass or tin receptacles if a house is troubled with this pest.

A poisonous syrup made of one pound of sugar dissolved in a quart of water, to which 125 grains of arsenate of soda has been added, will be found to be effective in most cases. This liquid should be boiled and then cooled and strained and is then use to moisten sponges that are placed where they can be easily reached by ants. As this is poisonous to human beings as well as ants, it must be used carefully.

The best and safest way is to place small sponges in tin cans that have small openings at the sides but are covered tightly. This liquid can be poured in until the sponge is saturated and then the cover put on and the can placed in the path of the ants.

Old baking powder cans would be fine for the purpose and there should be several of them.

It is not advised to put these in the house but out-of-doors; as the theory is that if the ants are destroyed out of doors, there will be none to come in.

Of course, if the nests of the ants can be located, the colonies can be destroyed by either kerosene or gasoline, but as these substances are inflammable, care must be taken against the danger of fire.

HELPS FOR THE KITCHEN.

A large tray to carry dishes to and from the dining table is a great step saver and it is equally valuable to use in putting dishes away after washing.

A zinc-covered table is a most desirable thing in a kitchen. A zinc cover can be put on an ordinary table for about \$2 and the saving of work in scrubbing is considerable, besides the advantage of being able to place hot kettles there.

Have the kitchen table and stove at the right height for convenient work. It is back breaking for a woman to stoop over her work.

Use small paint brush to grease bread pans and cake tins.

A convenient arrangement to have over a cooking table is a shelf, with the utensils most used hanging underneath and condiments, salt and other materials placed upon it.

By all means, have a pair of kitchen shears. Use them for shredding lettuce, cutting figs and raisins, preparing grape fruit and the like.

Much time can be saved in cooking by having a goodly supply of handy devices, such as a meat grinder, cream whip, a good egg beater and standard measuring cups and spoons.

FASHION NOTES.

The slip-on sweater with open neck and sailor collar is one of the newest sweater designs, but it is becoming only to young girls and slender women.

Rabbit fur is very much in vogue again, for dress trimmings as well as neck pieces.

The very newest bracelet is of black ribbon with monogram or initial in brilliants.



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San Francisco, Aug. 2, 1916.

Wheat.

Export trade limited, but Eastern market has been going up for the past week, and has brought many Eastern inquiries into the northern market, causing some advance in club and bluestem varieties in both northern and local markets. Chicago wheat market jumped up 6 cents per bushel today but this is not yet much felt locally.

[f. o. b. San Francisco.]

Sonora wheat\$1.77½ @1.80
Northern club 1.77½ @1.80
Calif. club, cti. 1.75 @1.80
Northern Bluestem. 1.87½ @1.90
Northern Red 1.82½ @1.92½

Barley.

The future market continues very strong, with active trading in December grain, and the firmness is reflected in spot values, though current demands are not especially heavy. Choice bright feed is a little higher. Little is reported sold in nearby districts, and growers are taking rather a firm view, which seems to be justified by conditions. Some 70,000 tons of new barley had been exported up to Aug. 1. New crop estimated between 450,000 and 475,000 tons of bright plump grain. This is 75,000 to 100,000 tons shorter crop than last year, and the movement is much freer than at this season last year.

[f. o. b. San Francisco.]

Shipping, cti.\$1.50 @1.52½
Choice feed, cti. 1.45 @1.50

Oats.

Values show no further change, though seed grades are very firmly held and find a gradually increasing demand. Feed oats also are firm, and are moving freely.

[f. o. b. San Francisco.]

Red feed\$1.65 @1.75
Red seed 1.80 @1.90
White 1.62½ @1.65
Black seed 2.50 @3.00

Corn.

Eastern crop conditions have been bad, causing a further advance in Eastern and local yellow grades. The advance is reflected in higher prices for Egyptian and Milo, which are getting rather scarce.

[f. o. b. San Francisco.]

Eastern Yellow, cti. ..\$1.95 @1.97½
Milo Maize 1.55 @1.65
Egyptian 1.70 @1.75

Beans.

It has been impossible to make many sales at the extreme prices that have been quoted for the last few weeks, the demand having fallen off greatly. While supplies are now lighter than usual in the country, there is still considerable stock scattered among the trade, which the holders are getting anxious to dispose of. Accordingly there is an easier feeling in the market, and several grades are lower this week, notably large white, pink, cranberry, and bayo beans. It does not look now as if there would be much recovery; and the appearance of new beans is expected to bring prices down materially.

[On wharf, San Francisco.]

Bayos, per cti.\$5.75 @6.00
Blackeyes 3.50 @3.75
Cranberry beans 5.50 @5.60
Horse beans 3.25 @3.40
Small Whites (south) .. 9.75 @11.00
Large Whites 8.00 @8.25
Pinks 6.50 @6.60
Limas (south) 6.00 @6.50
Red Kidney 8.00
Mexican Reds 5.50 @5.60
Tepary beans 4.50 @4.75

Seeds.

Seed market still dormant, with little offered, though demand for cover crops will appear within the next month. New alfalfa has not yet appeared, old selling at 21 to 22c per lb. Sweet clover is cleaned up, bur clover selling at 3½c in burs and 12½c threshed; stocks of vetch and field peas are cleaned up, though new stock will soon be in.

Hay.

Arrivals have again dropped off a little, due to shortage of cars. Much

of stock received comes down the rivers. Dealers believe there is a larger movement into country warehouses, which will add to the cost of handling; and stock so held will not be sent in until prices improve. From other reports, however, it would seem that many growers are merely holding their hay back in the belief that general conditions justify an advance, in view of the shortage of both hay and grass. Local demand is limited, and while fancy hay is scarce, offerings of medium grades are sufficient for current needs. So far little buying for this market has been done in the country.

[Carload lots, per ton, San Francisco track.]

Wheat, No. 1\$13.00 @14.50

been coming in of late, and prices have been cut. Cracked corn is higher, following the course of whole grain; and rolled barley is quite firm.

[Wholesale prices, per ton, carload lots, San Francisco.]

Beet pulp, per ton ... Nominal
Alfalfa meal, per ton. \$16.50 @18.00
Bran, per ton 28.00 @29.00
Oil cake Nominal
Cocoanut cake or meal 23.00 @25.00
Cracked corn 42.00 @43.00
Middlings 35.00 @38.00
Rolled barley 31.00 @32.00
Tankage 45.00
Rolled oats 33.00 @34.00

Vegetables.

Nearly everything on the list is coming in large quantities, and prices

Peppers, bell, lugs 40 @50c
Eggplant, lugs 40 @50c
Peas, lb 2 @ 3c
Tomatoes, lugs50 @1.00
Green corn, sack 1.50 @2.00
Okra, box 75c

Potatoes and Onions.

Potatoes continue very firm, and the new Salinas stock, now appearing, moves readily at high prices. Increase in onion supplies tends to weaken prices.

[On wharf, San Francisco.]

Potatoes, cti., Delta ... \$1.50 @2.00
No. 2 1.00 @1.50
Southern 2.00 @2.25
Salinas 2.15 @2.25
Onions, yellow 1.25 @1.50
Garlic, new crop, per lb ... 4 @ 5c

Poultry.

Buyers have been rather indifferent, and values are barely steady, young stock being especially dull. Hens are doing slightly better, with moderate supplies of outside stock. [Wholesale prices, San Francisco.]

Broilers, 18 lbs. to doz. and less, lb20 @21c
do, over 18 lbs to doz ... 20c
Fryers20 @21c
Hens, extra, per lb, colored 19 @20c
Small leghorn 16 @18c
Smooth Young Roosters, per lb. (3 lbs. and over) ...23 @25c
Squabs, per doz 2.00 @3.50
Geese, per pair 2.25 @3.00
Ducks13 @14c
Old12 @13c
Belgian hares 7 @ 9c

Butter.

The only change in the past week is a slight drop in firsts, extras being unaccountably a little lower than last year, though the July receipts were only 2,212,500 lbs., against 3,598,800 lbs. last year, while there has been some export movement. Five cars have recently been shipped from here for London via Montreal, and a number of orders are coming from the Antipodes.

[S. F. Dairy Exchange prices.]

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	26	26	26	26	26	26
Prime Firsts	25½	25½	25½	25½	25½	25½
Firsts	25½	25	25	25	25	25

Eggs.

The upward movement of extras has been resumed, though there are still fairly large offerings of pullets, and this grade is slow to advance. Arrivals in July were 1,174,290 doz., against 1,763,190 doz. for the same month last year.

[S. F. Dairy Exchange prices.]

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	28	28½	29	29½	30	30
Sel. Pullets	26	26	26	26	26	26½

Cheese.

Monterey cheese continues rather weak, with large arrivals. Flats are in limited supply, and have made a further advance of 1½c, while Y. A.'s are steady at the old figures.

[S. F. Dairy Exchange prices.]

Y. A.'s, fancy17
Fancy Calif. Flats, per lb. ...15½c
Monterey Cheese14 @15c

Los Angeles Dairy Prices.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	26	26	26	26	26	26
Flats	28	28	28	28	29½	29½

Deciduous Fruits.

Supplies liberal, and prices inclined to easiness. Loganberries and raspberries doing a little better, but blackberries and strawberries have both been going lower. Apples show very little change, Astrachans about cleaned up, Crabapples in excessive supply. Bartlett pears have stiffened up sharply, as there is a strong shipping demand and supplies of attractive stock are light. Apricots, practically cleaned up; peaches in excessive supply and prices even lower than last week. Figs steady at the old level, with limited offerings and a good demand. Plums doing fairly well, and show more firmness, with fancy stock up to \$1.50; prunes weak. Nectarines cleaning up and bring an advance. Cantaloupes in even larger supply than before, and with stocks piling up, prices have

Special Deciduous Market Report.

By J. L. Nagle, Sacramento.

August 1.—Practically 85 per cent of the tree fruit shipments from the State are either moving East or have been sold. Plums, except a few straggling varieties in the mountain districts, are all cleaned up, likewise a few late varieties of peaches. Bartlett pears, except in El Dorado county, Placer county and a few other districts, are also cleaned up.

Thompson Seedless and Malaga grapes are now moving in heavy supply from the Southern San Joaquin Valley, prices ruling exceptionally high and the demand very active, with prospects of its continuing so.

A few lots of Tokays have been shipped from the Winters district, but the movement of this latter variety will not begin from the San Joaquin Valley until about Aug. 15.

Competition from Eastern peach districts has not been very keen on account of the inferior quality of the fruit, due to unseasonable rains in Georgia and Arkansas. There are practically no Eastern peaches moving, and will not be for ten days or two weeks. The field is practically open for that period for California.

Reports from New York indicate

that the Chautauqua and Erie Belt expect to produce 4500 to 5000 cars of grapes, which is about 75 per cent of last year's crop—some districts 50 per cent, other districts full crop. This competition will not be very keen, however, as the demand for New York State grapes is increasing with the local grape juice factories. We look for practically a clear field for California grapes of all varieties and anticipate an unusually successful season.

The following prices have ruled for the week:

New York.—Bartlett pears averaged \$2.30; Wickson plums, \$1.53; Diamond, \$1.44; Duke, \$1.57; Giant, \$1.40; German, \$1.48; Kelsey, \$1.56; Hungarian, \$1.55; Tuscan peaches, 95c; Crawford, \$1.02; Elberta, 88c; Malaga grapes, \$2.16; Thompson Seedless, \$1.80.

Chicago.—Bartlett pears, \$2.28; Wickson plums, \$1.54; Giant, \$1.44; Duke, \$1.68; Diamond, \$1.70; Hungarian, \$1.46; Kelsey, \$1.40; Malaga grapes, \$1.31; Elberta peaches, 72c.

[Total shipments to date from California, 6078½ cars; to same date last year, 4284½ cars.]

Special Livestock Market Report.

REPORT.

The livestock market in general is stationary.

Hogs with exception of light hogs are a little stronger.

Lambs are coming in too freely, weakening the market to some extent. This condition will last only a week or so longer as by that time the bulk of the California lambs will have been marketed, and the demand will have to be supplied from the mountains and Nevada. An improvement in the market may therefore be expected.

The wool market is stationary. Merinos are still strong. Crossbreds slightly weaker, while seedy, burry and short wools are decidedly lower. [Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.]

Steers, No. 16½ @7 c
No. 26½ @6½ c

No. 2 10.00 @12.00
Tame oats 11.50 @15.50
Wild oats 10.50 @13.00
Barley 10.50 @13.00
Alfalfa 10.00 @14.50
Stock hay 8.50 @9.50
Straw, per bale35 @.50

Quotations furnished by Nicholls-Loomis Co., Los Angeles, August 1: Prices to consumers \$1 to \$3 per ton higher, according to quantity ordered, delivery, etc. Prices per ton to producers according to quality, f. o. b. Los Angeles: Barley hay, \$10 @14; wheat hay, \$10 @14; tame oat hay, \$12 @16; northern alfalfa, \$11 @13; local alfalfa, \$12 @15; stock hay, \$6 @9; straw, \$5.

Feedstuffs.

A good deal of alfalfa meal has

Cows and Heifers5½ @6 c
No. 24½ @5 c
Bulls and Stags4 @4½ c
Calves, light7½ @8 c
Medium7 @7½ c
Heavy6 @6½ c
Hogs, grain-fed:
100 to 150 lbs 8 c
150 to 250 lbs 8½ c
250 to 325 lbs 8½ c
Prime Wethers7 @7½ c
Spring Lambs, f. o. b.
country points\$5.00 @5.50

WOOL.

[Prices paid in the country.]
Red Bluff, years25 @27c
Sacramento Valley, year's ..19 @25c
Mendocino, year's31 @32c
Mendocino, 7 months'26 @27c
Southern, year's18 @21c
Southern, 7 months'15 @18c
Imperial Valley, year's17 @19c
Imperial Valley, 7 mos14 @15c
Nevada21 @23c

in most lines are rather easy. Best lots of string beans are doing a little better, though limas are quite cheap, and peas move slowly at the old figures. Cucumbers and summer squash are unchanged, while cream squash is offered at firm prices, and eggplant is lower. Tomatoes show no quotable change, with some fancy lots bringing a premium, though ordinary stock gets little attention. Green corn offerings have dropped, with a sharp increase in price.

[Wholesale prices, San Francisco.]

[On wharf.]
Cucumbers, 50-lb lugs40 @60c
String beans, lb. 2 @ 4c
Limas2½ @3c
Summer squash, lugs50 @1.00
Cream squash \$1.00

dropped. Watermelons are higher. Malagas, Muscats and Seedless grapes quite firm, while Fontainebleau are weak.

[Wholesale prices, San Francisco.]

Huckleberries, lb	.....12½ @ 15c
Currants, chest	.....\$3.00 @ 4.00
Loganberries, chest	.....5.00 @ 6.00
Blackberries, chest	.....2.00 @ 2.50
Raspberries, chest	.....7.00 @ 10.00
Strawberries, chest	.....3.50 @ 5.00
Apples, Grvnstein, 4-tier	.....1.00 @ 1.15
Alexander	......75 @ .85
Crabapples, lug	......35 @ .50
Pears, Bartlett, bx, No 1	.....1.50 @ 1.75
No. 2	......75 @ 1.15
Peaches, lugs	.....40 @ 75c
Peaches, basket	.....30 @ 40c
Figs, blk, bx, dble layer	......90 @ 1.25
Plums, crate	......75 @ 1.00
fancy	.....1.00 @ 1.50
lugs	......75 @ 1.00
Prunes, crate	......85 @ 1.00
Nectarines, crate	......75 @ 1.00
Cantaloupes, standard	.....
crate	.....1.00 @ 1.15
Watermelon, doz	.....2.00 @ 4.00
Grapes, Malaga, small box	......90 @ 1.00
Muscats, small box	......90 @ 1.00
Grapes, Thompson, sml bx	......90 @ 1.00
Fontainebleau, crate	......50

Dried Fruits.

About the only matter of interest in the dried fruit market at the moment is the expectation of the announcement of new prices by the peach growers' organization. They have already set a minimum price of 4½ cents to growers for dried strawberry and white freestones and clings. The minimum contract price of yellow freestones is 5 cents. Prices to the trade will be made public within a week. The trade seems reluctant to load up with any dried fruit unless it can be done at bargain prices, which this year is out of the question. Packers state that they are affected not only by the embargo on shipments to England, but that shipments to Scandinavian ports, which were large last year, are almost entirely stopped. A few new apples have moved at 6c, which seems to be fairly well established. Apricots have been marked down again, but very little can be bought at these figures; and packers are still holding to their last figures on prunes, the market on which seems to be deadlocked. Black figs are slightly lower, though white and Callmyrna figs are very strong, and growers at Clovis are said to have refused 10c for the latter.

[Net to growers, f. o. b. shipping point.]

Apples, new crop	.....6 c
Apricots, per lb, 1916	11½ @ 12½c
Figs, white, 1916	.....6½ @ 6¾c
Figs, blk, 1916	.....4 @ 4½c
Callmyrna, 1916	.....9 @ 10 c
Prunes, 4-size basis, 1915	.....5 c
1916	.....5 c
Peaches, old	.....5 @ 5½c
1916	.....6 c
Pears	.....6½ @ 7 c

[Associated Raisin Co. Prices.]

Fancy Seeded, 16 oz.	.....7 c
London Layers, 3-crown,	.....
20-lb. box, 1916	.....1.30
Imperial Clusters, 6-crown,	.....
20-lb. box, 1916	.....2.50
20-lb. box, 1916	.....1.30
cases, per lb	.....8¾c
Sultanas, 50-lb. cases, per lb	.....8 c

Citrus Fruits.

Citrus markets advancing in the East and steady in the Central West. Oranges in New York July 31 averaged \$3.50 to \$5.10, grapefruit \$1.50 to \$2.95. In Boston, oranges averaged \$3 to \$4.25, lemons \$7.10 @ \$8.15; grapefruit in half boxes, \$1.10 @ \$1.25. In St. Louis oranges averaged \$3.00 to \$3.95, lemons \$5.80 @ 7.25.

In San Francisco, oranges stand about as before locally, but very firm; grapefruit shows an advance, lemons and lemonettes bringing extreme prices, with further advances in sight following prices at shipping points.

Oranges, Valencia, fancy,	.....
box	.....\$3.40 @ 3.75
choice	.....3.15 @ 3.35
Grapefruit, fancy	.....3.25 @ 3.50
choice	.....2.50 @ 2.75
Lemons, fancy	.....6.50 @ 7.00
choice	.....5.75 @ 6.25
standard	.....4.00 @ 4.50
Lemonettes	.....3.75 @ 4.25

Honey.

Some of the local packers have made large purchases in the country, paying slight advances over the prices received last year. Local quotations are unchanged, and the market is firm, as there are no large stocks here and the demand is fairly active.

[Wholesale prices, San Francisco.]

Water white, comb	.....13 @ 15 c
Amber	.....10 @ 12 c
Water white, extracted	.....8 @ 9 c
Light amber, new	.....6 @ 7 c
Dark	.....3½ @ 4 c

Nuts.

A letter has been received by us from one of the packers dealing in almonds stating that the foreign crop was short, particularly Tarragonas. This caused some careful investigation on our part, and we learned from authentic sources that the Tarragona crop is about normal, but that the Jordan crop is somewhat short, although this latter variety does not affect the California market to any noticeable extent.

The California Almond Growers' Exchange recently announced to its trade that new crop prices would not be determined until some time after September 1st; it being the feeling of the Exchange that by waiting until crop and market conditions were better known that they would be better prepared to name a price fair to both trade and the grower.

We understand there is very little trading by the packers in new crop California almonds at the present time, as everyone seems to be waiting for the Exchange to announce their prices. A few growers, particularly the Guinda Almond Growers' Association, who have a light crop, have sold at prices considered very high, but other growers in the Guinda district have advised that buying at these prices has ceased.

Manager C. Thorpe of the California Walnut Growers Association advises on July 31: "Our present estimate of the walnut crop for the State of California is 12,250 tons. This is a shortage of 2750 tons over last season but still is above the average production of this state for the past five years. Up to this time all growing conditions have been very satisfactory, and barring any unfavorable weather conditions from now until harvest time, the nuts should be of unusually satisfactory size and quality."

"Los Angeles and Ventura counties will produce almost the same size crops as last season, the principal shortages occurring in Santa Barbara and Orange counties, both of which will be 25 per cent or more short of last season."

[Prices offered by packers f. o. b. shipping point.]

Almonds, 1916:	.....
Nonpareils, lb	.....17½c
I. X. L.	.....15 c
Drakes	.....13 c

Horses.

This week's local offerings include a good-sized lot of chunks and drafters, as well as a few mules. Conditions here show no very notable change, dealers reporting a very light demand, with continual difficulty in disposing of stock not of the military class at satisfactory prices; though the quoted range remains as before.

[Approximate values in San Francisco, based on auction sales.]

Drafters, 1700 lbs and up	\$ 250
Drafters, 1550 to 1650 lbs	150 @ 200
Chunks, 1350 to 1500 lbs	150 @ 175
Wagon horses, 1050 to	.....
1350 lbs	110 @ 150
Green mountain range	.....
horses, 950 to 1200 lbs.	20 @ 75
Farm workers	50 @ 100

Hops.

The new harvest will start within a few weeks, and meanwhile there is nothing doing, as growers are asking more than buyers are willing to pay at present.

Sacramento, 1915	.....8 @ 9c
Mendocino, 1915	.....8 @ 11c
Oregon, 1915	.....8 @ 10½c

Groceries.

Canned salmon is very scarce and firm, with talk of an advance on the new pack. Large hams are firm. Some brands of coffee are easier.

Washing soda is weakening. Canned tomatoes and pie apples are firmer. Crackers tend upward. Flour and sugar are steady as before.

Publisher's Department

A Military Necessity.—Patrons of the Rural Press will note the use of a poorer quality of paper this week. The use of news instead of book paper is necessitated by the doubling of the price during the past few months. As a matter of fact, the quality of paper used in this issue costs 50 per cent more than the book paper we have used cost last year, and even at the price, the fact of securing enough paper to meet our needs demands some effort. Rather than raise the subscription price and advertising rate, we chose to use news paper, but hope to resume the use of book as soon as prices recede. The high price of paper is said by paper mills to be caused by their inability to supply the American demand. In addition, extra trade has been forced upon them by South American users who have been cut off by the war from their usual supply from Europe. The government has commenced an investigation of the paper situation to determine whether the prices are fair and the situation can be alleviated. Paper manufacturers say they are kept awake nights trying to meet demands, but certainly they have no need to lose sleep looking for trade or fear of bankruptcy.

Work of a Good Farm Paper.

Permit me to say a few words of gratitude to the Pacific Rural Press. I have read many agricultural, horticultural, and commercial papers and bulletins; but have never spent time more valuably than in reading the Pacific Rural Press. Such interesting subjects appear weekly in your paper that one can never afford to throw aside an issue without first acquiring a full knowledge of its contents. Many people do not consider the value of farm papers nor appreciate the work of our learned professors and others who lead them to preserve their soil by other methods than by merely "turning it over." Although this commercial world of ours is so great, we are enabled to know what people are doing. In no other way can men work together, help each other or deal prosperously than by knowing what other people want or what discoveries they have made than by having a reliable farm paper widely distributed to subscribers. If any one finds some way in which he may improve old methods, let his fellow-men know that they may also make progress. Farmers are the men who are most depended upon by all other people and they should be paid fairly for what they produce: therefore let them stand firmly together, know the real values, unite to promote progress and be respected.

Andrew A. Azevedo, Jr.

Agriculture and Life.—A text-book for Normal Schools and Teachers' Reading Circles, a new book, by Arthur D. Cromwell, M. Ph. In this book the author takes up agriculture in sequence, the home folks gather hay and grain in the fall; as winter comes along the farmer begins to prepare for sheltering plants and animals, then to feed the stock and to plan work for the next season. As spring approaches they become interested in the soil, crop rotations, plowing, etc. All kinds of farm animals and crops are treated of in this 360 page book, which is also handsomely illustrated and bound in cloth. Published by the Lippincott Company of Philadelphia.

Advertising Pays.—I have been advertising in the Pacific Rural Press for two or three years and I get more returns than from all the other advertising I do. I think, of fifty letters received, forty-five of them would mention having seen my ad. in the Pacific Rural Press. I like your paper and feel it a good one to advertise in. W. H. Browning.

Breeder of Big Polands.
Woodland, July 28.

CORRECTION "NEW METHOD FOR CANNING OF VEGETABLES."

To the Editor: In preparing the article under the above title appearing in the issue of the Pacific Rural Press for July 29, the writer made a very serious omission in the formula for the brine for peas. The formula should include 7 ounces of lemon juice per gallon of water to furnish the necessary acid, as follows: Water, 1 gallon; sugar, 4 ounces; salt, 2 ounces; lemon juice, 7 ounces. If the lemon juice is not added the peas must be heated for three hours instead of the one hour recommended where the juice is added.—W. V. Cruess, Berkeley.

Classified Advertisements

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

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LIVING EXPENSES REDUCED THROUGH CO-OPERATIVE BUYING—Write for catalogue and particulars. Pacific Co-operative League, D236 Commercial St., S. F.

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PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency. Savings and Loan Building, Stockton, California. Established fifty years.

TO REDUCE THE HIGH COST OF LIVING, send for our Wholesaler to Consumer Catalog. SMITHS' CASH STORE, 106 Cay St., San Francisco.

ARAUCARIA BIDWILLI—The choicest and hardiest shade tree known. Wild Plant Improvement Gardens, Santa Ana, Cal.

WANTED.

WANTED—ABOUT SIXTY YOUNG MEN and women to enter WESTERN NORMAL on August 28, 1916, to prepare for teaching. Western Normal graduates secure and hold good positions. We assist graduates to secure good positions and promotion. We also give a two-year high school course. For information, address WESTERN NORMAL, J. E. Humphreys, Principal, Record Bldg., Stockton, Cal.

WANTED—Superintendent to take charge of farming operations on large ranch in Oregon. Address, stating age, if married, size of family, experience, references, and salary commanded heretofore. Pacific Rural Press, Box 1.

AMERICAN, married, experienced, wants position as foreman or superintendent, orchard or farm. Reference. Box 224, Pacific Rural Press.

WANTED—Reliable solicitors for country paper. Must furnish bond. 217 Underwood Building, San Francisco.

LAND FOR SALE.

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WANTED—Farms, large and small, in all parts of the State. Our system of placing owners in direct communication with buyers has brought us hundreds of applications for farms. WHAT HAVE YOU TO OFFER? Write for our listing blanks. WESTERN FARMS BUREAU, 660 Market St., San Francisco.

EXPERIENCED FARMER with capital desires to lease either a good Deciduous Fruit Orchard, or Stock and Alfalfa Ranch, or a combination of both. There must be plenty of water available and be situated in a healthy part of the State. Box 225 Pacific Rural Press.

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HAVE 50 ACRES fine irrigated fruit land. Will make very attractive sale offer to practical orchardist with some capital. Address K. T. Romo, Soledad Monterey country.

WANTED to hear from owner of good ranch for sale. State cash price and description. D. F. Ruch, Minneapolis, Minn.

WANTED TO RENT a dairy ranch on shares. Agricultural College graduate. Box 226 Pacific Rural Press.

FOR SALE—Nicely sheltered ocean shore land for a home or an investment. J. W. McMillen, Gualala, Cal.



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"The farmer needs to know that he is getting *quality* in the powder that he is purchasing," says the *Western Farmer*. "If he secures the right kind of powder, the cost of removing stumps is greatly lessened."

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STUMPING — AGRICULTURAL

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We issue five illustrated books, every one of them worth dollars to farmers who have stumps or boulders to remove, trees to plant, ditches to make, or fields to subsoil. Mark in the coupon the subjects that interest you and the books will be sent *free*.

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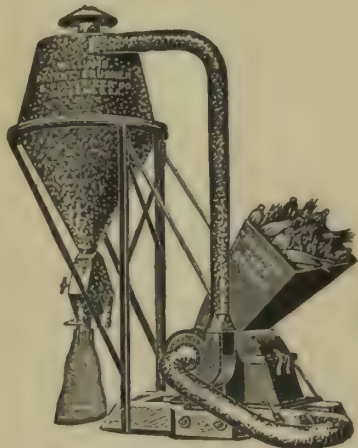
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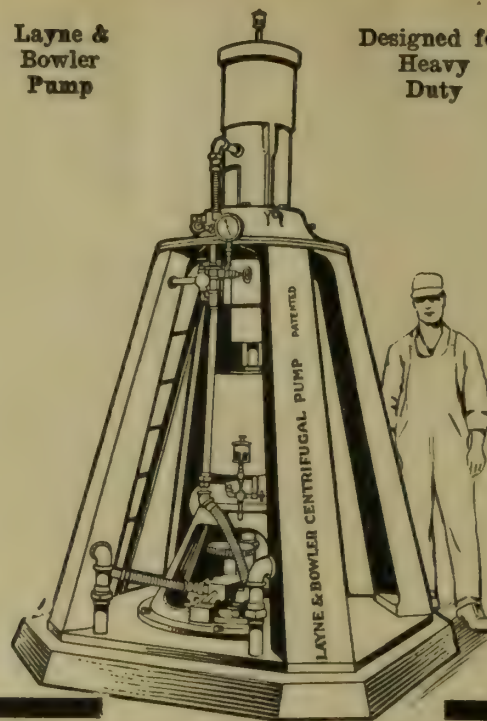
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Designed for
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Duty



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This type of pump is designed for lifts of from 200 to 1500 feet, and the weight of the shafting is suspended upon a thin film of oil which forms a perfect bearing. We manufacture other types and sizes to suit various requirements.

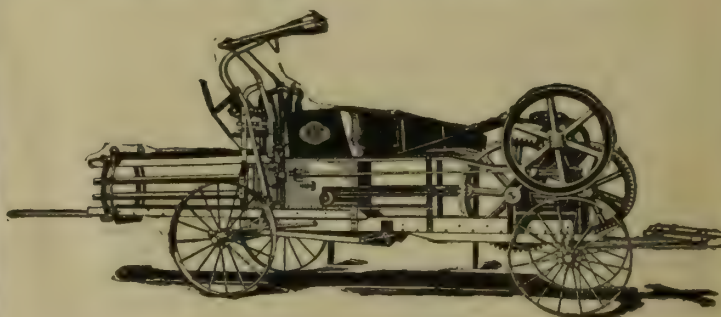
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The line consists of one and two-horse presses, motor presses, belted jack presses and fast power presses. The one-horse press is made in 14 x 18 size only—all others in 14 x 18, 16 x 18, and 17 x 22 sizes, the accepted standard. The capacities vary from a small horse power press for the man who wishes to bale a little hay, to the largest, fastest custom power presses ever required.

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THE PACIFIC RURAL PRESS

SAN FRANCISCO

AUGUST 12, 1916.

LOS ANGELES

Plant Orchard Cover Crops Soon.

Early September is the Best Time to Sow Orchard Cover Crops Where Water is Available. Legumes are Better than Grains, Because They Add Great Quantities of Nitrogen to the Soil from the Air.

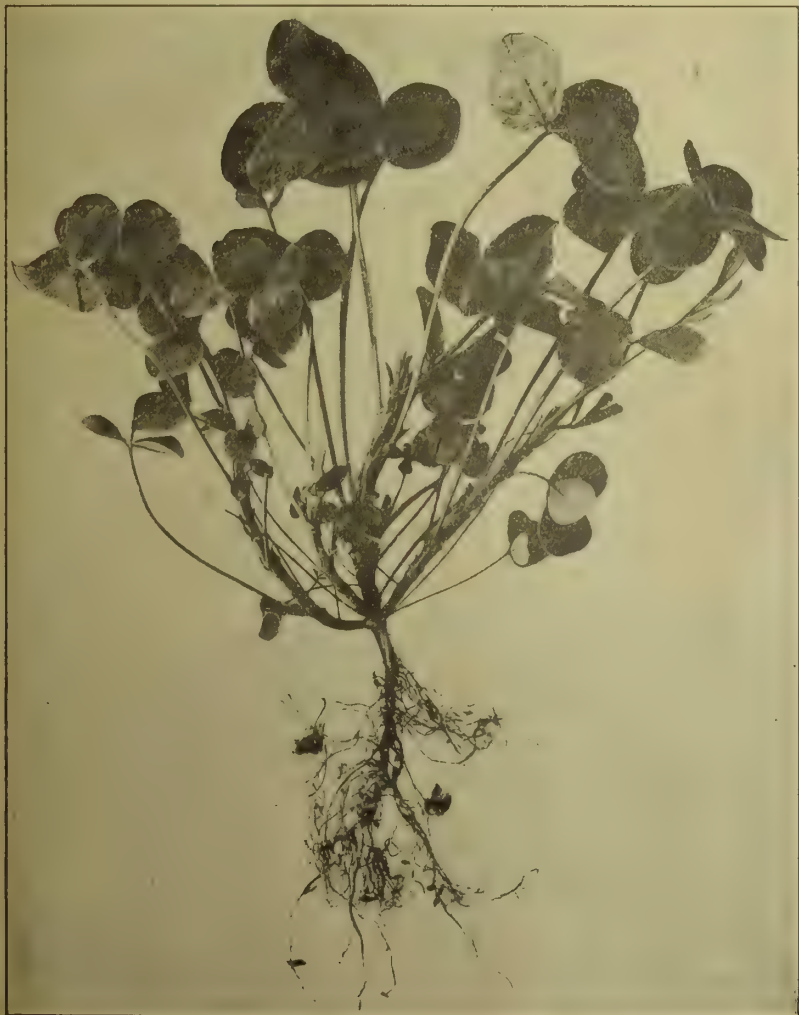
[Written for Pacific Rural Press.]

ORCHARD cover crops are legumes, grains, grasses, etc., grown among fruit trees to add to the fertility of the soil, to improve its mechanical and bacterial condition, to shade the ground in summer and prevent heat and drouth from killing the bacteria which make plant food available, and to prevent washing of the soil in winter.

There are some dangers in use of cover crops. If there is not water or plant food enough for them and the trees while both are growing or

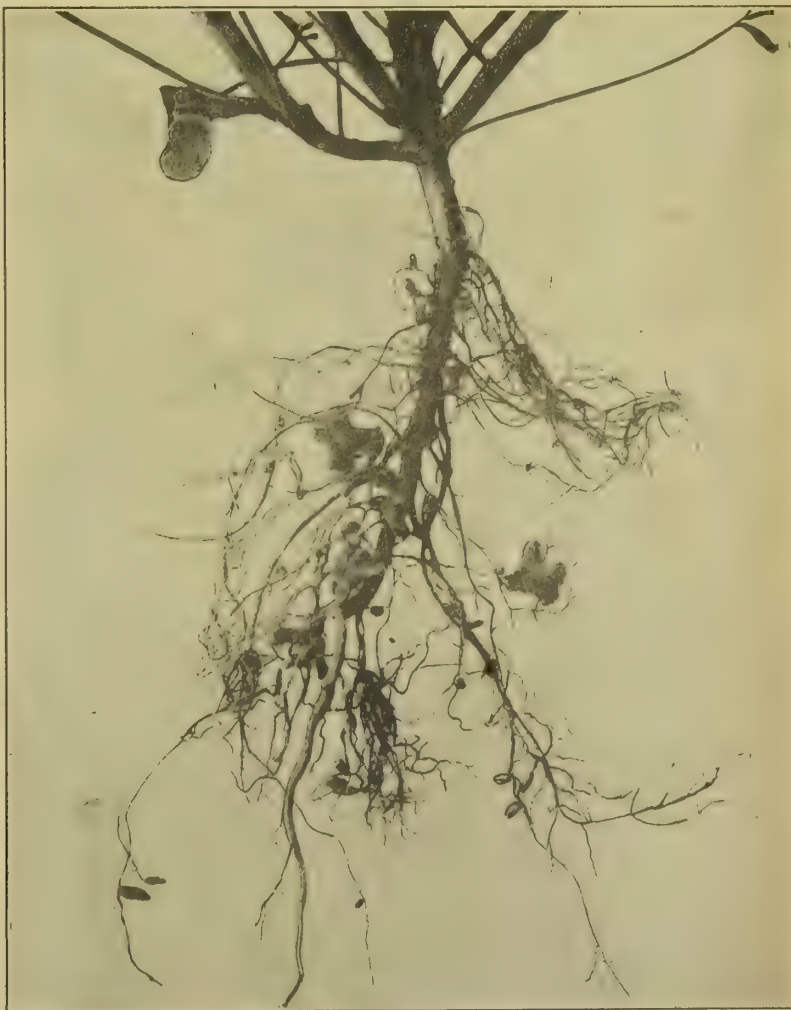
baker of Tehama county who has used alfalfa 10 years, C. H. Schmidt of Fresno county who plants it in strips, H. L. Letcher of Tulare county who plants it solid, F. R. Shafter of Santa Clara county who has used it five or six years, and D. C. Lefferts and J. K. Lyon of San Bernardino county who mulch with alfalfa hay. We have noticed orchards and parts of orchards in which alfalfa had unmistakably damaged the trees by usurping the insufficient moisture.

White sweet clover is the only biennial, its virtue lying in its very deep subsoiling root system, as well as the other advantages of legumes. About two tons of seed were sown in the Redlands-Highlands district in the spring of 1915. Wm. Bristol of Highlands, who has grown cover crops on one place 20 years, approves white sweet clover where there is enough summer irrigation. It makes greater stalks than any other. J. W. Casada of the same county has grown this cover crop five years. F. P. Stratton of Tehama county is another booster. He says he has seen sweet clover roots 18 inches deep in one season. W. M. Mertz of Riverside



MELILOTUS PLANT.

Young Melilotus Planted in the Black and White Grove, Lindsay, late October, 1915, and Photographed January 10, 1916. The Root is Shown in the Right Hand Picture, Half Its Actual Size. Where Planted Thickly, the Melilotus Grows More Upright than the Picture Shows.



ROOTS.

fruiting, the trees suffer. If they are left growing too late in spring where there is no irrigation, they dry the ground so it can scarcely be cultivated, and injure the trees correspondingly.

Our summer cultivation of a repeatedly sun-dried and heated soil has a great tendency to remove the upper few inches of soil from all advantage to the trees.

Both legumes and non-legumes are grown for cover crops. The former add to fertility. The latter do not, but may make it more available; and they also add humus and make hard soils friable.

Deciduous Cover Crops Popular.—Most of the cover crop acreage is among the citrus orchards of Southern California. The past two years have seen a wonderful increase of cover crops in deciduous orchards of Upper California.

Three seasonal classes of cover crops are grown quite largely all over the State: winter, summer, and perennial.

Alfalfa is about the only perennial. Instances of this are F. H. Bru-

Experiment Station notes that it is remarkably free from insect pests.

Annuals.—The principal annual cover crops grown in California are vetches, Melilotus indica, bur clover, grains, Canada field peas, fenugreek, alfalfa, beans and weeds.

Oregon, German, or common vetch is the commonest variety, with hairy vetch, purple vetch, and black bitter vetch in much less quantities. All varieties are badly subject to aphids, though purple vetch seems not to be attacked until it has made great growth. It makes the greatest tonnage of all winter-growing cover crops, but seed is unavailable. It is a great deal grown in Oregon; and many Southern Cal. growers used it in the season of 1914-15. The Limoneira ranch had 300 acres of orchard in purple vetch that season and endorsed it highly. The Hardison Ranch Co., also of Ventura county, found black bitter vetch did not make satisfactory growth. Common Ore. vetch was very buggy and partly smothered where planted 40 lbs. per acre with an equal amount of barley. Rye did

(Continued on page 148.)

PACIFIC RURAL PRESS

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Member Standard Farm Papers - Member Audit Bureau of Circulation

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EDITORIALS

THE WEEK.

EVERYTHING indicates that our California fruit industries will take an unprecedented and generally unexpected stride forward as the result of this year's experience. We say "unexpected," because we surely had a winter of discontent, through apprehensions born of embargoes, alleged ship-famines and buyers' pessimism—all of which have been evolved into most glorious summer by the force of free buying, made possible by widespread prosperity in the consuming regions of this country. In this way the current trade may be looked upon as unexpected in volumes and values of transactions, and yet this summer's experience is just what might have been most rationally expected on the threefold basis of the truer and wider appreciation of the delight and desirability of fruit-foods, the wide prevalence of ability to purchase them by a nation of such vast and rapid development as the United States, and the natural and industrial capacity to produce fruit foods which California proudly possesses. It is, of course, impossible to measure the new greatness of the present year, because we are now but on the threshold of its chief transactions in late season movement of fresh fruits, and have the operation in canned and cured fruits still largely before us, with rolling up vast volumes of supplies still in progress. But one can get a hint of the way things are going from a study of current prices as they appear in our market columns. There is also a pertinent suggestion in the remarks credited to C. B. Mills, president of the Pioneer Fruit Company, as follows:

"The situation is unprecedented; The East is crying for fruit and we are not able to supply them with more than 75 per cent of what they want. Orders are piling in here so fast that we are forced to turn them down every hour. The other shippers are in the same position."

Preliminary figures are also significant. Up to the first of August the eastward movement of fresh deciduous fruits is fifty per cent greater than last year—and last year was the greatest ever. Of citrus fruits, last year's shipments were 46,000 cars; this year's, thus far, 40,500, with three months' work ahead. It looks now as though the year's shipment of fruits and fruit products from California would aggregate 200,000 10-ton carloads—more than twice as many as a decade ago.

STANDARDIZATION AND PUBLICITY.

LEST anyone may claim that this year's experience is accidental and caused by distant purchasing ability which may not endure, we hasten to say emphatically that the enlarged distant demand is not founded upon this fortunate incident, which merely causes California preparedness to work faster, but otherwise exactly as foreseen and calculated. The fundamental conditions upon which the trade expansion rests are three: the production of plenty of fruits of the kinds fittest for the trade; the wide prevalence of standardization, which gives the consumer the worth of his money; the organization for generous and attractive publicity, which makes the consumers' money burn holes

in their pockets. If these fundamental forces had not been at work, this year's experience would not have been possible to any such extent as is now being realized.

And the lessons from these facts should be diligently heeded. Planting should be continued with varieties well tested and found suitable; not with varieties the claims of which rest upon prophecy. Our products must increase on the basis of canners' preference, of driers' experience and of shippers' results in fresh-selling. The old biblical injunction, "Prove all things; hold fast that which is good," should be inverted in commercial fruit planting—hold fast that which is good; prove all things, which are offered as better, before planting on a commercial scale. Do not dream of getting the start of the community by planting the largest acreage of a new thing. It is apt to make you a grafter instead of an upstanding, confident producer.

One of our associates has given much time and care to writing of the details of standardization, and he will continue in this line. There is wide agreement among those interested that standardization is the most effective advancement agency which has ever been invoked in the development of California fruit production. It is fine to see this policy, which is so sound in theory, working out so well in practice so soon after its adoption. It is not perfect in its details and organization, and should be improved, so far as possible, by the next Legislature. This was the conviction upon which the Visalia Fruit Growers' Convention proceeded last November, and one need not be surprised to see the inquiry-organization, which it created, rise soon into action, phoenix-like, from the ashes of the spite-burning to which the San Bernardino assembly tried to reduce it. It is just the right time to proceed in this direction, for the experience of the current season has yielded new light for revision. The work of the county horticultural commissioners is showing them capable of higher functions in the executive horticulture of the State. They have been sitting as watchdogs for bugs until tails are growing on some of them. It is time for them to arise and assume a most important part in the public marketing machinery of the State, and thus become more effectively promotive of the prosperity of fruit-growers.

As for publicity through publications and demonstrations in consuming regions, does it longer need favoring argument in the face of the results obtained by the citrus growers, the raisin growers and others? Certainly not. The elegant advertisements now appearing in most popular Eastern journals, conveying so artistically the suggestive call of taste and wholesomeness in the selection of most delicious and nutritious foods, are not only multiplying the demands for such foods, but are indirectly deepening the world-conviction that California is the place for those who wish to live well. When all our organized groups of producers get to making such representations, each for its own line of production, California will enter upon a new era of appreciation in all parts of the world.

"TRADE FOLLOWS THE LOAN."

THE high financiers of this country are stirring up their constituencies to a better understanding of the fact that the installation of Uncle Sam as the gold-bug of the world does not mean that he is to be the supreme international miser, but that he will be using his advantage for the upbuilding of vastly increased trade in all American manufactures and productions. The more of this surplus wealth he lends to others the greater will be the demand of the debtors for the lender's goods to grow with in their own development. As the National Bank of Chicago says in its August circular:

More important than the opportunities to trench ourselves commercially in the markets of the world are the opportunities to supply the capital for foreign commercial and industrial developments. If we would profit from the experience of the older nations which have held those markets before us, and incidentally solve the question as to our retention of them after the war, we would adopt no better slogan than that of "Trade follows the loan."

Now we are not expositors of high finance, and therefore have no business with these golden dreams of national financial supremacy, except to say that it often happens that economic policies are just as truly operative toward the same ends in the attitudes of classes and individuals toward each other as they are in the relations of nations. For example, it is true in the same way, but not to the same extent, that when a country banker, or a city banker doing country business, makes a loan to a wise farmer for a wise productive purpose at an interest rate and for a length of time which enable him to wisely come through with his wise scheme of production, said banker not only gets fair pay for his service, but he helps every person in the community to render more service and to get fair reward for it. This is what "rural credit" reforms aim at, and this is what they are doing all over the world—except in the United States and in other half-baked countries, which need to have their attitudes toward country loans turned over and warmed on the other side. All countries, except those which are warm only on one side, have found out that "trade follows the loan," and have experienced the general advantage to all which comes from building up agriculture with favoring fairness to the doers of it. When we get money, at fair rates and terms, throughout the country to improve land and increase its productivity, to enable all who are handling land to get better livestock, better machinery, and to develop the higher intellectual activity which these better agencies engender, the results will be not only better homes, greater comforts and higher citizenship on farms, but, as "trade follows the loan," we shall have greater prosperity for everyone who honestly ministers to the advancement of our fundamental industry.

THE BANKER AND THE PIG.

IN SPITE of our resolute defense of local financiers we are aware that we have some irreverent readers who persist in considering the term "banker" as a synonym for maturity in the pig. This being the case, they will think it quite proper that bankers should assume such paternal attitude toward the pig as the following statement suggests. It is written from Porterville that H. C. Carr, chairman of the committee on agricultural education and development of the California State Bankers' Association, has told a reporter that plans have been worked out by his committee whereby banks that are members of the association will furnish to schoolboys money on their personal notes for the purchase of pure-bred pigs, to be fed in accordance with scientific methods. The First National Bank of Porterville, of which Mr. Carr is vice-president, has announced that a fund has been set aside for this purpose and will be available this fall to the pig-growing boys of his parish.

This is a very commendable thing to do and we hope the thing will be arranged so that neither the boys nor the pigs will lose their skins—for there, again, we seem to be influenced in our language by the prejudices of the irreverent persons aforesaid. In lending money to boys to buy pure-bred pigs, the California bankers are following a good example, for bankers in other States have done it and have found it good banking because it is safe and profitable lending; because it increases the appreciation of good live stock and because it teaches boys how to deal with banks—which is a very useful lesson in progressive farming. We are disposed to approve it, also, because it gives a concrete instance of the every-day applicability of the high-finance principle that "trade

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., August 8, 1916.

STATIONS	Past Week	Rainfall Data		Temperature Data	
		Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka	0	1.31	.12	62	50
Red Bluff	0	1.02	0	102	62
Sacramento	0	.06	0	100	66
San Francisco	0	.03	.03	72	48
San Jose	0	0	0	90	46
Fresno	0	0	0	104	60
Independence	0	0	0	88	56
San Luis Obispo	0	.03	.03	82	44
Los Angeles	0	0	0	82	56
San Diego	0	.02	0	84	62



follows the loan." Every pure-bred-pig boy will open an account with the bank—even if he does begin with a debit entry, which is not so good as the other kind. But when that pig begins to earn something the credit side will begin to grow, and if both boy and pig are "good individuals" their influence will be seen and felt all through the community. Besides all those boys will learn something about bankers and all those bankers will learn something about boys and farming, and the whole neighborhood will take a step toward higher living. For we read that out from the plains of conflict a little child shall lead the vast menagerie of predatory beasts and their former victims, "and they shall not hurt nor destroy in all my holy mountain," saith the Lord.

CALIFORNIA AND RURAL CREDIT.

SINCE our last issue the Senate of the United States has unanimously approved the appointments to membership on the Federal Farm Loan Board of the four persons named and described on page 127 of our issue of last week. This means that all political parties represented in the Senate at the present time agree to follow the lead of the democratic majority which achieved this legislation—which is rather a good showing of good will for a new economic policy. Naturally the next question is when will California be able to get to work at mortgage loans in the United States way? There can be no immediate answer. The Farm Loan Board has to set up all the new machinery which the law provides for its own operation—and much of it has to be made to order, all the way from organization to the minutest regulation and method of procedure. To an outsider it seems likely that this may take several months of careful work. Then the Board has to establish twelve district land banks, organize and capitalize them as the law provides; and it has to be careful to get them in the right place, we presume, for it would be rather bad to locate a district bank in a State where no local business could be done. Only those States are eligible to do business in which—

"the laws relating to the conveying and recording of land titles, and the foreclosure of mortgages or other instruments securing loans, as well as providing homestead and other exemptions and granting the power to waive such exemptions as respects first mortgages, are such as to assure the holder thereof adequate safeguards against loss in the event of default on loans secured by any such mortgages."

Perhaps the "trust deed," by which a Californian can waive everything but the undertaker, would answer this requirement, but some lawyer has to tell the Farm Loan Board about it—and the same thing has to be done for each of the States before the eligibles can be listed and the ineligibles fitted with new laws if the legislatures so desire. It would seem that this might take several months. We state these requirements of preparedness, and there may be many others, simply to advise our readers that the beginning of business under the new law is not likely to be sudden, and undoubtedly the various steps toward the beginning will be duly announced as they are taken by the authorities.

Meantime it is apparent that private corporations are changing their ideas of interest rates and costs at which they are willing to make their idle money useful in agricultural improvement and development, and this is not the least of the advantages which Uncle Sam's friendly interest is bringing about.

Browning Grape Leaves.

To the Editor: I have some grapevines on the south side of the house which I am trying to grow for an arbor. The first of the season I watered them, but for the last three months I have given them very little, so now the leaves are turning brown. Should they have a good soaking occasionally or not?—Amateur, San Jose.

If the leaves have shown grayish powder and disposition to curl earlier in the season they probably had mildew which free dusting with sulphur would have checked. If the leaves were good

earlier in the season and are now browning, first around the edges and then going clear brown, they probably needed water some time ago. Irrigation is usually not needed in your valley early in the season, but for good foliage for arbor purposes you should water freely until the rains come to carry the foliage to the frost date.

A Melon Depredator.

To the Editor: I have a nice patch of Rocky Ford melons and every morning I find some of the leaves and runners eaten off. What is doing the mischief? Sometimes I find a number of small black bugs around the vines. Is it this bug or cut-worms? Have tried sulphuring them but it does no good. What can I use?—C. L., Campbell.

We cannot do much to determine either guilt or innocence without specimens. "Small black bugs" are not apt to "eat things off." They may eat or puncture leaves and cause collapse, but one has to see the particular bug to tell what it usually does. The eating off might be done by some of the cut-worm group. If so you are likely to find the culprit in the loose earth near where the cutting has been done. Sulphur is not a poison to animal life. The fumes of it kill mites like red spider, etc., but it is so poor as an insecticide that one wonders why so many people run for sulphur when they have a general desire to wipe out the animal kingdom. It must be its association with the idea of future punishment. To kill a leaf-eater you need a poison, such as lead arsenate, because that kills insects which bite without injuring foliage. It is now probably so late that a few leaves and runners are not worth fighting for.

Black and Oriental Cockroaches.

To the Editor: Please tell me how to get rid of large black water bugs resembling roaches that infest my house, only coming out at night from the basement. They also look like black beetles. I send specimens.—M. W., Los Angeles.

The insects are cockroaches of the black or oriental species (*blatta*, or *periplaneta*, *orientalis*), which are widely distributed over this continent though native and common in Europe. They are nearly an inch in length when fully grown, quite thin or flat and with very long, thread-like antennae. Your mistaking them for "black beetles" is warranted, for that is one of their common names, but cockroaches are nearer to crickets than to beetles. The insects probably do not come from the basement but from near-by warm places in the cracks behind the carpentry of the kitchen or pantry, or crevices behind boxes, etc., where they like to sleep away the daylight and forage in the dark. If you can putty up all the cracks you can exclude them, but that is a hard undertaking usually for they will take all kinds of hiding places. If your electric bell does not work you may find the bell-case full of them, etc. They are hard to poison with arsenical insecticides because they are too smart to eat them, but you can make a mixture of powdered sweet chocolate (or sugar) and borax and they usually help themselves to it if it is put around where they have been finding your bread, crackers or left-over foods. The borax will slowly knock them out. Of course you will clean out all possible hiding places and kill all you can.

Irrigating Sorghums.

To the Editor: Please tell me the right time to irrigate Egyptian corn. I planted it a little over a month ago after irrigating. It is three feet high now and the cultivator brings up moist dirt. I thought of irrigating just before it heads out, but some people tell me not to irrigate until it heads.—G. F., Esparto.

The time to irrigate any crop is just before it needs it and experience will help you to judge by the looks of the soil how soon that time of need will come. It is not wise to wait until the plant shows signs of distress. If you are growing the plant for a seed crop and it looks thrifty and the soil has plenty of moisture as your cultivator shows, we should wait for the plant to shoot the heads as your neighbors advise you. But this is

not a hard and fast rule because on some soils the plant may have too little moisture to shoot a strong head and must be irrigated before it gets stunted. You must use judgment and not depend upon any rule.

Quick-Fruiting Apricots.

To the Editor: Summer pruning of apricots is advocated in recent issues of the Pacific Rural Press. We have some Royals on Myrobolan in heavy soil near the foothills in Fresno county, now in their second year. They were heavily pruned last winter and are exceptionally large, strong and well shaped. They bore some fruit this year. They are growing between olives which we intend to have for the permanent orchard, so we want to get returns from the apricots as soon as possible and take them out, when the olives bear well. I notice that "California Fruits" advises against summer pruning of apricots the second summer, but under the circumstances we thought it might be advisable. What would you suggest?—D. S. K., Sanger.

The advice against summer pruning of young trees is to promote the chief business of a young tree, viz.: to make vigorous and strong wood growth, and summer pruning acts against that. By repressing wood growth summer pruning promotes fruiting which is not usually desirable in young trees which are expected to occupy the ground for decades, perhaps. You intend to have your apricots enjoy a short and busy life, and what you say of their present aspect indicates that they are ready for it. As they are Royals and therefore free fruiters, if not hit by frost, they would probably serve your purpose well by stopping pruning altogether, but as they have probably sent out branches too long to carry the weight of the fruit which will probably set upon them, such branches should be shortened and the mass of the fruit brought nearer to the center of the tree. Therefore shorten such branches now, but do not cut the laterals and spurs on the frame work of branches which you retain. Keep them for next summer's fruiting. Next winter trim only lightly if at all—thinning out shoots, if there seem to be too many, for this will tend toward increasing size of fruit on the bearing shoots which you retain.

French Grower Wishes White Peaches.

To the Editor: I am growing peaches for the Paris market and need something larger than the "Uruguays" from South America. I need the earliest, largest white-fleshed peaches and think you may have them in California.—R. E. G., Paris.

We do not know the "Uruguay" and cannot make comparisons. The first peach to ripen in California is the "Mayflower," an eastern variety; next a group of varieties including "Briggs May," a California variety; then "Alexander," "Hale's Early"—both Eastern and leaders in amounts grown in California for Eastern shipment. They are all fairly large, when well grown, and very handsome. We have two white freestone peaches ripening later, the "Decker" and "Opulent." They originated in California but are not widely grown here because a mid-season white peach has little commercial chance as compared with a yellow peach. The "Opulent" is a Burbank variety of exceedingly high quality. You should try it for your special purpose.

Walnut Seedlings Too Small.

To the Editor: I am sending a black walnut tree growth from the nut, planted last spring. I am told that these trees would not hold the graft. Will you kindly tell me what I can do with them?—T. M., Concord.

The seedlings are not affected with any disease so far as we can see, but they have not made growth enough to qualify them for a working stock. If you cultivate well and give them water, if needed, you may force growth enough during the next two months to make them large enough to take a graft in the root-crown next winter or you can let them go over for budding a year from now. Where growing conditions, in heat, moisture and soil, are very favorable the seedlings can make large growth the first summer, but under other conditions it is not unusual for them to make too little growth for working the first year.

Birth of Standardization Law.

[Written for Pacific Rural Press by Assemblyman Geo. W. Ashley, who introduced the bill in the Assembly.]

I notice in your issue of July 1 the article entitled "New Fresh Fruit Standardization Law." Believing that it might be interesting to know of some of the difficulties met in the passage of this law; in getting together the different ideas and factions and in securing the votes of many of the members of the Legislature who, not being interested in fruit growing, were against the law on general principles, calling it "regulation run mad," etc.

You will remember that attempts had been made at different times, both by agreement and by the attempted passage of laws, to secure standardization. By agreement this had succeeded in one or two counties, but had been abandoned in the others.

In the fall of 1914 a committee composed of F. B. McKevitt, C. B. Bills, and H. E. Butler, met and drafted a tentative bill. This bill had no system of inspection to carry out its different features. The different fruits were grouped in similar classes in the law. Otherwise the present law is quite similar to the original draft.

When the tentative bill came before the Legislature then the fun began.

Some demanded inspection, and would be satisfied with nothing else. Some wanted this inspection to be by the State, others said that they would fight to the bitter end against State inspection and wanted it by county boards. Some did not want inspection at all. Some wanted 18 per cent sugar, others 16 per cent. Some wanted the bill to read "free from insects and fungus diseases" and "of uniform quality and maturity," in all cases, others wished the word "practically" inserted in each case. Some wished the cantaloupes added. Some wanted it to cover fruit for consumption within the State, others did not. Some wished to pay the inspectors \$5 per day, others \$3.50. Some wished them under Civil Service, others not. Some wished to defeat the bill by making it impractical, others by making it unconstitutional. Some wanted the whole law made stronger. Out of this mass of different ideas and against the opposition of many people and of at least one comparatively large fruit company, the bill was passed in its present form.

To do this took many meetings with many committees, some meetings running into two and three o'clock in the morning. It also took some personal trips to different counties. It also took the personal friendship and trust of many members of the legislature who did not personally understand the necessity for the law, to secure its passage without a vote against it in the Assembly and with only one vote against it in the Senate. Also it took the aid of many men like C. E. Virden, J. L. Nagle, Dr. Cook, Jos. Di Giorgio, F. B. McKevitt, Mr. Madison and many others. Also the aid of R. T. McKisick of the Attorney General's office.

All of us realize that there are a few changes needed in the law, but there are comparatively few. The

general idea in the passage of the law was the protection of the small grower, the building up of the industry, and protecting the fair name of the State.

CAPRIFIGS PRODUCE POLLEN ON ALL CROPS.

[Written for Pacific Rural Press by Francis Hetny, Brawley.]

In commenting on your communication in regard to using *Pseudocaria* fig to pollinate the early (breba) crop of Smyrnas I can state that I have done this as much as 6 or 7 years ago. But unless the mummies are plentiful it will be pretty hard to induce the blastophagas to enter the female breba figs, inasmuch as they prefer to enter and infest the prothichis, which appear to be very plentiful at that time.

There is absolute certainty that all crops of *Pseudocaria capri* figs have pollen stamens; this is true also of their hybrids; but there is another class, the *Ficus afganistanica*, and hybrids, which carries stamens with pollen. The first wasps begin to issue in latter part of Feb. and the last in the early part of Dec. The life cycle is 40-50 days. Somewhat shorter than further north, where apparently, according to Prof. S. P. Rixford, it takes 60 to 75 days from the egg to the adult. It takes 6 weeks or more to mature the female fig after the pollination date.

The season here lasts 5 to 6 weeks. So when the wasps begin to issue in the latter part of Feb. they may last until almost Apr. 15, especially since our new hybrids of *pseudocaria* and *afganistanica* began to produce.

But as the season advances the season prolongates, and the fourth and fifth crops almost run together and this happens in latter part of Aug. After this date wasps are available most any time.

I have harvested fine ripe Smyrnas on Christmas day and some as late as Feb. the next year. This of course during dry, frostless winters.

Although pollination of brebas is possible, it will be necessary to produce hybrids of heavy mummy crops to make this practicable.

WALNUT CODLING MOTH.

[Written for Pacific Rural Press.]

Codling worms do great damage to walnuts in various sections of California. Banding the trees has been recommended, but A. Cock, manager of the San Joaquin Fruit Co. ranch in Orange county, says that won't work, but a torch does. Since so many attempts with torches have caught most everything except codling moth, we do not recommend torches, but present Mr. Cock's observations on the habits of the insect.

Unless the moths are destroyed, they will lay eggs in the newly opened cracks in the hulls, and the worms on hatching will crawl around toward the stem end. There they will bore through and develop inside the nut.

Mr. Cock has found on his own Tustin place, holes bored through walnut shells, and perfectly formed worms inside. He has found one-

half of a nut good enough to eat while the other was webbed up and contained a worm. He has found worms among leaves and trash on the ground as well as under sheltered places high on the limbs after the nuts are off. He believes they hide anywhere they can until time to turn into moths which lay the eggs as mentioned. He has noticed that the hulls usually stick to wormy nuts.

The conclusion is drawn that all cull nuts and trash should be cleaned up as soon as feasible. One way to accomplish this is to turn hogs into the orchard as is done on the Rowland Ranch in Los Angeles county.

PLANT ORCHARD COVER CROPS SOON.

(Continued from first page.)

not compare with barley to plant with vetch.

Bur clover is the most widespread volunteer cover crop legume; and if given any chance, will seed itself. Ed Ames of Placer county plows furrows wider than his plow to leave tufts of bur clover out to seed. C. V. Freed and Gerald Geraldson, of the same county, leave alternate centers growing all summer, changing to the cultivated rows each succeeding season.

H. A. Clark of Santa Clara county has tried bur clover during two widely separated seasons on 15 acres of unirrigated orchard, but figures Oregon vetch is most satisfactory, planted with barley rather than with rye. He points out that it is a waste to sow bur clover seed without the burs where there is no irrigation, but that it will germinate if sown in the bur. It is difficult to buy seed in the bur, however.

The Coming Cover Crop.—*Melilotus indica* has proved by far the best annual winter cover crop in Southern California and is rapidly gaining favor in the central and coast regions of the State. It was introduced due to the Citrus Experiment Station at Riverside under direction of Wm. Mertz. He showed that *melilotus* would make growth nearly equal in tonnage to purple vetch, and Prof. McBeth showed that its above-ground portion runs higher in nitrogen per ton dried than purple vetch or alfalfa and over twice as high as corral manure after all water is taken out of them. According to Mr. Mertz, over 60,000 acres of *Melilotus indica* were planted last season. In a large measure it grew successfully, though many of these plantings were first attempts to grow clover in the orchards. It has grown on a wide variety of soils, is cheaper than vetch for seed, and is the most productive of nitrogen.

A. Neilsen, on one of Judge S. F. Leib's places in Santa Clara Valley, had highly satisfactory results from this *melilotus* last season among ten acres of walnuts. Dr. R. E. Pierce, J. N. Reynolds, and C. A. Beinhorn of Tulare county are some of the successful growers. J. A. Harliss of Santa Clara county broadcast seed without irrigating, but just before a rain, and got a beautiful stand. The plants, however, did not get enough growth to withstand the severe cold. His neighbor, who irrigated earlier in fall and sowed seed as soon as he could cultivate the soil, had *melilotus* which became

waist high, having been protected from frost by volunteer bur clover and weeds.

Canada field peas were popular long ago, but lost favor, largely on account of aphids and high cost of seed per acre. The Sorosis ranch in Santa Clara county is one of their biggest advocates. They had 100 acres of prune orchard planted last season to these field peas, and will plant the same this fall.

Beans of various kinds are being tried out for summer cover crops. Commercial varieties pay, but there is objection to the others on account of high cost of seed. The Citrus Experiment Station is working on a smaller seeded strain of Windsor beans. B. B. Green of Sacramento county has been growing inoculated bayos among his young pear trees.

Grains add practically no plant food to the soil and serve no purpose which is not served by legumes where they do well. Barley, oats, and rye are the winter growers, and a proper combination of grain and legume seems to induce greater growth of both. The Hardison Ranch of Ventura county found that 25 pounds barley with 40 pounds vetch seed did not smother the vetch as when 40 pounds of each were sown. Rye was discouraged. The Sorosis Farm had 150 acres of prunes sowed to vetch and barley and will have the same next year. They pasture or feed it to cows and return manure to the orchard. Fifteen pounds rye in combination with 25 pounds purple vetch seed per acre in 1914-15, grew over six feet tall for Mr. Harliss, "a regular wilderness," which he now proves by excellent photos. Other cover crops are either experimental or incidental.

September Sowing Urgent.—With all of the legumes, early fall sowing must be insisted upon. Probably more failures have been due to sowing after Nov. 1, than to all other causes. Some people sow it dry and hope for rains to bring it up. The most successful growers regulate moisture and sow in September, the sooner the better according to those who have tried it. Seed expense should not enter the calculations of which variety of cover crop to use. The results count.

The seed needs warm moist soil to start. It puts out a very few leaves and seems to stand still all winter. Early or late in February the best of the cover crops start rapid growth and are two to six feet tall before ground is too dry to plow after usual spring rains. The longer it is allowed to grow in spring, the more real humus it will make, the more nitrogen it will put into the soil when turned under, and the more effect it will have in loosening heavy soils. But delayed plowing is disastrous to trees, and to soil for the rest of the season if irrigation or rain are not available.

Inoculation.—Every farmer wants to know whether to inoculate the seed. Dr. Hilgard, one of the foremost American authorities on soils, says, "A great advantage is gained by infecting either seed or soil with a form of bacteria already adapted [to its own leguminous group] when no similar plant has lately occupied the same ground." The bacteria are needed, and will greatly increase stand and growth where supplied in sufficient quantities. This may be

done by sprinkling dirt from fields of the same kind of legume over the field to be planted, or by inoculating the seed or soil with pure cultures of adapted bacteria which are sold in California under the names of Farmogerm, Nitragin, Nitrobac, and Westrobac. Inoculated seed or soil

should not be held long before mixing into the moist soil of the field or orchard so the bacteria may not die before beginning to multiply. Inoculation is seldom necessary for successive seasons after the first year's vigorous growth of a legume, though it often helps run-down stands.

Improved French Prunes.

[Written for Pacific Rural Press.]

The writer had the advantage last week of looking into the behavior of several types of prune d'Agen in the Santa Clara valley in company with Leonard Coates of Morgan Hill, who has for many years given close attention to the effort to secure larger prunes and more prolific trees by selection and propagation of natural variants wherever they can be discovered in bearing orchards. In this way it seems possible to accomplish marked improvement and at the same time retain the distinctive characters in flesh and pit which make the French prune a world-beater in its cured product.

At "Rawdon Dell," Mr. Smith's picturesque fruit farm near Saratoga, we saw fruiting a tree, propagated from a branch of an older tree, which was unfortunately not preserved, bearing a fruit averaging, when cured, about 31 to the pound when the orchard run was 57 to the pound. It departs from the normal shape of the French, having filled out its shoulders and hams, so to speak, so as to present an outline more like a section of a cylinder—an oblong, squarish form. It has in fruit-stem, pit and twig growth, as well as in size of fruit, marks of greater vigor than the common French adjacent to it and though handicapped by too many of its natural enemies, the tree shows much strength of growth and prolificness. Mr. Coates is making careful comparative tests of this variant, both fresh and cured, and it may become notable. It is circumstantially established as a variant appearing on a single branch of a French prune tree, and can be presumably credited to a bud-variation.

At Mr. McKay's place near San Martin, we saw in fruit a fruit having the general form of the French but much larger than the run of the French growing near by. This is particularly interesting because it has been known to Mr. McKay for many years and was also known, it is said, to the late J. F. Flickinger of San Jose and first appeared in his orchards. Mr. McKay is guarding the type carefully, is propagating from it for his own planting and expects to fully establish its superiority. Mr. McKay differs firmly from the condemnation of the cured Standard prune of Burbank recently expressed in these columns. He believes our disfavor of the Standard was due to testing cured Standards made from fruit not fully ripe. We shall see later; we like to be caught in error, when we drift into it unconsciously. Perhaps all growers of Standards may like to test the mat-

ter by picking later. As the Standard does not fall well, it refuses to test its own maturity in regular prune fashion, and the grower must look out for it.

On Mr. Coates' test grounds we saw a seedling which the originator, Mr. Burton of Vacaville, considers about 15 points better than the French. It also has the signs of excess vigor in fruit-stem and twig growth associated with increased size of fruit and these correlations are probably natural and to be expected. Mr. Burton is still working with prunes and is not sure that he has done his best yet.

We were assured by observers that the pear-shaped variant of the French prune, of which Mr. Coates published an account in these columns many years ago, is still in the ring for preferment although specimens were not within reach at the time of our visit. During his last trip abroad Mr. Coates made careful observations in the Agen district and this fact, with his long experience in this state, eminently qualifies him for the special work with the prune which he is now carrying on so energetically.

GRAPES LATER ON OLD VINES.

[Written for Pacific Rural Press.]

Tokay grapes on old vines keep in good shape later in the season than young vines partly because they are higher from the ground and perhaps because of the difference due to age of vines. It is perhaps partly due also to their later ripening.

H. J. Cooper of San Joaquin county says that he used to commence picking from the vines, which are now 23 years old, in August; now he has to wait until the last of September and sometimes holds them on the vines, as he did last year, until the middle of October.

When held on the vines one should be prepared to take the risk of losing them by rain which is likely to come and spoil them for shipment. Mr. Cooper lost the grapes of a large patch of old vines last year because he held them until the middle of October for the sake of better prices. It rained just as he was ready to pick them.

OUR POMOLOGICAL QUALITY.

To the Editor: I have been since 1887 an ardent reader of your sprightly and semi-acid editorials—as the pomologists would doubtless term them. Long may the aroma and flavor linger in the Rural Press, continuing to delight the ever-increasing circle of admirers.

Napa county. Yountvillain.

Codling worms and San Jose scale are occasionally found in and on apples being packed for shipment East. Such are culled out and sold to city hotels, etc.

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Death to Dandelions.

How These Persistent Lawn Pests can be Reduced and Perhaps Extirpated, if One Will Do the Work Well.

We have previously mentioned the interesting undertaking at the Colorado Agricultural College to meet the great lawn pest, the dandelion. Later particulars which all lawn-lovers should consider, are communicated by B. O. Longyear of the college to W. S. Clayton, president of the First National bank of San Jose. The letter in part follows:

The Use of Gasoline.—A small amount of gasoline to the cut end of the dandelion roots left in the soil will prevent their sprouting, but of course this means extra work, although it disposes of the plant at once. Where there are only scattering numbers of the dandelions in the lawn, the use of gasoline can be recommended, as one application is sufficient to entirely kill the plants. The easiest way to apply it is by means of an ordinary machine-oil can. A scant teaspoonful squirted into the crown of each plant is sufficient to destroy it.

Spraying with Copperas.—During two years we have carried on experiments in the control of dandelions in lawns by means of a spray composed of iron sulphate dissolved in water at the rate of 1 1/4 pounds to the gallon. This makes a solution of approximately 15 per cent strength. Other strengths have been tried, but so far as our experience goes this has been as effectual as the stronger solutions.

The solution should be applied in the form of a fine forcible spray and should cover every square inch of the lawn. Enough should be applied so that every plant is thoroughly wet with the mixture. In our experiments we have found that one gallon of the solution will usually cover a space 10 by 15 feet. About three applications are needed at intervals of ten days to two weeks apart, depending somewhat upon the rapidity of growth of the dandelions. The lawns should not be watered for 48 hours at least, after the spray is applied. The grass will be darkened at first, but will soon recover and will have a deeper green throughout the remainder of the season.

Our results here during the two seasons indicate that the middle or the latter part of summer is perhaps the better time to do the work. Our experimental plats last season, while not entirely cleared of dandelions, showed a reduction of more than 90 per cent in the number of plants at first present. The whole college campus was sprayed with a power outfit, but for some reason not nearly so good results were secured as on the experimental areas. This is probably due to the more thorough spraying on the experimental plats where personal work was done.

Hints on Spraying.—For a lawn of moderate size a bucket spray pump is the best kind to use. For larger areas, one of the pumps mounted on a barrel supported on wheels is suitable. The principal thing is to have an outfit which can give a very fine and forcible spray. The more forcibly the spray is applied the better it will be driven into the crowns of the dandelions, which seems to have something to do with its effective-

ness. Iron sulphate in granulated form may be obtained from the American Steel and Wire company, which has an office in San Francisco, or from local drugstores or hardware stores. The solution should be used within a short time after it has been prepared or it does not keep well.

LUPINES AGAIN UNDER SUSPICION.

To the Editor: I am sending you some weeds that are growing on my cattle range this year. I have had several young cattle die lately, and I want to know what these weeds are, whether they are poisonous to cattle; and if so, how they affect them.—J. A. Weldon.

[Answered by Dr. H. M. Hall.]

The plant mentioned by your correspondent is a species of lupine, known botanically as *Lupinus albus*. It is quite probable that the seeds of these plants are poisonous in the manner common to lupine seeds and that this has been the cause of the trouble. The matter was discussed in some detail in the Pacific Rural Press of May 6, 1916, in which the symptoms of lupine poisoning are given at length.

GREEN LUPINES ARE VALUABLE.

To the Editor: Please find enclosed plant, which I have been told is a vetch. I planted very clean rye and this grew up heavily with it. It stood heavy frost and snow well. Kindly advise me as to what it is and its food value.—C. K. Sherwood.

[Answered by Prof. P. B. Kennedy.]

The plant is one of the small annual lupines, *Lupinus micranthus*, an extremely abundant lupine in many parts of California. Waste places and fields are often covered with it. There are a great many of these lupine species in California which seem to vary considerably in their palatability to stock. This one having very fine leaves and being quite tender in spring, is eaten to a considerable extent along with the other forage and grasses growing among it. As it is a legume its food value no doubt is quite high, particularly in protein: a word of caution, however. Every year our attention is called to the poisoning of stock by these lupines when in the seed stage, and we have every reason to believe that the seed of all of them is poisonous as in nearly every case submitted it seems to be a different species. The reason that more poisoning does not take place is because the plants are in the seed stage for a short time only. The seeds are thrown out of the pods as the latter twist in a spiral manner. Stock eating the plants after the seeds have been shattered from the pods never seem to be affected.

Where these native lupines grow abundantly in orchards, they should be encouraged and perhaps not plowed under until the plants have gone well into seed, so as to leave the ground naturally seeded without cost for another year.

The county supervisors ought to plan and carry out a compulsory ground squirrel extermination campaign for a period of several years. They will if enough voters insist.



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WHEAT SEED TREATMENT GIVES HEAVY CROP.

[Written for Pacific Rural Press.]

Thirteen thousand sacks of heavy smut-free wheat were grown last season by Chas. Rieck on about 1450 acres of summer fallowed land in southern Tulare county.

Its plumpness and lack of smut were largely due to seed treatment.

The grain from choicest sections of the ranch is kept separate when harvested. It is stored in a 900-sack bin. A chute leading from the bin lets the seed wheat fall into running water. The good plump seed wheat sinks and is caught while all oats, chaff, light shrunken grains, etc., float away. Then the seed is treated with bluestone for smut and dried ready for planting.

The bluestone treatment consists of putting the grain into a tank containing a solution of one-pound copper sulphate per four gallons cold water. This insures application of the fungicide all over each grain, much more thoroughly than if dipped in sacks. It is dried as soon as wetted.

SWEET CLOVER ON SALT GRASS.

[Written for Pacific Rural Press by J. McGann, Independence, Inyo Co.]

Answering the question, "What is a good crop to plant on salt grass sod?" in your issue of July 1, melilotus alba, commonly known as white sweet clover, has proved fine for me.

I planted 15 or 20 pounds per acre on salt grass sod, and the following year cut the first crop for hay and the second for seed. Just shake the seed among the salt grass and then disk it in. If you don't want to disk it, just irrigate; but be careful not to give it too much water. It will drown out easy and turn yellow.

This sweet clover makes fine hay and is the finest kind of pasture for cattle, hogs, and sheep. It does not bloat; and is better for hogs than alfalfa. It is the greatest of all honey plants, and one of the finest fertilizers there is.

SILK GROWING IN CALIFORNIA.

To the Editor: Mulberry trees thrive in California. If I should raise some silkworms, could I sell their product?—Sub.

[Answered by A. F. Barnard, Belding Bros. of Cal., Silk Mfrs.]

[As far as we know, the raising of silk cocoons in this State has not been successful because after the cocoon has been produced there is no market for it, as there are no silk winders to speak of in the entire United States.

The silk worms and mulberry trees can be raised successfully here, and in other parts of this country, but the high cost of labor makes it prohibitory when the winding of the cocoon is considered.

We understand that a small quantity of cocoons is raised in San Diego, but these are sold for curiosity or souvenirs to Eastern tourists; not raised for commercial purposes.]

CLOSED LEAKS AROUND SILO DOORS.

[Written for Pacific Rural Press.]

When he built his concrete silos A. Haley of Newark was warned

against leakage around the doors, which were oval shaped, because of the difficulty in getting them to fit tight enough to exclude air.

As a precautionary measure he made rubber gaskets, the same size and shape of his doors, tightening the door against these instead of against the concrete. After four months, during which time the silo has been full of first cutting alfalfa, no loss around the doors had been experienced.

KILLED MORNING GLORY.

To the Editor: I have noticed a great many inquiries about the eradication of morning glory.

Three years ago this July, I had a patch about 40 feet across that

covered the ground completely. I began at one side, smoothed a strip the width of building paper and laid the paper on it. Then I smoothed another strip, throwing the dirt back upon the first strip of paper. Then laid the next strip lapping a couple of inches and continued in the same way until it was all covered. I left this until I plowed the next spring; and there has never been any morning glory come up since. I have killed several small patches by using newspapers in the same way. J. B. Hendricks. Lakeport.

OREGON RURAL CREDIT PLAN.

There is now being circulated for

signatures an initiative petition for a rural credits measure, of which C. E. Spence, Master of the Oregon State Grange, says:

It harmonizes with the proposed federal legislation for rural credits, which it would supplement.

It is self-operating, requiring no additional administrative expense, going into the hands of the State Land Board, consisting of the Governor, Secretary of State and State Treasurer. Bonds for obtaining the loan funds can be marketed at lower rates than farm mortgages, while at the same time the state merely "goes security," for which it is amply protected by mortgages on land at double the value of the loan.

Upper Salinas Valley Fair, Sept. 19-23.

A Great Increase in Railroad Wages Means Higher Freight Rates and a Burden on Agricultural Prosperity

Do you think the railroads ought to increase the wages of their highly paid train employes \$100,000,000 a year?

No great increase in railroad wages can be made without directly touching your pocketbook. Out of every dollar you pay the railroads 44 cents go to the employes.

Compare the wages of these men (who have refused to arbitrate their demands for higher wages, and are threatening to tie up the country's commerce to enforce them) with those of other American workers—with yours.

On all the railroads in 1915 three-quarters of the train employes earned these wages:

	Passenger		Freight		Yard	
	Range	Average	Range	Average	Range	Average
Engineers.....	\$1641	\$2067	\$1455	\$1892	\$1005	\$1526
	3983		3505		2445	
Conductors.....	1543	\$1850	1353	\$1719	1055	\$1310
	3004		2932		2045	
Firemen	943	\$1203	648	\$1117	406	\$924
	2078		2059		1633	
Brakemen	854	\$1095	755	\$1013	753	\$1076
	1736		1961		1821	

You have a direct interest in these wages because the money to pay them comes out of your pocket.

Low freight rates have given American farmers command of the markets of the world.

With two-thirds of the cost of operating railroads the wages paid labor, any great increase in labor cost inevitably means higher freight rates.

A \$100,000,000 increase in railroad wages is equal to a five per cent. increase on all freight rates.

The railroads have urged that the justice of these demands be determined by the Interstate Commerce Commission (the body that fixes the rates you pay the carriers), or by a national arbitration board. The employes' representatives have refused this offer and have taken a vote on a national strike.

This problem is your problem. The railroad managers, as trustees for the public, have no right to place this burden on the cost of transportation to you without a clear mandate from a public tribunal.

National Conference Committee of the Railways

ELISHA LEE, Chairman.
P. E. ALBRIGHT, Gen'l Manager,
Atlantic Coast Line Railroad.
L. W. BALDWIN, Gen'l Manager,
Central of Georgia Railway.
C. L. BARD, Gen'l Manager,
New York, New Haven & Hartford R. R.
E. H. COAPMAN, Vice-President,
Southern Railway.
S. E. COTTER, Gen'l Manager,
Wabash Railway.
P. E. CROWLEY, Asst. Vice-President,
New York Central Railroad.

G. H. EMERSON, Gen'l Manager,
Great Northern Railway.
C. H. EWING, Gen'l Manager,
Philadelphia & Reading Railway.
E. W. GRICE, Asst. to President,
Chesapeake & Ohio Railway.
A. S. GREIG, Asst. to Receivers,
St. Louis & San Francisco Railroad.
C. W. KOUNS, Gen'l Manager,
Atchison, Topeka & Santa Fe Railway.
H. W. McMASTER, Gen'l Manager,
Wheeling & Lake Erie Railroad.

N. D. MAHER, Vice-President,
Norfolk & Western Railway.
JAMES RUSSELL, Gen'l Manager,
Denver & Rio Grande Railroad.
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Pennsylvania Lines West.
W. L. SEDDON, Vice-President,
Seaboard Air Line Railway.
A. J. STONE, Vice-President,
Erie Railroad.
G. S. WALD, Vice-Pres. & Gen'l Manager,
Sunset Central Lines.

Mechanical Power on the Farm.

SILO WET OR WEEDY ALFALFA.

[Written for Pacific Rural Press.]

Alfalfa silage has an odorous reputation, but it is not a bad odor if put up right, according to C. W. Main of Corona who fed it to his purebred and grade Guernsey herd last year, in the barn. It compared favorably with corn, in palatability, and there was no more waste on top than of corn silage. The cows cleaned it up where the foxtail in it had not become too dry before cutting.

No change in milk flow was observed when the feed was changed from pasture and alfalfa hay to alfalfa silage in the barn and hay outside. The average feed was 15 pounds silage twice a day, plus what hay they would clean up. No bloat was ever noticed.

Mr. Main has two silos; one of concrete with 119 tons capacity, the other of resaw and paper, 109 tons. The concrete is preferred on account of durability.

He cut about 70 acres of alfalfa, half foxtail. Half of it got entirely too dry, and was stacked for hay. The other half filled the two silos about 2/3 of their capacity.

Longer Lengths Cut Fast.—It was run through a 16-inch Papec silage cutter which was regulated to chop 2 to 2 1/2 inch lengths. Alfalfa can be cut much longer than corn because it packs better on account of its smaller stems. It runs through much faster. One man in the silo packs it as well as two would pack corn. A 12 h.p. Fairbanks Morse engine furnished the power to cut and elevate Mr. Main's alfalfa. Three teams were kept busy with a 1/4 to 1/2 mile haul, one loading, one unloading, and one on the road, all the time. Besides the teamsters, two men loaded in the field, one man ran the feeder and engine, an extra man helped unload, and one worked in the silo.

Alfalfa is not considered profitable for silage when it would make good hay. But when it is very weedy, the foxtail, as hay, is likely to prove more injurious than beneficial. And if it is wet after cutting, its salability is so reduced that if there is much of a haul to market, there is no profit. The foxtail improves, rather than injures, alfalfa silage.

Wilt before Siloing.—Alfalfa should be wilted a little before siloing; otherwise it will become slimy, mushy, sloppy.

It should be cut and siloed greener when there is lots of foxtail in it, than when pure alfalfa. If wet in shock, Mr. Main would put it into the silo pretty wet—if wet on ground, he would allow it to dry a little more. But when put in too dry, it does not pack, turn black, and ferment as it should. If cut in the morning with dew on, it should be raked in afternoon if clear weather. He cut one

day and raked the next last year, but it got too dry. If old, coarse, and heavy when cut, he would silo it greener and fresher. No water was added while filling.

ALFALFA MEAL FOR PIGS.

To the Editor: Please give data regarding alfalfa meal for hogs.—A. M. M., San Jacinto.

[Answered by Williams Patent Crushers and Pulverizer Co.]

From one manufacturer of alfalfa meal, we repeat the following: "We have several customers who feed meal to hogs in the following manner: have two barrels holding 100-lb. sack easily; empty a sack in one of them, place a heavy piece of burlap over the top of the barrel and pour sufficient water over the meal to moisten same thoroughly, let it stand for a day, next day fill the other barrel same way, feeding out of each in turn one day after treating. This allows the meal to thoroughly dampen and slightly sour before feeding and the hogs get better results than immediately feeding after dampening. However, as a general and quick rule, feed alfalfa meal as you would bran. Meal fed as above with a mixture half ground barley also dampened will produce, of course, better results, as it makes a more evenly balanced ration."

A ration from another manufacturer:

"Feed in form of swill: One-third alfalfa meal, two-thirds shorts. (For hogs and brood sows.) One-third alfalfa meal, two-thirds corn. (For fattening hogs.)"

We also call attention to the fact that in the Southern States, the Carolinas, Georgia, Florida, Alabama, Tennessee, Arkansas, Mississippi, Louisiana, Texas and Oklahoma, in the past several years we have sold in the neighborhood of 1000 of our small grinders to farmers and ranchers. These people formerly grew nothing but cotton.

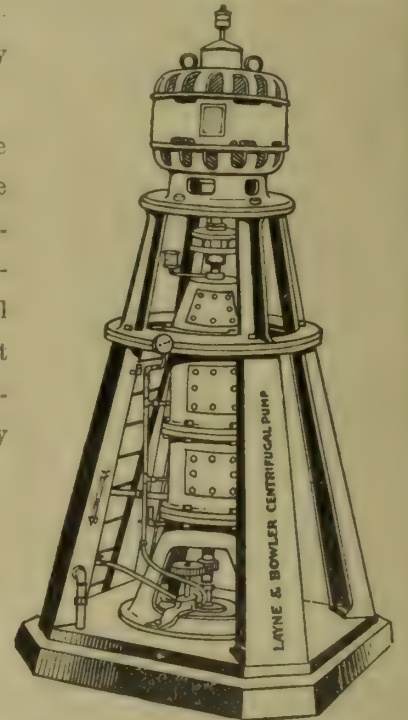
LOS ANGELES TRACTOR AND IMPLEMENT MEN MEET.

At a called meeting of the Los Angeles Traction & Implement Dealers Association held August 4 for the purpose of selecting a definite time and place for the big tractor meet to be held near Los Angeles, it was decided to hold this demonstration at Puente, California, on September 19, 20, 21, 22, and 23. The place selected is considered ideal, it being on the main valley boulevard connecting Los Angeles with the interior country, and affording a splendid means of transportation for the thousands that are expected to attend. Every facility for the convenience of the crowd has been arranged for. The citizens of Puente will furnish free water for those in attendance and for automobiles and tractors. The Association will have conveyances for bringing the crowds that will come by Pacific Electric, and the grounds are reached direct by the Southern Pacific. Also a thirty minute schedule is maintained by the Valley Stage lines. Practically every tractor and implement firm with headquarters in Los Angeles will be represented at

LAYNE & BOWLER HIGH DUTY PUMP

Here is illustrated the Layne & Bowler direct connected, oil-balanced turbine pump, for high duty, deep well service. It is used for lifts greater than 200 feet. This is beyond all question the most compactly designed high duty pump ever constructed.

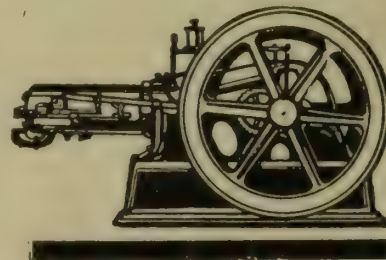
Our special oil-balance feature, we believe, is the greatest single improvement made since the advent of the centrifugal pump, and it has made it possible to use the centrifugal pump for all heavy duty requirements.



Our new Catalog No. 25 fully describes and illustrates this pump as well as many other styles. Write at once for a copy.

LAYNE & BOWLER CORPORATION
900 Santa Fe Avenue, Los Angeles.
"THE WORLD'S LARGEST WATER DEVELOPERS."

Simplicity



and low cost of operation are two of the most important considerations in the purchase of an engine. The Commercial has only 150 parts—most other engines have 250 to 750 parts. This is a wonderful advantage to the owner of a

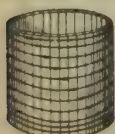
Commercial Engine

It means a tremendous saving in replacements. It means that you don't have to be an expert to operate a Commercial. No batteries, coils, switches and wires are used in either starting or running. Write for our large new catalog, explaining fully the simple construction of our engines, and containing testimonials from men who have used them.

Welcome---

Valley ranchers are most welcome to make our Fresno salesroom their headquarters, 1228 "H" St.

COMMERCIAL ENGINE CO.
2424 Porter St., Los Angeles, Cal.
Branch: 1228 "H" St., Fresno, Cal.



REDWOOD TANKS—SILOS.
Thirty-five years in this business in Stockton.—A 500-gallon tank, \$8.00. A tank 6 ft. x 2 1/2 ft., \$7.50. Other tanks equally cheap. I deal direct with the consumer, saving 10% to 25%. All sizes in stock. Clear dry redwood direct from the mill. Write for price today. Latest improved machinery. Frames, Mouldings.
E. F. WILSON, STOCKTON, CAL.

P I P E
For Every Purpose NEW Threads & Couplings Hot Asphaltum Dipped
Second Hand and NEW
Fittings and Screw Casings Valves Guaranteed for Pressure

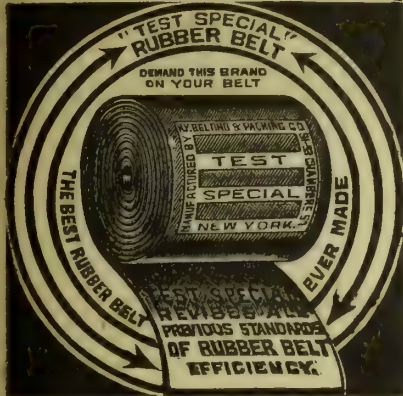
Pacific Pipe Co.

Main and Howard Streets,

San Francisco, Calif.

Belting

That Must Make Good



When you buy a rubber belt you should know what service it will give you or have the belt service guaranteed by a responsible firm who will make good in case the belt falls down. Every belt-buyer should know how to judge a rubber belt, and we would like to send you a free sample of Test Special together with our folder that will tell you just how to judge a rubber belt so that you may know just what service you will get from any belt you buy.

Fill out the coupon and mail it to us and we will recommend a belt that we will unqualifiedly guarantee to do your work satisfactorily. We have had seventy years' manufacturing and selling experience.

NEW YORK BELTING & PACKING CO.

519 Mission St., San Francisco
Established 1846

FILL OUT THIS COUPON—MAIL IT TODAY

New York Belting & Packing Co.,
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Send me sample of Belting that you will guarantee to give satisfactory service on my work and quote prices delivered at

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M.P. { Gasoline Engine
Steam Engine
Electric Motor

Diameter { Driving Pulley
in Inches { Driven Pulley

Kind of { Cross
Drive { Straight
Perpendicular

Width of Belt Ply

Distance Between {
Centers of Pulleys {

Revolutions per Min. {
of Driving Pulley {

Kind of Mach-
inery Driven

By Dealer's Name

My Name

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A pocket memo booklet giving speed and power tables will be sent FREE to all who mail this coupon.

REDWOOD TANKS SILOS

Water Troughs,
Windmills, Frames,
and Towers,
Steel and Wood.

Prices the lowest.
BROWN & DYSON
640 So. Center St.,
STOCKTON, CAL.

this meet, and many new and novel features not seen elsewhere will be pulled off. This is the largest demonstration of its kind ever attempted in the Southwest. Later issue will give full list of entries and advertising announcements will appear soon.

TWO IRRIGATIONS FOR EACH ALFALFA CROP.

[Written for Pacific Rural Press.]

By watering his alfalfa twice for each crop C. Jensen of Chowchilla has gotten maximum results on his 10 acres this year which was seeded a year ago last spring.

Like most of the irrigated ranches in that district, that of Mr. Jensen's is dependent upon pump irrigation and it is on this account that he is able to irrigate a week after he cuts a crop and again 10 days before cutting the next crop. By this process he gets a crop in five weeks during the summer time, having cut four ton-and-a-half crops before August this year.

Under pumping plant conditions Mr. Jensen has found 33-foot checks satisfactory but does not believe long checks can be economically watered in his location.

The rather remarkable thing about Mr. Jensen's stand of alfalfa is the fact that 40 tons of barley hay were harvested from the ten acres with the first cutting after planting, last spring.

Previous to seeding the land to alfalfa it had been seeded to barley and the volunteer barley in the alfalfa was so thick that it was expected to entirely crowd out the young alfalfa. But notwithstanding the heavy nurse crop, as the barley in reality was, a perfect stand of alfalfa was secured on the entire place.

ELECTRIC LIGHT IN SILO.

[Written for Pacific Rural Press.]

Instead of carrying a lantern around with them night and morning in shoveling silage out of the concrete silos, workmen on the Stephens Dairy near Mission San Jose have light from an electric lamp hung in the roof of the silo.

This electric globe is equipped with a reflector which gives a strong light and very much simplifies the work of unloading the silo at night.

POWER NOTES.

Don't forget the State Fair tractor demonstration September 4.

A free short course in farm tractors at University Farm, Davis, will be held Nov. 13 to 24.

A big tractor demonstration near Los Angeles will be held Sept. 19 to 22 under auspices of the Southern California Tractors Association.

The explosion in an engine is not so instantaneous as it sounds. Two spark plugs in a single-cylinder upright engine give sparks on opposite sides of the cylinder at the same instant to make the explosion quicker.

Oxidation of rubber which makes it brittle, is said to be due to the combination of air with sulphur adulterant of the rubber, making sulphurous acid. It may be prevented by frequent washing with dilute ammonia.

Ninety per cent of the registration and license fees paid in 1915 by automobilists to the States, or \$16,213,387 was spent for building and maintaining county and State roads according to U. S. Dept. Agriculture.

Do It Electrically



ELECTRIC APPLIANCES in the household, not only add to the convenience of all members of the family, but they are economical and time-savers.

ELECTRIC APPLIANCES include CHAFING DISHES, COFFEE PERCOLATORS, VACUUM CLEANERS, ELECTRIC IRONS and every other appliance that is needed in the modern home, not forgetting **ELECTRIC FANS.**

We carry these appliances in many of our branch offices, and will be glad to have you call and inspect them. Where we do not carry them we will be just as glad to give you our expert advice.

"PACIFIC SERVICE" is always "At Your Service."

Pacific Gas and Electric Company

HEAD OFFICE, 445 SUTTER ST., SAN FRANCISCO.
Branches in all principal cities and towns of North Central California.

LUITWILER PUMP

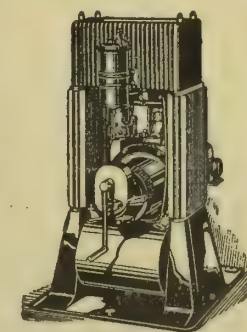
ELIMINATES ALL TROUBLE BECAUSE AN UNEVEN WATER LOAD IS THE CAUSE OF MOST PUMP TROUBLES.

Breakage, crystallization of rods, undue strains, excessive consumption of power, etc., all arise from an uneven water load.

THE LUITWILER PUMP
(Non-Pulsating)
—delivers an even, steady stream with delivery. No pit needed when electric motor is used. Absolutely guaranteed. Compactly constructed. Few parts. Built in styles and sizes for every requirement.

Write at once for our free irrigation booklets.

LUITWILER PUMPING ENGINE CO.
711-13 N. Main St., Los Angeles.
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Uni-Lectric
GASOLINE-ELECTRIC-UNY
LIGHTING SYSTEM

Electricity for Farm Homes

At one-third cost of juice from Power Company, (this includes interest on cost of plant). It is the simplest and most economical plant on the market.

No Batteries - No Switchboard - No Rheostat.

Will operate 50 lights 7½ hours for 11c. Will also operate electric fans, irons, small motors, etc.

If your buildings are not wired, send us plans and we will give you full instructions so that you can wire them yourselves. Material furnished at lowest cost.

Karl A. Hedberg Co., Inc.

Electrical Engineers.

104 Clay St.,

San Francisco, Cal.



Three Hundred Million Bushel Crop in 1915

Farmers pay for their land with one year's crop and prosperity was never so great.

Regarding Western Canada as a grain producer, a prominent business man says: "Canada's position today is sounder than ever. There is more wheat, more oats, more grain for feed, 20% more cattle than last year and more hogs. The war market in Europe needs our surplus. As for the wheat crop, it is marvelous and a monument of

strength for business confidence to build upon, exceeding the most optimistic predictions."

Wheat averaged in 1915 over 25 bushels per acre

Oats averaged in 1915 over 45 bushels per acre

Barley averaged in 1915 over 40 bushels per acre

Prices are high, markets convenient, excellent land low in price either improved or otherwise, ranging from \$12 to \$30 per acre. Free homestead lands are plentiful and not far from railway lines and convenient to good schools and churches. The climate is healthful. There is no war tax on land, nor is there any conscription. For complete information as to best locations for settlement, reduced railroad rates and descriptive illustrated pamphlet, address

Superintendent of Immigration, Ottawa, Canada, or apply to Gilbert Roche, Canadian Government Agent, Canadian Bldg., Exhibition Grounds, San Diego, Cal.

Canadian Government Agent.

General Agricultural Review.

GRAINS AND FIELD CROPS.

Hop picking commences in Tehama county next week.

Sugar beet harvest started in San Joaquin county this week.

One of the largest Seattle grain elevators closed recently and indefinitely for lack of ships.

It is hoped to control sugar beet leaf hoppers with Hawaiian bugs imported by the State Insectary.

Alfalfa weevils are slowly spreading in the inter-mountain basin, but none are yet known in California.

Wholesale granulated sugar was recently quoted by the Western Sugar Refining Co. at \$7.65 per cwt.

Amador county farmers are threshing a good crop of wheat, but not so good a crop of barley and oats.

Ed Powers of Manteca recently shipped a carload of watermelons mostly weighing 40 to 75 pounds each.

The Alameda County Farm Bureau is displaying sudan grass which grew 8 feet tall in 31 days near Pleasanton.

Some 50,000 men are harvesting the wheat of the Middle West beginning at the south and moving north as the wheat ripens.

J. Freitas of Knights Landing estimates 11,000 acres more of beans in Sutter basin this year than last; and a fine crop coming.

Joseph Letrich of El Centro brought the first load of Durango cotton to be ginned Aug. 3, and claimed the \$50 prize.

Barley in warehouses of San Francisco, Stockton, and Port Costa Aug. 1, contained 53,377 tons barley; wheat 13,699 tons; beans 88,925 sacks.

Arbuckle grain is reported much better than expected: barley 20 to 30 sacks per acre and wheat about 25. Much of it has sold at \$1.40 per cental.

Over \$1,000,000 more is to be distributed to its growers by the Great Western Sugar Co. in Colorado than their contract price. This is 50 cents a ton increase.

California sugar factories are to pay a second bonus of 50 cents per ton for beets if sugar does not fall below 4½ cents. The total 1916 crop is estimated at 850,000 tons.

Potato growers who wish to sell certified seed should communicate with State Inspector W. V. Shear, care of Horticultural Commission, Sacramento, at once or sooner.

The recent spectacular 6½-cent rise in Chicago on wheat was largely due to reports of hail and rust damage to the Canadian crop, but these reports are denied by Canadian officials.

In the two months' Turlock melon harvesting season to close Sept. 15, it is estimated that 3000 carloads of cantaloupes and over 1000 carloads of watermelons will have been sold for \$2,000,000.

Cotton production in U. S. this year is estimated at 12,916,000 bales by the U. S. Dept. Agr. on basis of the crop condition July 25. This is 72.3 per cent of normal, but larger than last year.

The Pacific Rice Growers Ass'n is signing up new members on the strength of its record in moving the crop and getting the best money for it. Contracts are not binding unless 75 per cent of growers sign.

Sec. Geo. E. Harvey of the Pacific Rice Growers' Ass'n urges every rice grower or business man interested in rice to attend the Railroad Commission hearing on freight rates at Biggs, which has been postponed to Aug. 15.

American cotton mills using American cotton of recent years are causing Lancashire England spinners and working people much anxiety for raw material to keep their 60,000,000 spindles and 800,000 looms busy.

Chairman J. W. Jennings of the committee appointed at Stockton last May to carry on a campaign of education favoring bulk handling of grain, writes that he has been appointing extra members and the campaign will soon begin.

Recent figures on this year's Sacramento Valley rice acreage are as follows: Butte county 27,000 acres, crop estimated at 800,000 bags; Yuba 2400 acres; Glenn 16,000 acres, estimated 56,000 bags; Yolo 15,000 acres and 60,000 sacks; Colusa 23,000 acres; Sutter 2,000 acres; Solano several hundred.

DECIDUOUS FRUITS.

Kings county shipped 114 cars of fruit to the East before Aug. 1.

Sonoma Gravensteins are reaching New York in first-class shape.

A Ceres girl is credited with packing 100 boxes of peaches in five hours.

Grass Valley Bartletts brought \$3.15 per box for the first carload in New York.

Four acres of young Elbertas are bearing about four tons per acre for F. H. Camp of Corning.

Alhambra valley, Contra Costa county, has been shipping three to five carloads of pears daily.

Apple packing records were recently beaten by two Sebastopol women, each of whom made a record of 160 boxes.

Infantile paralysis caused the Nat'l Apple Shippers' Ass'n to change its meeting place for Aug. 16 from New York to Niagara Falls.

The alkali resistant Chinese peach described in our columns over a year ago seems to be proving itself worthy in Butte and Sutter counties.

The Central California Canneries at Sacramento are doing 50 per cent more business this year than last according to Manager L. H. Stewart.

The threatened railroad strike would not only put a lot of us temporarily out of a job, but it would keep a surplus of fruit in California.

A Colusa county orchardist is reported to have saved his young trees from rabbits by planting four rows of sudan grass around his orchard.

Horticultural Commissioner W. H. Volck last week held up a carload of green Bellflowers awaiting a statement that they were intended for cold storage or export.

D. F. Norton, Horticultural Commissioner of Nevada county, has acted under the Standardization law by holding 48 boxes of scabby pears until they were repacked.

Sebastopol berries are reported by W. I. Newcomb of the Berry Growers to have been selling in the East at 25 cents per crate better than the Eastern home-grown stuff.

The normal pack of the Sebastopol Apple Growers is 1000 boxes per day, but they put out 1606 boxes one day recently. They are putting out 7000 to 9000 boxes per week.

Prunes look to be a full crop in Kings county and peaches are also turning out well. Green fruit shipments have stopped, but drying of peaches is well toward completion.

The Cal. Fruit Exchange recently sold a carload of Loomis plums and peaches in New York for \$2063. It is said to be the highest price of the year for tree fruit except for cherries.

The U. S. 1916 fruit crop is reported by the Dept. Agr. as below that of 1915 in practically every class, but on the same date we have

reports of California having a record fruit year in tonnage.

The Watsonville Apple Distributors have permission to solicit stock subscriptions provided that such subscriptions shall be void unless 7,200 shares are actually sold at par before June 1, 1917.

Immature prunes should be kept separate from the main crop to avoid spoiling the sale of the whole crop urges Napa Horticultural Commissioner J. J. Fox. Not many sales have been made in the valley yet.

C. B. Bills of Sacramento is credited with the statement that the East is crying for our fruit and we cannot supply more than 75 per cent of what they want; and that they are paying 5 cents each for pears, 2½ cents for plums, and 2 cents for peaches.

Market Director Weinstock quotes U. S. Consul General Gottschalk of Rio Janeiro as authority for saying that Brazil is a very hopeful market for California dried fruit, especially since our Washington "politicians" have procured a treaty giving us a 20 per cent preferential tariff as against Liverpool and Hamburg. Even so, our exports to South America have mostly gone via Europe.

Tulare Horticultural Commissioner Chas. Collins states that the peach crop as a whole will be a normal one, the canning varieties being shorter than the drying varieties. Prunes are good and a hundred per cent crop now looks possible. Shipments of Thompson Seedless grapes are about finished and Malagas are going forward. Mr. Collins has 10 inspectors at work in packing houses and says that some unripe fruit is being rejected.

June sales of confiscated dried prunes in British prize courts consisted of lots varying from 16,000 to 40,000 boxes which sold around two cents per pound. Apricots and kernels have also been sold there at



Sturdiness

A big, husky carcass built up with extra plies of stoutest fabric—

An ample cushion of great resiliency that absorbs the road shocks—

A tough, road-gripping tread of durability way beyond the ordinary—

Easy riding, big mileage and a low price—

That sums up the Savage Tire.

And the Savage Grafinite Tube is its best running mate.

SAVAGE TIRES

BRANCH STORES:

San Diego - 936 2nd St.
 Los Angeles, - 700 W. 7th St.
 San Francisco, 1125-29 Van Ness Ave.

about half of California prices, with no consideration of high freights.

Heavy canned fruit orders from the East and Great Britain are said to be rushing the canneries of the State. The embargo is to be partially removed Nov. 1.

CITRUS, NUTS, OLIVES.

Seventh National Orange Show February 20-28.

Orland, Banning, and Arbuckle almonds are being harvested.

The Tulare County Citrus Fair is likely to be held in mid-December.

The Cal. Almond Growers' Exchange has gained 271 net new members to Aug. 1. Four new growers signed up Aug. 2.

Boydston Bros. of Lindsay, who have worked up a fine reputation for their own oranges, have recently joined the Cal. Fruit Growers' Exchange.

S. B. Onyett, a veteran olive grower of Palermo, has sold his entire crop of Sevillanos and Ascolanos to a Los Angeles olive packer at \$235.00 per ton tree run.

The Co-operative Orange Ass'n of Lindsay recently voted to withdraw from the Mutual Orange Distributors and join the Lindsay-Merryman Exchange, which markets through the Cal. Fruit Growers' Exchange.

"Only 17 cars of oranges and 13 of lemons were shipped from the Riverside district last week, but at prevailing prices, these 30 cars will bring the growers close to \$40,000," says the Riverside Daily Press Aug. 4.

According to Chas. Collins, Horticultural Commissioner of Tulare county, the present indications are that the coming orange crop will not be heavy, although normal crops of lemons and grapefruit are expected. The drop was later this year than usual due to navel rot.

State Market Director Weinstock is sending a voluminous letter to about 7,000 citrus growers recounting the history and nature of his unsuccessful effort to get the Exchange into a State Bureau of Distribution. He urges the individual growers to signify to their marketing officials that they want the Bureau.

The independent Antioch Almond Growers' Ass'n advertised for bids for its crop. Three packers put in bids, but when they were read, one was blank. The offending bidder tried to substitute a higher bid than the others, knowing what the others had offered, but another set of bids was called for Aug. 12. "Trix in all trades."

The California Walnut Growers' Ass'n is sending to thousands of American retailers, jobbers, etc., a mailing tube containing a few nuts and a circular to be read while eating the nuts. This is to put the prospective customer in a good frame of mind to buy the Diamond Brand cartons which contain a full pound net this year. The sample nuts are 8 or 9 months old and being still good, create a favorable impression.

GRAPES AND SMALL FRUITS.

Sutter county is fighting phylloxera.

Arbuckle shipped a Tokay carload this week.

The first car of Malagas to reach Chicago sold for \$2440.

Tehachapi marketed 2500 crates of currants at \$1 per crate.

Lodi grape growers are organizing a bureau of market distribution.

The frost-damaged Tokays of San Joaquin county seem to have a good crop, but six weeks later than the first crop.

As much as \$100 per ton have been received for Thompsons, though some growers contracted last winter at \$20.

The Sutter county Thompson crop will be 20,000 tons from 6000 acres according to Horticultural Commissioner H. P. Stabler.

The first crate of Winters Tokays sold in New York Aug 3 for \$4.20. Vacaville Tokays brought \$4.75 the

same day, but only \$1.85 in Chicago.

MISCELLANEOUS.

No Orange County Fair this year.

The National Farm Loan Board has been appointed and confirmed.

Farmers' Short Courses, University Farm, Davis, Oct. 2-Nov. 10.

To levee and drain 26,000 acres in tract 999 at a cost of \$600,000 is the project of the California Delta Farms Co.

The \$6,000,000 Tulare Lake reclamation project is nearly ready for submission to the State Reclamation Board.

The Salt Lake Railroad is to build a \$2,000,000 electric line from Pico

to Santa Ana. They hope to build many other feeders.

The Southern Pacific is to build in San Francisco a 10-story \$1,250,000 building with a frontage of 275 feet on Market St. for use of about 2000 of its San Francisco employees.

The Alpha Farm Bureau in Madera county on Aug. 3 appointed a committee to take the necessary steps to complete a farm loan association under the new National Rural Credits law.

LIPPIA LAWN IN SHADE.

To the Editor: Is lippia a hardy grass for planting under a dense grove of oak trees? Will it become

uncontrollable like Bermuda grass? —G. E. F., Fair Oaks.

[In the issue of June 17, J. F. Swett of Martinez says you can hoe off lippia turf, spade up the ground, and have it absolutely free of the grass. Mr. Swett believes that lippia will grow even in dense shade; but will not mat smoothly as it does in sunlight. A very good lippia lawn may be had in a white oak grove where there is scattered sunshine and some sun morning or evening.]

Udo is a Japanese vegetable similar to asparagus but not much grown in California.

Your Neighbor's Car

Suppose He Buys a Hudson Super-Six

One thing we can't forget in buying cars. That is pride of ownership. The car is a pleasure vehicle. And it spoils the fun to be hopelessly outrivaled in about the same-class car.

The Hudson Super-Six has proved itself supreme.

With this patented motor—certified a stock motor—it has done what no other stock car ever did.

It has made faster speed. It has done better hill-climbing. It has shown quicker pick-up. It has gone 1819 miles in 24 hours, breaking the best former stock car record by 52 percent.

It has beaten race cars by the dozen—cars of a very costly type. It has shown much more power than this size motor ever before developed. It has proved matchless endurance.

Suppose your neighbor gets this car. And you, while paying as much or more, get something less efficient. How will you feel when the two cars meet?

What These Things Signify

You do not care for reckless speed. Such power is rarely needed. But the Super-Six has the capacity. You know it to be the master of the road. It will do what you want without taxing half its ability. And that means economy.

It will cover more ground than lesser cars, without going any faster. This because of its quick get-away when you slow down or stop.

Its greatest supremacy—that of endurance—means years of extra service. How would you feel to have a like-class car excel yours in these respects?

Means 80% More Efficiency

The Super-Six motor—a Hudson invention—adds 80% to motor efficiency. That is, from a small, light motor it gets 76 horsepower. The same size of motor heretofore yielded us 42 h. p.

This result comes through ending vibration, the cause of motor friction. It gives such smoothness as you never knew before. And it means a long-lived motor.

It comes in a car, evolved under Howard E. Coffin, which has long stood for the acme in fine engineering. And it comes in the handsomest, best-equipped model that Hudson has ever designed.

If your neighbor gets it, and you don't, it may mean to you years of regret. In looks and performance, in prestige and endurance, he will have the advantage of you. Your Hudson dealer can prove these things beyond any possible question. And you should know them before you buy any high-grade car.

Any Super-Six owner—there are now more than 10,000—can tell you what it means to own one.

7-Passenger Phaeton, \$1475 at Detroit—Seven Other Styles of Open and Closed Bodies



HUDSON MOTOR CAR COMPANY
DETROIT, MICHIGAN

The World's Most Low Priced Announcing the

31 1/2 Horsepower

Overland
TRADE MARK REG.

This newest Overland is the world's most powerful low-priced car.

It has a 31 1/2 horsepower en bloc motor that is a perfect marvel for speed, power and endurance.

By increasing the bore of the motor from 3 1/8 to 3 3/8" we are able to offer a power plant which at 1950 R.P.M. develops full 31 1/2 horsepower.

Tests under every condition in all parts of the country demonstrate that it easily develops better than fifty miles per hour on the road.

Speed of course varies under different conditions, but in practically every instance

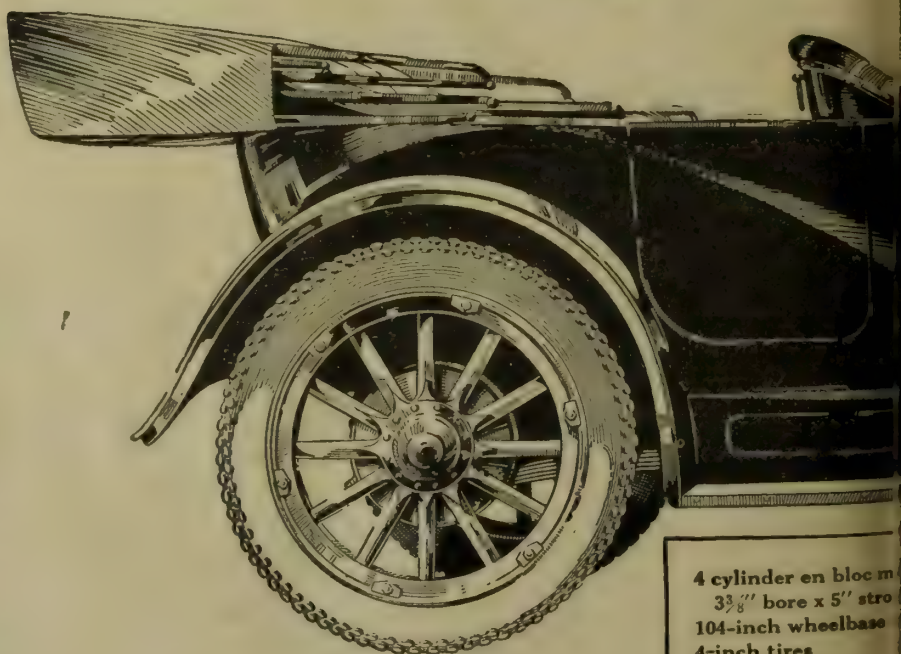
it has been getting fifty miles an hour and with ease.

We have scores of telegrams showing that eighteen to twenty-five miles per gallon of gasoline is not unusual.

The performance of this car is almost beyond belief.

Take any other low-priced car on the market. Pit it against this new Overland. Compare them for sheer speed, for abundance of power, for riding comfort and economy, and you'll find this car will back anything else clean off the boards.

That's a strong statement, but a fact nevertheless.



4 cylinder en bloc motor
3 3/8" bore x 5" stroke
104-inch wheelbase
4-inch tires

Catalogue

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Overland

\$ 635

5 PASSENGER TOURING CAR

Roadster \$620

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ear springs
body
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lights

Magnetic speedometer
Complete equipment
5-passenger touring \$635
Roadster \$620

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Company, Toledo, Ohio

U. S. A."

Try it yourself and see.
Here are more important facts.

It has four-inch tires which are more than generous for a car of this size.

Not only has it a large and roomy body, but it has an attractive, up-to-date streamline body.

It has the latest and most improved system of ignition.

It has the cantilever springs—the easiest riding springs in the world.

What's more, it's complete. Not a thing to buy. You get the finest Auto-Lite electric starting and lighting system, magnetic speedometer, one-man top, demount-

able rims and practically every accessory found on the highest priced cars.

From a driving standpoint, the new car is ideal. It's light, easy to handle and anyone can drive it.

Take one look and be convinced.

And mark these words—the car is destined to be regarded and referred to as one of the really great achievements of the great automobile industry.

Yet it only goes to prove how big production can cut cost and save you money.

First come, first served. See the nearest Overland dealer and place your order now.

With the Live Stock Men.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

DAIRYING AND DAIRYMEN.

People continue to get gored by bulls all over the State.

A high producing cow must have more feed than a common one.

Dairymen continue to conduct dirty places and some of them are being fined almost daily.

More purebreds for the Napa State Hospital are to be purchased by Manager Owen Duffy on an Eastern trip late in September.

Maple Crest Pontiac Application, owned in Ohio, recently finished, a record of 1075.44 pounds fat from milk testing 4.59.

A half-acre dairy barn for 120 cows and 400 tons of hay was recently completed by A. S. Quadrus at Nord, Butte county.

A branch cheese factory has been established at Esparto by the Napa Cheese Co. They are handling 1000 gallons of milk daily.

Lloyd Wallace of Ukiah has a 35-cow dairy outfit modeled as closely as possible after the Carnation dairy at the Panama Pacific.

The new cheese factory addition to the Modesto creamery will begin work about Aug. 15 with capacity for the product of 200 cows.

The average production of 4081 cows in seven Western Oregon districts for the year 1915-16 was 4997 pounds milk yielding 227 pounds butterfat.

Three hundred and twenty rolls of short-weight butter were recently seized by the Sealer of Weights and Measures, and contributed to county institutions.

The Soledad Creamery called a meeting of dairymen recently. It was decided to organize a co-operative creamery and put up a permanent modern plant.

John Simas of Scott Valley, Siskiyou county, has installed milking machines for 200 cows, far from any railroad. Irrigation is needed here, and is being agitated.

Allenvail Topsy Walker made 23.32 pounds butter in seven days and 94.36 pounds in 30 days. She is to be sold at the Rhoades & McAlister sale at Rivera Sept. 19 and 20.

J. W. Benoit reports the sale last week of the registered Holstein bull Wayne Walhalla Colantha, whose sire is El Prado Wayne Colantha. The bull was purchased by Ray L. Morgan of Phoenix, Arizona.

The Western Meat Company's new cheese factory at Requa, Del Norte county, is about completed and is expected to be running by the time this is printed; 850 cows owned by nearby farmers have been signed up and the operators expect to handle at least 20,000 lbs. of milk from the start.

Manager Peck of the Visalia Co-operative Creamery at Visalia states that he will begin shipping butter East before the middle of August again, this carload making the seventh one this year. He says he expects the Eastern market for California butter to be good this fall. The last car he shipped was May 22 and Philadelphia said that it arrived in fine condition.

Mosetta Mutual Paul Johanna, now on official yearly test, has completed 182½ days of the test, producing 28.61 lbs. butter from 688 lbs. milk in seven days and 119.34 lbs. butter from 2883.6 lbs. of milk in 30 days

and 706.26 lbs. of butter from 16842.6 lbs. of milk in 182½ days, which is the greatest amount of milk and butter ever officially produced in the latter number of days, in the world. She will be continued on her official test for 365 days. She is a daughter of Prince Johanna De Kol 2nd, whose grandsire is a brother to the world record cow Finderne Pride Johanna Rue.

Miss Valley Mead De Kol Walker, owned by Mrs. Anita M. Baldwin, Santa Anita, recently broke the California State Senior Two Year Old record, completing her 7- and 30-day test on July 29, 1916, about 60 days after freshening. In seven days she produced 25.68 lbs. butter from 538 pounds of milk; and in 30 days she produced 100.00 pounds of butter from 2304.6 pounds of milk, which is more butter and milk than has ever been produced in the same time by a Senior two-year-old in the State. This 7- and 30-day record is also greater than the three-year-old California State record. Her sire, Prince Gelsche Walker, and 22 of his daughters including this heifer, were recently purchased from A. W. Morris & Sons, by Mrs. Baldwin. This addition to the list gives Prince Gelsche Walker three State record daughters. Her dam, De Kol of Valley Mead, produced 26.55 pounds of butter in 7 days, 107.78 pounds butter in 30 days and 1011.71 pounds butter in 365 days.

SWINE BREEDERS AND STOCK.

A Poland China sale will be held Sept. 20 at the Stanislaus Livestock Show and Exposition, Modesto.

Fred Ross of Kings county is fitting a nice herd of Poland Chinas for the State Fair next month.

Neither the Bernstein or Trewhitt herds of Poland Chinas from Kings county will be shown at the State Fair this fall.

The Butte City ranch is buying an imported Berkshire boar sired by Epochal, to mate with their Mayhew's Leader 6th pigs.

J. P. Walker of Tulare county is fitting up a small herd of Durocs for the Sacramento Fair. This is Mr. Walker's first trip to Sacramento.

Two carloads of mules were shipped from Arbuckle last week for the French government. P. E. Gaskill and J. A. Smith were the buyers. The price averaged \$125 to \$150.

If the present intention of the members of the Kings County Poland China Breeders' Ass'n is carried out there will be 200 head of registered hogs sold at their sale in October, of which number only 10 per cent will be boars.

Miss Josie Fuller of Imperial county, aged 17, has 50 porkers. Her figures for cost of production to market condition are 3½ cents per pound, but she spent too much time caring for them to win the University Pig Club prize.

A Ventura hog raiser lost about 100 hogs which had been wallowing in a spring supplied with water from arsenic rock. Another report of the same day tells of an old miner in San Bernardino county being found dying at an arsenic waterhole in the desert.

M. Bassett of Hanford will have one of the best show herds at the State Fair that he has ever exhibited, in fact one of the best Poland China herds that has ever been put in a show ring anywhere. His hogs at this time are in the pink of condition.

E. K. Carnes and F. H. Berdeen of Nimbus, Sacramento county, bought the Duroc bred sow Golden Lassie last January from J. K. Frazer of Denair for \$83 at the Cal. Swine Breeders' Sale. She farrowed 14 pigs March 20 and raised all of

LIVESTOCK DIRECTORY.

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SWINE.

BILLIKIN HERD OF IMPROVED CHESTER WHITES—The kind that makes money. Purebred—registered—cholera immune. An extra fine lot of weaned pigs—both sexes—representing the best and most popular blood lines this breed produces. Five different sires used. Can mate up not akin. Quality combined with size. Rapid growing—early maturing. A few nice fall gilts that will be bred and ready to ship in September. Write for prices and circular. C. B. Cunningham, Mills, Sacramento County, Calif.

YOUNG POLAND CHINAS, LARGE TYPE—Boar IBA Wonder won first and Reserve Championship F. P. I. E., weighing 730 pounds under 2 years and in breeding condition. 60-day special—fine young sows bred to IBA Wonder at very low prices; also weanling pigs, either sex. Satisfaction, or money refunded. W. A. Young, Lodi, Cal.

REGISTERED DUCROC-JERSEYS—All ages. We have produced hogs weighing 340 lbs. at 7 months, at a cost of 3 1-10 cents per pound, including pasture, grain and upkeep of sow. If you want some of the kind it pays to raise, we would suggest that you order immediately, as our spring stock is going rapidly. Haden Smith, Woodland, Route No. 1, Box 84D.

BERKSHIRE BOAR—Son of Star Value. Values Bachelor 137,554. Dam Lady Bachelor 5th. Six years old, weighs 700 lbs. in light breeding condition. Active. Excellent sire, \$65. Registered pigs sired by above and Wilts Masterpiece 210,102, \$15. Trios, \$40. W. H. Waugh, Riverside, Cal.

REGISTERED DUCROC-JERSEY—Weanlings, shoats, gilts and boars. Unrelated. Many of our hogs are related to the several prize-winners at Panama Exposition. This herd is undoubtedly the finest in the State. Have had as many as 19 pigs to a litter. Grange Stock & Poultry Farm, Yountville, Napa Co., Cal.

REGISTERED BERKSHIRES—World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapeville Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

NOW IS THE TIME to breed for Fall litters. I have a choice lot of young boars ready for immediate service. Also bred sows, bred gilts, weanlings of both sexes. Attractive prices will be quoted for quick sale. Geo. A. Smith, Corcoran, Cal.

BERKSHIRES—Herd headed by Artful Masterpiece and Improver B, Grand Champion at California State Fair, 1912 and 1913 respectively. Open sows, service boars and weanlings for sale. Oak Grove Dairy Farm, Box 1, Woodland.

DUROCS from River Bend Farm, St. Helena, Cal., are large type, smooth, rangy, with fine backs and deep cherry color. We sell only those we'd like to keep in our herd. Don't write us if you want cheap stock.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

HAMPSHIRE SWINE—Fancy belted boars and sows. Good ones, \$25 and \$30. Better ones up to \$45. All registered. Ben F. Thorpe, Manager, Canfield Estate Ranches, Bonsall, Cal.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

LARGE, QUICK MATURING registered Berkshires—Both sexes, \$10 each for weanlings. Older ones at farmer's prices. J. H. Romberger, Modesto, Cal.

REGISTERED PUREBRED BERKSHIRE PIGS—Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

IMPERIAL STOCK FARM BERKSHIRES—Registered stock of all ages. Prices and description on application. R. J. Merrill & Son, Morgan Hill.

LAKEVIEW STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

FOR SALE—150 head stock hogs. Will weigh from 75 lbs. to 180 lbs. Good, thrifty condition. A. H. Armstrong, Wheatland, Cal.

REGISTERED BERKSHIRES—For sale, bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

POLAND CHINAS—Young stock; either sex. Write for pedigree. Reasonable prices. Edw. A. Hall, Watsonville, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Linn, Linview, Route 4, Modesto, Cal.

FOR SALE—Thoroughbred Poland Boar six months old. Weight 185. Perfect type. E. T. Brown, Burbank.

REGISTERED IMPROVED CHESTER WHITES—Grizzly Bear Ranch, East Auburn, Cal.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. E. Beckman, Lodi, Cal.

REGISTERED DUCROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boudier & Son, Napa.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. Mikesell, Manteca.

REGISTERED DUCROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

REGISTERED BERKSHIRES—Weanling pigs, \$10 each. G. A. Casey, R. 7, San Jose.

LARGE TYPE POLAND CHINAS—Now booking orders for Spring pigs from our Nebraska prize-winning sows. H. I. Marsh, Route A, 348, Modesto.

POLAND CHINA HOGS FOR SALE—Registration papers furnished free. C. A. Cooley, Durham, Cal.

REGISTERED DUCROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED POLAND CHINAS. Young stock for sale. J. H. Cook, Paradise, Cal.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRE PIGS—Write or call Greenwood Ranch, Brentwood, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington.

HAMPSHIRE—Registered stock for pride and profit. Frank Brown, Burbank.

REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED POLAND-CHINAS and Duroc Jerseys. H. F. Harrold, Orland.

CURTIS DUCROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUCROCS—All ages. Either sex. W. A. Pack, Hollister, Cal.

REGISTERED DUCROCS from best Eastern blood lines. E. S. Southworth, Napa.

POLAND CHINA HOGS—Registered. Cholera immune. R. J. Miller, Llewellyn Ranch, Lathrop.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

CHAS. GOODMAN—Breeder of high-class Berkshire Swine. Williams, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

REGISTERED DUCROC-JERSEY SWINE—Weanlings only. F. M. Johnson, Napa, Cal.

REGISTERED O. I. C. SWINE—C. D. CONWAY, Ripon, Cal.

REGISTERED DUCROCS—H. N. Leninger, R. D. 4, Chico, Cal.

REGISTERED POLAND-CHINA HOGS—J. W. Wakefield, Acampo.

REGISTERED DUCROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

BERKSHIRES—Carruthers Farms, Mayfield, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Rambouillet and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

THE BULLARD FLOCK RAMBOUILLETS—Founded 1870. Largest Merinos on Pacific Coast. The Bullard Company, Woodland, Cal.

FOR SALE—Shropshire bucks, yearlings and lambs. Individuals to carlots. Purebred but not registered. J. R. Bloom, Dixon.

KATKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

BREEDER OF MERINO SHEEP—Rams for sale. J. Bidegaray, Fresno, Cal.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers of Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets. Hanford, Cal.

BEEF CATTLE.

FAIR OAKS RANCH, Whites, Cal.—Young registered Shorthorn bulls for sale. Sired by Landseer 379318, grandson of Imported Villager 295881.

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Palcinas Ranch Co., 320 Sharon Bldg., San Francisco.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Escondido, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords. Newman, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

DAIRY CATTLE.

GUERNSEY BULL CALVES from Grand Champion Bull, Abe Hannen, Seattle, both sexes, from Grand Champion 700-lb. boar and Grand and Junior Champion Sow, Bella Vista Herd, J. W. Henderson, 1st National Bank Bldg. Berkeley, Cal.

REGISTERED HOLSTEINS—Grandsons of King Sires and of world's record cow, Cream-elle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stoppel, San Lorenzo, Cal.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Hegdon, Tulare, Cal.

VENADERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly record. Gay H. Venader, Route 1, Modesto, Cal.

REGISTERED HOLSTEINS—Colantha Johanna Lad and Araba De Kol breeding. Young stock for sale from A. R. O. cows. Lester A. Decker, Napa, Cal.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3 lbs. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

HOLSTEIN BULLS—Well marked, large straight individuals. Tuberculin tested. \$1.00 up. Packwood Farm Herd. W. F. Mitchell, Visalia.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

HORSE OWNERS! USE

CAUSTIC BALSAM.
A safe, speedy and positive cure. The safest, most BLISTER over-used. Removes all bunches from Horses. Impossible to produce scar or blemish. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Cleveland, O.

DAIRY CATTLE.

FOR SALE—Thoroughbred Holstein 3-year-old cow "Queen Bess Walker Du Kol." Freshened last March. Disposing of my ranch is reason for selling. Will send photo if desired. O. L. Graeber, R. F. D. 5, Watsonville, Cal.

REGISTERED HOLSTEINS—Have a few Bulls from El Prado Wayne Colantha, whose dams and sire's dams average per cent fat at 4 years is 5.01. See my stock at the State Fair. J. W. Benoit, Route C, Modesto, Cal.

REGISTERED HOLSTEINS—Sired by King Korndyke Hengerveld Ormsby 53822. Dam Pieterje Maid Ormsby 78051, world's record when made 35.56. Send for pedigrees. Geo. Konias, Modesto, Cal.

REGISTERED HOLSTEIN BULL CALVES—Sired by Lorena Korndyke Alcarta, whose dam made 29.75 pounds butter fat in seven days as a four-year-old. J. M. Campbell, Escalon, Cal.

REGISTERED HOLSTEIN BULL CALVES—Grandsons of Dutchland Governor Sir Colantha. Write or see them. H. J. Reamer, Haywards, Cal.

REGISTERED HOLSTEINS—32 high-grade Holstein heifers coming fresh this Fall for sale. E. E. Freeman, Route B, Modesto, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs. butter as two-year-olds. A. A. Jenkins, Tulare.

THE MCCLLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

TWENTY-EIGHT high grade yearling and two-year-old Holstein heifers for sale; some bred. K. W. Abbott, Milpitas, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios R. 2 Modesto.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School Whittier, Cal.

WILLOWMOOR AYRSHIRES—Great records; economy. 300 head in herd. J. W. Chas. Redmond, Wash.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Snienn, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland R. 2, Tulare.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS Corp., Importers and Breeders, Woodland, Cal.

THOROUGHbred DUROC-JERSEYS to farrow in August. Dr. T. A. Guthrie, Woodland, Cal.

REGISTERED JERSEY BULLS from Register of Merit Cows. D. F. Conant, R. "E," Modesto.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

BREEDERS OF A. R. O. Holstein-Friesian cattle exclusively. Dirk Dairy Farm, Lemoore.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

YOUNG REGISTERED JERSEY BULL CALVES at reasonable prices. O. J. Ames, Oakland.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chino, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

LINWOOD FARM—Registered Holsteins and Imported Guernseys. Santa Cruz, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnyside Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto, Cal.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes, McCoy, Oregon.

FRESH JERSEY MILK COWS for sale. E. M. Locke, Lockeford, Cal.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Calif.

HORSES AND MULES.

REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders, Easton & Ward, Proprietors, Burlingame, Cal.

DOGS.

AN OPPORTUNITY to purchase thoroughbred Collies. Having a greater number of thoroughbred Scotch Collies than I can accommodate, am willing to sell a few one year and older at a great sacrifice. The dogs are all bred by the noted prize-winners of the BROWDALE KENNELS, Redwood City.

MISCELLANEOUS.

CROLEY'S CALF FEED with skim milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

D. O. LIVELY, 216 Hobart Building, San Francisco, buys and sells livestock—any kind—any quantity.

DUROCS AND GUERNSEY BULL CALVES Glts bred to 900-lb. boar. Ed. E. Johnson, Turlock, Cal.

RHOADES & RHOADES

Expert Live Stock Auctioneers.

PUREBRED STOCK SALES A SPECIALTY.

Sales Conducted in all parts of Calif.

Ben. A. Rhoades, Auctioneer.

1501-2-5 So. Main St., Los Angeles, Cal.

them. Some of them as well as other stock will be shown at the State Fair.

The National Livestock Shippers' Protective League recently met in Chicago to perfect its organization which is to look after shippers' interests at stockyards, on the road, and at legislatures and Congress.

The average price paid to producers of the United States for unwashed wool during June was 28.7c per pound, which compares with 23.7c, 18.4c, 15.6c, 18.7c, 15.5c and 19.5c, respectively, in June of the past six years. These estimates are based upon reports of crop correspondents of the Bureau of Crop Estimates.

At the monthly meeting of the Stanislaus Duroc Swine Breeders' Ass'n, the by-laws and constitution were adopted. A consignment sale will be held during the Livestock Show and Exposition to be held at Modesto Sept. 18-23. Prof. J. I. Thompson of University Farm will select all hogs to be sold. Forty head of the choicest hogs obtainable will be auctioned.

STANISLAUS FARMERS' UNION LIVESTOCK SALE.

The Farmers' Union of Stanislaus county has organized the Stanislaus County Live Stock Sales Association and will hold their first sale at Modesto September 20 during the Live Stock Show and Exposition. The committee appointed by the Farmers' Union to handle this sale and the entire marketing problem is J. J. Hardy, C. L. Sanders, Otis L. Linn, all of Modesto. The Market Manager, Otis L. Linn, expects to have assembled several cars of hogs, one or more cars of veal calves, and other farm products.

Because of a lack of uniformity in live stock feeding it is difficult for buyers to fix the value on animals—particularly hogs—without seeing them.

Raisers and breeders of swine are dissatisfied in many instances be-



Sanitary Barn and Dairy Equipment

Stalls, Stanchions, Feed and Litter Carriers

Catalogs and Barn Plan Books Free.

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cause grain-fed hogs sell for no more money than those that have been alfalfa grazed or that are tubercular by having been fed infected milk.

The committee will send out tagging slips to the farmers on which those having live stock for sale will enter a description giving age, weights, and method of feeding.

With reliable information of this character the buyer will know what he is buying and the seller will learn that proper feeding brings its reward.

This will be the first livestock marketing sale of its kind ever held in California.

There will be no public outcry of the market animals.

CARRUTHER'S BERKSHIRE SALE.

The Carruthers Berkshire sale, August 2d, at Mayfield, was not only a record breaker for prices on this Coast, but we understand tops any sale held in the East so far this season by \$10 per head. One of the Rural Press field men, who is recently from the East, and who attended the sale, said: "It was the most remarkable sale I ever saw, and I have helped in possibly 150 sales. Up to the time I left the sale, only three hogs were started for less than \$100 and only two sold for less than \$100. No bid in the entire day was less than \$5, and the average of sale was \$178. I never in all my sales experience saw anything its equal."

Mr. Carruthers reports that since the sale he has had many inquiries for more foundation stock. As the hogs sold were all entered for exhibition at the coming State Fair, readers will doubtless have the pleasure of seeing them there under the names of their new owners.

H. L. and E. H. Murphy paid \$405 for the three-year-old sow Rival's Pointer Star, the top price of the sale. Jas. Mills was the largest buyer, 12 sows and one boar. He intends showing at the State Fair and took advantage of the sale to fill his classes.

Following is the list of buyers and prices paid:

BUYERS, STOCK, AND PRICES.			
Name of Purchaser.	Hog	Sex	Farrowed Price
Jas. Mills, Willows.....	Rookwood Belle 6th.....	Sow	June, 1914 \$225
Jas. Mills, Willows.....	Rookwood Belle 8th.....	Sow	Sept., 1915 215
Jas. Mills, Willows.....	Ames' Rival 11th.....	Boar	Sept., 1915 305
Jas. Mills, Willows.....	Rookwood Laurel 24th.....	Sow	Sept., 1915 265
Jas. Mills, Willows.....	Steybrae Rosemeade 2nd	Sow	Mar., 1915 150
Jas. Mills, Willows.....	Mayfield Rosemeade 6th	Sow	Dec., 1915 220
Jas. Mills, Willows.....	Forest Grove Duchess 9th	Sow	Oct., 1915 165
Jas. Mills, Willows.....	Forest Grove Laurel 9th	Sow	Sept., 1915 225
Jas. Mills, Willows.....	Forest Grove Laurel 7th	Sow	Sept., 1915 225
Jas. Mills, Willows.....	Forest Grove Laurel 8th	Sow	Sept., 1915 400
Jas. Mills, Willows.....	Rival's Pointer Star 14th	Sow	Apr., 1913 225
Jas. Mills, Willows.....	Forest Grove Frances 2nd	Sow	Nov., 1915 190
F. A. Brush, Santa Rosa.....	Rookwood Belle 7th.....	Sow	Sept., 1915 185
F. A. Brush, Santa Rosa.....	Mayfield Lady 2nd.....	Sow	Nov., 1915 250
F. A. Brush, Santa Rosa.....	Mayfield Rookwood 2nd	Boar	Dec., 1915 130
F. A. Brush, Santa Rosa.....	Mayfield Rosemeade 5th	Sow	Dec., 1915 175
Mark Requa, Orland.....	Rookwood Lady 9th.....	Sow	Mar., 1915 160
Mark Requa, Orland.....	Steybrae Laurel 2nd.....	Sow	Oct., 1915 100
Mark Requa, Orland.....	Iowana Countess 8th.....	Sow	Nov., 1915 135
Mark Requa, Orland.....	Forest Grove Frances.....	Sow	Nov., 1915 110
Napa State Hospital, Napa.....	Mayfield Master 7th.....	Boar	Dec., 1916 80
Napa State Hospital, Napa.....	Mayfield Best.....	Boar	Nov., 1915 210
E. O. McCormick, San Francisco.....	Steybrae Rosemeade 3rd.....	Sow	Mar., 1915 155
R. J. Merrill & Son, Morgan Hill.....	Mayfield Lady.....	Sow	Nov., 1915 155
Chas. Turner, San Jose.....	Steybrae Laurel 3rd.....	Sow	May, 1915 100
Chas. Turner, San Jose.....	Iowana Royal 23rd.....	Boar	Sept., 1914 100
C. A. Thayer, San Rafael.....	Steybrae Brummel 4th.....	Boar	Sept., 1915 150
C. A. Thayer, San Rafael.....	Iowana Empress 6th.....	Sow	May, 1915 100
C. A. Thayer, San Rafael.....	Royal Rival 6th.....	Boar	May, 1915 250
Prof. C. F. Curtis (bid in by Frost).....	P. F. L. E. Lady 3rd.....	Sow	Apr., 1916 145
H. L. Hill, Los Altos.....	Mayfield Champion.....	Boar	Feb., 1916 135
H. L. Hill, Los Altos.....	Mayfield Queen 3rd.....	Sow	Feb., 1916 60
D. O. Lively, San Francisco.....	Mayfield Champion 2nd.....	Boar	Feb., 1916 80
D. B. Wentworth, Napa.....	Mayfield Queen 2nd.....	Sow	Apr., 1913 405
Harry Murphy.....	Rival's Pointer Star 15th	Sow	Apr., 1914 125
J. M. Bomberger, Modesto.....	Rival's Pointer Star 16th	Sow	Apr., 1914 125

Napa County Fair, Sept. 14-16, is to be managed by H. H. Whitman, under auspices of the Farm Bureau. Prizes will be liberal, but there will be no races.

Reduced Freight on Silos

Beginning August 1, we are shipping Indiana Silos in carload lots to points in the Sacramento and San Joaquin Valleys.

The carload freight rate will mean a big saving over local freight rates to the man ordering one or two silos.

This is going to be a banner year for the

INDIANA SILO

in California and every other state. Farmers and stockmen know that silage is the only way to overcome high cost of feeding. They know they must have a silo, to get full value from their corn crop.

Over 60,000 Indiana Silos have given satisfaction to American farmers. This standard silo is now built on the Pacific Coast. We use select Oregon fir staves from our own mills. Experts say that fir is the best silo wood.

Write today for our Free Silo Book, and learn how much you can save by our carload method of shipping silos.

We also offer terms to responsible farmers.

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Salem, Oregon U. S. A.

Owners of the Standing Timber, the Logging Camps, the Lumber Mills and Silo Factories.



FREE PROOF!

The Chas. K. Spaulding Logging Co. Salem, Oregon

How much can I save through your carload method of shipping silos?

Name.....

Address.....

Methods of a Progressive Cattle Company.

[Written for Pacific Rural Press.]

To produce cattle at a minimum expense is the goal which every progressive cattle man is hoping for and in this respect Robinson Bros. of Merced county are perhaps as far advanced as any concern in the State.

The ranges of this company are located largely in the rolling foothills adjoining the Sierra Nevada mountains, comprising some 30,000 acres, all of which are free from timber and fenced, with an average carrying capacity of one head to 10 or 12 acres.

Water is one of the problems on much of their range lands; but they carefully conserve water from winter rains on part of their land and pump in other places. The range dependent upon natural water is fed off while water is still available.

Calving season here starts as early as December and continues till May 1, the endeavor being to have the calves come when green feed is abundant. In order that the mother may have a better supply of milk and consequently give the calf a better start. By this system the calf grows with the feed till the feed dries up, by which time it is old enough to be weaned and take care of itself.

That their percentage of calves may be high, unusually good care is given the heifers with their first calves, these being run on a separate range before calving and carefully watched in order that they may be assisted in calving when the need arises. In this connection it is interesting to note that fully 10 per cent of the heifers need this assistance.

Contagious abortion is another factor which has never worked havoc in the herds on this ranch, largely due, it is thought, to the care exercised in buying bulls from herds free of this disease.

One bull to every 20 cows is the custom, and while more cows could be served in a smaller herd, the smaller number of cows is thought advisable when so many cows are being run, in order to insure early and sure breeding, which does not result if the bulls are overworked during the short breeding season.

Purebred Sires.—For years past it has been the practice of this company to maintain Shorthorn breeding in their cow herd by use of purebred and registered Shorthorn bulls. This is deemed advisable on account of the superior milking qualifications of the Shorthorn as compared with the Hereford and an idea that they have better bone.

Notwithstanding their preference for Shorthorn breeding cows, they like the Hereford steer because of his ability as a rustler and in withstanding the wet winters. In order to fill both of these demands they breed to both Shorthorn and Hereford bulls, selecting the best Shorthorn heifers for breeding purposes when calves, and turning the balance into the beef herds.

Immature breeding of either heifers or bulls is not believed in, heifers never being bred till they are long yearlings, and bulls not being put into service till two years old. This overcomes stunting of breeding animals, a poor practice with any kind of livestock.

That they believe in using the best sires available is demonstrated by

their purchase last year of two carloads of bulls in the middle west at a cost of \$200 each. All of these bulls were registered and had not been pampered. It is to this latter reason that Robinson Bros. attribute the fact that they were able to turn the entire lot onto the range and keep them there from the time they arrived till the present. After going through a breeding season these bulls were in equally good condition as the native cattle. Because of the general belief that bulls grown on the farm cannot stand the hardships of the range, this experience seems to be valuable.

Where high-priced bulls like these are used, it is natural that they should be kept in service as long as practicable. By segregating the breeding cows from their own sires the use of the 70 bulls on this ranch is only limited by the life of the bulls' breeding qualifications.

Like all California cattle men it is the practice here to market the steers direct from the grass, the one outstanding requirement being that they be sold when fat. Because of this, some are held over and sold as three-year-olds while others are sold as two-year-olds, the weights varying from 1000 to 1700 pounds, according to age.

DAIRY CALF FEEDING.

[Written for Pacific Rural Press.]

Over-feeding the dairy calf is the worst thing you can do, in the estimation of John Belloni, an old and experienced dairyman of Fortuna, Humboldt county.

Like all successful calf raisers, Mr. Belloni believes that judgment is the essential thing in raising a calf and for that reason it is difficult to put on paper any rules that will govern all conditions. His chief advice is to always keep the calf growing.

At the beginning, he feeds whole milk, warm from the cow; and continues with it till he sees that the calf is going along well. This may take a week or several weeks, but in any event it is followed by a gradual diminishing of the whole milk and the adding of skim milk till the calf is finally getting nothing but skim milk. This skim milk is fed warm, direct from the separator.

Just how long this skim milk ration should be fed, again depends upon the condition of the calf. If it is growing well and has begun to partake of pasture, it is weaned at three months; but if it seems backward, it may be fed skim milk another month or two. However long it is fed, either whole or skim milk, it is never given all it will drink at a time, the practice being to keep it always wanting a little more.

Although scouring is exceptional in the Belloni herd, such cases are treated by boiling rice in milk till it is entirely broken down and feeding this with a light ration of fresh warm milk. This is constipating and is a sure cure, according to Mr. Belloni. But it should be followed by careful feeding to be effective, the whole milk ration again being changed gradually to skim milk, rather than to make an abrupt change.

Western American Berkshire Congress

MEETING
Sept. 4

SHOW
Sept. 5 and 6

SALE
Sept. 7

AT STATE FAIR GROUNDS, SACRAMENTO.

BERKSHIRE WEEK ON THE COAST

THE CONGRESS MEETING should draw every Berkshire man on the Pacific Slope. A strong program has been prepared and the discussions will be led by men prominent in Berkshire circles—men who have something to say and know how to say it.

THE CONGRESS SHOW will be the greatest exhibit of Berkshires ever held on the Coast. It will be a wonderful show of Berkshire breeding stock of the highest type and quality.

THE CONGRESS SALE will be an offering of choice selected Berkshire breeding animals. Only good ones, and from the best and most popular blood lines. Consignments to the Sale are from some of the most prominent Berkshire Breeders in the West—A. B. Humphrey, Jos. Wilson, Clark Bros., F. L. Hall, C. M. Talmadge, F. R. Steel, J. L. Thatcher, Hollow Hill Farm, Fontana Land Co., G. A. Murphy, H. L. Murphy, Oak Grove Dairy Farm, and others.

This is an opportunity to get the best for your foundation herd.

Remember the dates, and be there.

J. L. THATCHER,
President.
Western American Berkshire Congress,
Riverside, Cal.

F. R. STEEL,
Secretary.
Western American Berkshire Congress,
Grant's Pass, Oregon.

GRANDSONS OF TILLY ALCARTRA



Prince Alcartra Korndyke,
Best bred son of Tilly Alcartra.

Our supply of these young sires is always limited, but we have a few now which we are offering at very reasonable prices.

Write us at once, or call and see the herd.

J. S. GIBSON CO., Box 97, Williams, Cal.
"THE NAME GIBSON INSURES QUALITY."

At prices within reach of every Breeder and Dairyman.

When you buy a son of our herd sire, Prince Alcartra Korndyke, you get more than a Holstein bull with registration papers—you get a grandson of the world's greatest milk cow out of a high-testing A. R. O. dam. Our herd of females has been developed into one of the best in the State.

Hillcrest Stock Farm

Thornton S. Glide, Prop.

DAVIS, CAL.

Shropshire and Merino Sheep
and
Shorthorn Cattle

Shropshires sired by rams imported by me from England.

HILLCREST LAD,
Imported 1911.

SHENSTONE CAVENDISH,
Imported 1913.

Individuals and Carload Lots.
A Few Shorthorn Bulls for Sale.



Hillcrest Lad.
1st Prize State Fair 1911.

Duroc Jersey Pigs

Forty head of A No. 1 pigs, both sexes, January, February and March farrow, priced to sell, and to sell right now. All registered, well bred, well developed and guaranteed satisfactory, or money refunded. Conditions are such that we must materially reduce our herd. This is your opportunity. Details for a postal.

DIRK DAIRY FARM

Lemoore,

California.

Napa Hospital Model Dairy.

[Written for Pacific Rural Press.]

To visit the Napa State Hospital's dairy is, in the writer's opinion, a privilege, because it represents all that is modern in the construction of dairy buildings.

Until recently, this institution, like similar ones owned by the State, paid scant attention to dairy husbandry, the chief requirement being that the dairy shall supply enough milk for the patients and caretakers.

Two years ago the first work of improvement at the Napa institution was started by the purchase of a small herd of registered Holsteins. These as well as the comparatively large herd of grades were cared for in the old dairy barn, till within the past year when the new buildings were completed.

Situated on high land with abundance of drainage, both for the barns and corrals, the buildings were constructed of cement inside and out, a pebble dash being used for the outside finish, which goes a long way toward the beautification scheme.

The milking barn proper has a capacity of 200 cows, there being eight rows of steel stanchions of 25-cow capacity each. Plenty of light and ventilation are supplied through windows along the gabled roofs, each gable covering two strings of cows.

The concrete floors have a gradual slope from one end of the barn to the other, being drained with 14-inch gutters. Gutters and feed alleys are also made of concrete. Along the western end of the barn and running in the opposite direction to the stanchions, a feed and milk passageway furnishes room for the carrier system which is used in transferring feed and milk to and from the building.

This passageway extends through to the feed and silage room adjacent to the milking barn on the north. Here the lower portions of the two concrete silos, located on either side of the feed carrier, are enclosed in the main feed room so that emptying may be done on the concrete floor in all kinds of weather without discomfort.

The milk and washing rooms are located at the front of the milking stable, but under a separate roof. The latter is 18 by 20 feet, equipped with steam for sterilizing; and directly connected with a similar sized airing space for can and utensils.

No Flies on Airing Cans.—This airing space is one of the features of the dairy buildings, being enclosed on two sides by concrete walls and on the other two sides by fly-proof screens. The roof is also made of screen allowing abundance of sunlight and ventilation for the cans and protecting them absolutely from flies.

Modern appliances have been installed in the milk house, the milk passing through a gauze screened funnel and then over a glass-enclosed brine cooler. Separator room, office, test room, refrigerator, and cheese curing room are also located under the main roof of the milk house.

The plant as it stands is not only a model of convenience and beauty, but is sanitary in every respect, the finished product meeting the requirements of certified milk; except that it is not bottled, but transferred to the kitchens in cans.

One hundred and forty cows, mostly Holsteins, are being milked, but the policy as set forth by Owen Duffey, business manager of the institution, will be to dispose of the grades and put the money into purebreds as fast as possible.

DAIRY LAW DEFECTIVE.

[Written for Pacific Rural Press.]

At the request of F. E. Andreason, Sec. State Dairy Bureau, the Attorney General of the State has rendered an opinion relative to his interpretation of the dairy legislation to go into force October 1.

His opinion is that because of the omission of the word butter, the law does not include that product in so far as requiring all cream to be either pasteurized or from tuberculin-tested cows.

He also interprets the law to exempt the grading of market milk and cream, except in cities maintaining an inspection service. If this opinion is upheld by the courts, it means that while all milk for human consumption must either be pasteurized or from tuberculin-tested cows, it need not be sold by grade except in those cities which employ inspectors.

Still another opinion of the Attorney General, rendered at the request of State Veterinarian Chas. Keane, is that the law does not allow the branding of cattle which have passed the tuberculin test to be required, thus making it extremely difficult to identify animals with a clean bill of health.

CALIFORNIA BANKERS TO AID STOCK RAISERS.

[Written for Pacific Rural Press.]

An attempt is to be made by the California State Bankers' Association to encourage the production of more and better livestock in California. Such was the announcement of H. C. Carr, chairman of the Agricultural Committee of the State Bankers' Ass'n at a meeting of the Tulare County Swine Breeders' Ass'n, held at Woodville, Tulare county, August 4.

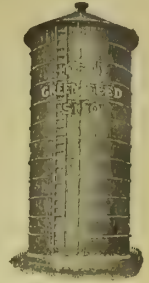
As a starter of this movement Mr. Carr has agreed to loan money to any boy who lives on a farm in the community adjacent to Porterville with which to purchase a bred purebred gilt of the breed chosen by the boy. These gilts are to be furnished by Mr. Carr at actual cost from the breeder; and will be secured by the boy's personal interest-bearing note, no endorsement from his father being necessary or expected. The feeding of these pigs will come under the supervision of the Pig Club management, but need not necessarily be confined to members of such clubs.

Mr. Carr states that his object is not philanthropic but purely one of good business as he realizes that better breeding, feeding, etc., will result in bigger profits; and that when the farmers of his community become more prosperous, the banks will also become more prosperous. It is his intention to spend considerable time among the bankers of the State in order that this and other plans for improving livestock conditions in the State may be successfully carried out.

The Ideal Green Feed Silo

BECAUSE OF ITS
PROPER DESIGN
BEST MATERIAL and
GOOD WORKMANSHIP

will serve you better than any other. It will give you longer service, a better quality of silage and more profit on the investment than any "cheap" silo. This has been proven by the experience of many farmers who have tried both. In the better silage it will produce the Ideal will save the difference between its cost and that of any inferior silo the first season you use it



Refrigerator Type Doors Self-Supporting Roof
Air and Water Tight Foundation Joint Reinforced Top
Extra Heavy Hoops Galvanized Ventilator
No Hinges or Metal Contraptions to Rust and Get out of Order.

The Light Running

Acme Feed Cutter and Silo Filler

Built in seven sizes.

All Steel Frame
Low Feed Table
Malleable Knife Head.
Positive Safety Device



Triple Frame Construction
Accurate Knife Adjustment
Automatic Feeding Device
Reversible Feed Rollers

Independent Control of Blower and Cutter Head Speed.

THE ACME ALFALFA MEAL ATTACHMENT

can be fitted to all sizes of Acme Feed Cutters. This attachment will enable the making of an excellent grade of alfalfa meal from alfalfa hay at a cost not exceeding that for baling.

CUT OUT THE MILL FEED EXPENSE BILL

By feeding Silage and Alfalfa Meal made with an Acme Cutter. Alpha Engines. James Barn Equipment.

De Laval Dairy Supply Co.

San Francisco

Seattle

Everything for the Dairy.

N. H. LOCKE CO., LOCKEFORD, CAL.

Will be at the Live Stock Shows With

Jersey Cattle

and O. I. C. Swine

With our herd will be a number of young Jersey bulls, ready for service, and out of our large high-producing cows, that will be for sale.

Also, young boars of splendid growth and type.

If you need a herd sire, be sure to see this lot at your nearest fair. We are taking them there for your inspection before buying.

If more convenient, visit our ranch or write for prices and pedigrees.



SANTA ANITA RANCHO

ANOAKIA BREEDING FARM



HOLSTEIN CATTLE The breeding herd of registered Holstein cattle at Santa Anita Rancho is made up of individuals selected strictly upon their merits as producers, high individual quality, and production and proven transmitting power of their ancestors. **PRINCE GELSCHER WALKER**, whose combination of breeding, individuality, and the production of his daughters stamp him as one of the greatest young sires of breed.

Females in the herd are making large official record as rapidly as they freshen, and the herd is being developed to become one of the largest groups of high producers in the West.

At present a few bull calves are offered for sale. These are straight, well-marked youngsters, bred right, and priced moderately.

BERKSHIRE HOGS The breeding herd of registered Berkshires has been carefully selected and represents the blood lines that are in the very first rank of the breed. The herd is headed by **KINTYRE LAIRD**, first prize junior yearling and reserve senior champion boar at Panama-Pacific Exposition. He is an unusually good type, and comes from a family noted for uniformity and prize-winning quality.

A few boar pigs are offered at this time.

POLAND-CHINA HOGS In founding the herd of registered Poland-Chinas at Santa Anita Rancho, the choicest individuals of the most noted prize-winning families in the West were drawn upon and for uniformity, desirable size and quality, the herd is unexcelled in the West. At the head of the herd is **BANKER'S BOY**, junior champion and reserve grand champion at P. I. E.

Anita M. Baldwin, W. H. TAYLOR, Superintendent.
Santa Anita, Cal.

HOPLAND STOCK FARM REGISTERED SHORTHORN BULLS

REGISTERED BERKSHIRES (Boars, Bred Sows and Glits)
HERD BOAR, ROYAL POINTER 2nd, 197092, First Prize
Senior Yearling, P. P. I. E.

3 REGISTERED HOLSTEIN BULLS from High-Testing Cows.
SAN FRANCISCO OFFICE, 1210 FLOOD BLDG.

Veterinary Queries and Answers.

[Answered by Dr. H. B. Winttingham, Petaluma, Cal.]

[Subscribers wishing an immediate reply should send money order for \$1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

TEATS GIVE MATTER.

To the Editor: I have a cow which calved about May 5. Within a week, one teat became clogged and since then gives only a half pint or less of watery and stringy corruption. Two more teats have become affected the same way, while only one now furnishes what looks like good milk. We milk all of them clean twice daily, but do not see any more change. She is about seven or eight years old and always gave four or five gallons of milk when fresh. Now there is about half a gallon from the unaffected teat. There is no swelling and there does not appear to be any soreness. Some of my neighbors pronounced the trouble to be garget. A veterinarian to whom it was simply described said tuberculosis.—Mrs. L. A., Meridian.

[This is garget. Give 2 drams potassium iodide twice a day.]

SPOTS ON EYES—SCOURS.

To the Editor: A white spot comes on the eyeballs of several cows. It spreads and the eye waters and seems to go almost blind in two weeks. I have also lost some 2-weeks calves with scours. They have been fed mothers' milk from the start. Weather has been awful warm.—E. H. D., Tulare.

[This is an infectious eye trouble. Place in the eye a few drops twice a day of a solution 25 per cent argyrol. For scours see a dozen answers in the past six months or write to the Cutter Laboratory, Berkeley, for their vaccine.]

COW VERY POOR.

To the Editor: A cow that gave birth to two calves a few weeks ago is very poor and does not give much milk.—J. B., Hanford.

[Have a veterinary examine her. It is possible she did not expel the afterbirth.]

CHICKEN POX.

To the Editor: My hens have chicken pox.—E., Florin.

[The vaccination for chicken pox is successful. The writer is marketing this remedy. And for further information address him.]

HIND LEGS PARALYZED.

To the Editor: Three 50-pound

pigs seem partly paralyzed in their hind legs. Joints are swollen and it is hard to get up. Feeding mostly rolled barley with a little alfalfa.—E. E. R., Burbank.

[This is rheumatism. Give 5 grains each sodium salicylate and formin twice a day and provide dry sleeping quarters.]

NAIL WOUND SWOLLEN.

To the Editor: Have a mare that ran a nail in her foot last winter. It gathered and broke above the hoof, has been painted with iodine, is still swollen and runs sometimes; is quite lame.—T. T. G., Fresno.

[This is a quitter and an operation is necessary for a cure. Consult your veterinarian.]

CHEAP FORMS FOR CONCRETE SILOS.

[Written for Pacific Rural Press.]

That concrete silos can be more cheaply constructed than has ordinarily been the case in this State is evidenced by the experience of A. Haley of Alameda county who constructed two 16x45 silos on his dairy last fall.

It was in making the forms for these silos that Mr. Haley accomplished the greatest saving. He used sectional forms, four feet high and built of rough framing lumber, which were faced with galvanized iron. The outside forms were faced on the inner side with the iron, while those for the inside wall were faced on the front.

There were two of these sections for each form, hinged at each end and connected by an extension section. This latter was fitted with a long extension bolt for the outside form and an expansion bolt for the inside form, enabling the workmen to raise the form for the next section of the silo wall and securely bind it to place by tightening or expanding one of these bolts.

A staff was used in the center of each silo while under construction which supported the inside staging as the walls were being poured. It

also supported the block and tackle for lifting concrete and forms. A horse was used in lifting this material.

By this system very little lumber was required for the two silos, the one set of four-foot forms serving for both silos and still being in good shape for future use.

The Jersey Dorsis Park Lily, owned in New York, produced 16,728 pounds milk containing 957.4 pounds fat; and three months after ending the test, dropped a vigorous heifer calf. The milk, being certified, sold at 20 cents per quart or \$1,556. Valuing her entire grain ration at \$37 per ton, alfalfa hay at \$26 a ton, and silage at \$5 a ton, she netted \$1357 on her milk alone, and her calf is valued at \$2000. The milk profit alone represents 5 per cent interest on \$27,143 valuation.

Good Enough for Any Herd



AGGIE GRACE PONTIAC CREAMELLE
Half Brother of Marie Clothilde
Pontiac Creamelle, California
Champion 2-year-old.

This youngster's dam, Aggie Grace Brookside Princess, grand-daughter of Pontiac Klondyke, the greatest Holstein sire in the world, has an official record of

28.17 lbs. BUTTER - 456 lbs. MILK
TEST 4.9%

This record was an increase of 6 lbs. butter over her previous record and I expect her to make at least 30 lbs. on her next test.

His sire is Dutchland Pietertje Creamelle, one of whose daughters at 2 yrs. 1 month has just made a record of 22.52 lbs. butter, 391.7 lbs. milk, test 4.72%, making her California's champion 2-year-old.

This young bull is perfect in type, is 50% white and just ready for service. Born Apr. 22, 1915. Write or call and see the herd.

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PAPER Blake, McFall & Co., Portland, Oregon



SEGIS PONTIAC MEAD.

Included in the 75 head of Holsteins to be sold at his First Annual Sale, Sept. 12, at Fresno, Frank M. Helm will sell his great young herd sire, Segis Pontiac Mead. This bull's sire is a son of Riverside Sadie De Kol Burke which produced 54,808.2 lbs. of milk in two years. His dam is De Kol of Valley Mead 4th who at 28 months produced 20.56 lbs. of

butter in 7 days and 80.865 in 30 De Kol Walker; and is also shrdla days. She is out of the great transmitting cow De Kol of Valley Mead, which is the dam of the new State Record 2-year-old Miss Valley Mead De Kol Walker; and is also a grand-daughter of Aralia De Kol with a record of 28,090 lbs. of milk in one year.

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Raising Poultry for Profit

TABLE FOWL CHARACTERISTICS.

[Written for Pacific Rural Press by Susan Swaygood, Pomona.]

An Eastern poultry journal prints a heading, "America's Premier Table Fowl." Somehow, we on this coast never take notice of any one breed, whether it be livestock or birds, until the East takes it up and wants to make a few extra dollars out of us in the far west.

The fowl mentioned in this paper, however, happens to have been with us a long time. Five years ago I saw quite a large flock of them in Los Angeles, and they have been regularly exhibited at all the shows for a longer time than that, without making any great furor. This shows that, either our tastes and ideas on table fowl are not quite like the Easterners', or that these fowl are not just suitable to our climate. They are the "Dark Cornish," and I know they are a very fine table fowl; what I don't know is the reason they do not seem to get a better hold on this coast. For according to Eastern journals the Dark Cornish are not only America's, but the world's premier table fowl. As a strictly market breed, I have no doubt that the Cornish fowl stands high in the East, but out here we seem to want a dual purpose fowl, one that lays a goodly number of marketable eggs and then with a little feeding makes a fair table fowl.

And there is something strange about this, too, because we surely like good things to eat as well as any Easterner; and this is the something I don't understand about it: why our markets make so little difference between a good quality table fowl and a very poor or indifferent one.

Look at the price of Leghorns; there has actually been as little as one and a half cent difference in the price of heavy and light hens the past few weeks. Now that Leghorns are crowding the market prices are changing; in fact, Leghorn men report that their flocks cannot have the usual culling because there is no market at all for their small hens.

Under such a changeable condition, who knows what to raise? Under these conditions who can lay claim to a premier "table" or any other kind of a fowl? If a person raises a few fowls for his own use and wants a real good table fowl, not caring much for quantity of eggs, the Cornish will fill the bill. They are a large bird, deep-chested, with lots of breast meat and little breast bone; the legs are heavy, but the meat on the drumsticks and thighs is good and plentiful too; there is even meat on the back and the wing meat is delicious, but they are not noted layers, hence can not be classed as a dual purpose fowl.

They are allowed the same weight as Orpingtons in the shows, males 10 pounds; hens 8 to 9 pounds, and these are really small for well-bred and well-fed Cornish.

Now the object of this paper is to show the farmers who happen to have a few good laying hens of medium size how they can improve the qual-

ity, and also the quantity, of palatable chicken meat.

The Cornish is a yellow-skinned and yellow legged fowl. These two features influence the eastern markets because they like yellow skinned chicken, while the markets on this coast have never made any difference in choice or price, so far as I know.

Back in England the utility men are great at crossing. They cross the Buff Orpington on the Black Minorca and claim they make a gain both in eggs and meat. The cross is usually a hen of good size, short in shank, long back and body and is usually black with brown spots or brown neck feathers; not an unsightly looking hen as some crosses are, but a neat, rather close-feathered, compact-looking business hen. The meat is white, of course, and fowl of such a cross make excellent layers and weigh a fair number of pounds of palatable meat. Moreover, the cross is much easier to fatten than the straight Minorca; the eggs run from creamy white to a little darker, and they lay well in winter or summer. In crossing two distinct breeds, it should be borne in mind that the male bird must not be too heavy for the hen. I would prefer heavy hens and light males, say a Leghorn male that was long enough for service could be crossed on Orpington hens or on Cornish for that matter. When the male from a breed laying white eggs is crossed on a breed that lays brown eggs the tendency will be towards white, but they will usually be of a creamy white.

Some of the best egg records, of late, have come from pens made up of birds so crossed. And while I favor pure breeds for myself, I know there is much to be learned yet that may help towards making better dual purpose fowl for California.

As a rule, we have smaller acreage than the Easterners, and we expect more from an acre of land that they do from several acres. That may be the reason our breeders take up with the small breeds; they can certainly crowd more of them on an acre.

Last winter I was on a poultry plant where three thousand Leghorn hens ran in one yard. There were five good poultry houses and the hens distributed themselves very evenly in the houses; when it rained in the early morning we kept the hens confined in the houses until the rain stopped. Sometimes they were kept in three days without a run, but they had plenty of litter to scratch in; plenty of food and water, and they did shell out the eggs to beat everything. I spent five months on that farm, working every day among the poultry from daylight until dark. We had no epidemics of any kind until March we got a few cases of roup, and with all those hens running together it took good management and hard work to stamp it out.

That is the greatest trouble in having such a number of fowls together: it is so hard to detect every case and segregate it before the disease has been passed on to several others.

Layers' Mash.—Is the following mash all right for Leghorns and

Rhode Island Reds—a laying mash?—E. E. V.

Bran, 200 lbs.; barley meal, 100 lbs.; middlings, 100 lbs.; alfalfa meal, 50 lbs.; bone meal, 25 lbs.; Soy bean meal, 25 lbs.; salt, 5 lbs.; beef scrap, 50 lbs.; fish meal, 50 lbs.

[Add 100 lbs. corn meal, and 5 lbs. charcoal to your list, which will make a very fair laying mash.]

VALUE OF WHOLE MILK FOR CHICKENS, PIGS, ETC.

To the Editor: What is the feeding value of whole milk (5 per cent butterfat) for feeding chickens, pigs, etc.? Can I get 16c a gallon out of my milk when fed to chickens or pigs? Prices on feeds—bran, \$30 a ton; best beef scraps, \$3.25 cwt.; grain, \$30 a ton.—L. B. R., El Cajon.

[Answered by E. C. Voorhies, University Farm, Davis, California.]

[Whole milk is not worth 16c a gallon when fed to chickens or pigs. It is impossible to get this return from feeding 5 per cent milk. The only time whole milk should be fed, is to young calves up to 4 or 5 weeks old. Experiments have shown that skim milk is nearly as valuable as whole milk for feeding calves and pigs. In fact, some of the experimental work has shown that skim milk gives better results than whole milk. When properly fed, skim milk has a value of 20 to 25c cwt. It will often replace, when fed in the right combination, 500 to 600 pounds of grain. With hogs, it is usually fed in the combination of 1 part of grain to 3 or 3½ pounds of skim milk, or if this amount is not available, it will give just as economical results when fed in a smaller quantity.]

Napa county Livestock Ass'n met Aug. 5 to hear addresses on "Marketing" by D. O. Lively, and "Diseases" by County Veterinarian Dr. Dederick.

It is expected that the premium list of the Kings County Fair will be ready for mailing by August 15. We are advised that every effort will be made to stage the biggest and best livestock show ever held there and it is expected that many show herds from the northern part of the State will be entered.



Circular containing 100 mechanical movements mailed free.

Poultry Breeders' Directory.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

RAISING FALL CHICKS PAYS—If you know how. Write for particulars and our circular and prices, for it will interest you. Barred Rocks, Rhode Island Reds, Black Minorcas, White, Brown Leghorns—any quantity. Our breeding stock is in fine condition, and our hatching and shipping facilities are the best. We quote express-paid prices on request. Roedden Poultry Ranch and Hatchery, Campbell, Cal.

BARRED PLYMOUTH ROCKS—"The kind that Win and Lay." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for catalog showing winnings at California's leading shows. Chas. H. Vadden, Box 398, Los Gatos, Cal.

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BABy CHICKS NOW READY—Hatches every week. Write for special "Fall Chick" circular. See why Fall chicks pay. R. I. Reds, Barred Rocks, Black Minorcas, White and Brown Leghorns. Campbell Poultry Ranch, Campbell, Cal.

CLOSING OUT—FOR SALE CHEAP—3 Electric Incubators, 576 egg capacity each. 16 Electric Brooders, 150 chick capacity each. Complete with circuit breakers, thermostats, connecting sockets, etc. Address T. R. Jacobs, P. O. Box 395, San Mateo, Cal.

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EASTMAN'S BRED TO LAY Barred Plymouth Rocks. Choice cockerels. Fairmead Poultry Farm, Fairmead, Cal.

SINGLE COMB Rhode Island Reds. Eggs and stock for sale. Dirk Dairy Farm, Lemoore, Cal.

WHITE WYANDOTTES—Blue-ribbon winners. Eggs \$2 to \$5. Chicks, pullets, cockerels. R. W. Strawetski, Route 2, San Jose, Cal.

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PEKIN DUCK EGGS for hatching, \$1.00 per dozen. L. D. Collins, R. F. D., 54G, Denair, Cal.

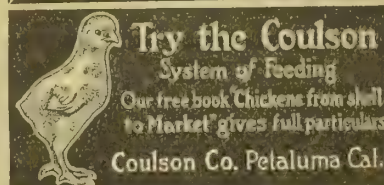
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PACIFIC RURAL PRESS, PUBLISHERS

The Home Circle Page of the Pacific Rural Press

MRS. BEST'S LETTER.

My dear Friends:

The difference between a well- and poorly-dressed woman is many times not so much a matter of clothes as it is the care of them. If in addition to accumulating a wardrobe, we could all indulge in quantities of dry cleaning, our troubles would be at an end, but most of us must be our own dry cleaner and to be able to do it well is quite an achievement.

Gasoline and Spanish bark are the two standbys for home cleaning, while French chalk and Fuller's earth are used for laces and fine articles.

In regard to the use of gasoline, remember that it is an inflammable fluid and should be used carefully. Use it always in the open air and do not take an article that even has gasoline fumes about it into a room with a fire or put it into a closet where some one may enter with a lighted match. Many serious household fires are due to carelessness in the handling of gasoline.

To clean a soiled blouse, fill a good-sized bowl with gasoline and put the article to soak, afterward rinsing it up and down. Shake well and hang out to dry and air. Do not press until entirely free from odor.

As you no doubt have found out by sad experience, gasoline will not remove all spots and many times after a garment has had a gasoline bath, it must be sponged with a cloth dampened in water.

For school garments or every-day skirts, nothing is better than Spanish bark. Spread the garment to be sponged on the table and to a bowl of warm water add a bag of Spanish bark and a teaspoon of ammonia. Sponge the garment thoroughly and after wiping dry, press well.

For light articles, such as a baby's coat, hot cornmeal is very satisfactory—cover the article well and rub into every part of the garment. Shake out and rub in a fresh supply and put away in a covered box for a day or two. When the second application of meal is shaken out, you will find the garment wonderfully freshened.

Use this same process with French chalk for laces and delicate fabrics and do not forget to put the article away for a day or two.

Spats and hats that are fawn colored should be cleaned with Fuller's earth and put away that the powder may do its work.

Clean your gloves on your hands with gasoline and cornmeal and wipe dry before taking off to air.

If you have a white straw hat that needs cleaning, if a Panama, use a paste of cornmeal and gasoline; or if a leghorn, follow this up with a peroxide bath. Feathers clean beautifully by dipping them well in clean gasoline and drying thoroughly.

If you have white furs that need freshening, dampen them well with pure alcohol and then sift in white talcum and put away to dry. When the powder is shaken out, the dirt will come with it.

When possible, do your cleaning on a bright day—the odors seem to be easier to dissipate, and they linger long enough at best.

PEACH AND PINEAPPLE JAM.

Use equal parts of both fruits and to every pound of fruit allow three-quarters of a pound of sugar. Peel and cut up the peaches, peel the pine-apple and cut into small pieces. To every two pounds of the jam mixture, use the juice of one lemon. Arrange the fruit and sugar in layers, having the sugar on top. Let stand for a while to draw the juice. Then set over the heat and let come to a boil. Then take from the stove and let stand over night. Next day, cook until as thick as desired and put in jelly glasses and cover.

And let me remind you once more of the necessity of care in using gasoline.
Rosabella Best.

FIRST AID.

At this time of the year when people go off for vacations in the high Sierras, tramping and living in small parties, everybody should know how to resuscitate a drowning person. Cramps from the cold water, hidden incumbrances of vines or roots of trees in pools often hinder even a good swimmer and one of self-possession, so that before help reaches him he is drowned. But often, even though all signs of life are absent, if the patient is worked over immediately, he may be restored to life. The correct method of resuscitation from drowning which is taught in the New York schools and many universities is called the Prone Pressure method. It is simple and should be memorized. It does not require great physical strength but a level head and consistent work.

First, the drowned individual should be held so that as much water as can, will run from the mouth and nostrils. Then he should be laid flat on his stomach, head turned to the side and a little lower than his feet. Then straddle him, a knee on either side slightly above his waist line. Then with the hands outstretched, the thumbs on each side of the backbone in the middle of his back, press down firmly and count 1-2, then lift and count 1-2. Then press for the second time 1-2. The counts should be slow—make them very slow, for in time of excitement, one tends to rush and here a hurried pressure would not accomplish the desired result.

With this alternate pressure and rest, the resuscitator is not worn out and can work for an hour if necessary, and the result which is desired, that of pressing the water from the lungs and giving a regular, slow movement to them, which will aid them to take on their normal work, will be accomplished.

BOWLS OF FLOWERS.

One of the big china stores is showing a new line of bowls for flowers. They are made very flaring and come in many colors and shades with a heavy glass frog of the same color in which to place the stems. One exceedingly pretty one was of bright blue with a bouquet of pink dahlias in it.

COOKING TEPARY BEANS.

Editor Home Circle: We have found that Tepary beans are much improved if soaked over night, before cooking. They are good cooked with tomato, onion, a little red pepper and a few slices of bacon.—Mrs. R., Oakdale.

PREVENTION OF TYPHOID.

The control of typhoid fever should be of particular interest to country people, as statistics show us that in most of the states, seventy-five per cent of the cases occur in the country and small villages.

City people are less liable to the disease because city officials pass upon the purity of both milk and water and typhoid is a disease that is only contracted through either what you eat or drink.

Every farm should have a water supply that cannot become contaminated and a sanitary disposal of waste including that from the human body.

If there should be a typhoid patient in the house, remember that the element of contagion is in the body discharges and these after being disinfected should be buried. All linen should be disinfected in a chloride of lime solution and all dishes kept apart from the ones used by the family.

When the case is over, the room and all its contents must be thoroughly disinfected and aired.

Vaccination against typhoid is recommended strongly and it is hoped it will prove to be as effective a help as that of small pox vaccination.

WOUNDS FROM RUSTY NAILS.

When a rusty nail enters the flesh, every effort should be made to keep the wound bleeding freely. This can be accomplished by striking and jarring the injured parts. After that, nothing is better than bathing in turpentine and if possible, rest the injured part in a bowl of turpentine. If the wound bleeds freely and the turpentine is applied and then the wound wrapped to protect it from dirt, there is very little danger from bad after-effects.

LAUNDRY HINTS.

Starch made a very deep blue by the use of bluing should be used for navy prints and linens.

A spoonful of ox-gall in a gallon of water will set the colors of almost any goods. Soak well before washing.

Soap, starch and salt should be rubbed into spots of mildew on cloth and then the article placed in the sun for an hour.

Sprinkle clothes with a whisk broom and warm water, or use a bottle which has been fitted with a sprinkler top.

All fine needlework should be ironed on the wrong side on a heavy piece of flannel, and should be ironed thoroughly dry.

For fruit or coffee stains, pour boiling water through the cloth. Repeat, if necessary.

REFRESHING DRINKS.

Egg Lemonade.—Put into a glass the juice of 1 lemon, 1 whole egg (or only the white), 3 tablespoonfuls sugar and fill it up almost full of water. Pour all into a fruit jar. Screw up tight and shake hard for a few seconds until it foams. The egg may be beaten separately and then added to the fruit juice, water and sugar, instead of shaking the entire mixture. Pour into a glass and serve cold.

Mint Fizzle.—Cut the rind of 1 lemon very thin, then into small strips. Squeeze juice of half a lemon in each glass, add 1 teaspoonful of sugar and stir until dissolved. Then fill halfway up with shaved ice. Pour in half ginger ale and half grape juice. Place 3 sprigs mint and a few pieces of peel in each glass. Serve with straws.

Cherry Cocktail.—Mix together 2 cupfuls of canned cherries, 2 cups spiced or canned currants and $\frac{1}{2}$ cup orange juice. Add sugar as needed. Chill and serve in small glasses garnished with sprigs of mint.

BAKED BEEKSTEAK PUD- DING.

Ingredients.—6 oz. flour, 2 eggs; not quite a pint of milk, salt to taste, $1\frac{1}{2}$ lb. steak, 1 kidney, pepper and salt.

Mode.—Cut the steak—which must be tender—into nice square pieces, and the kidney into small pieces. Make a batter of flour, eggs and milk in the above proportion, lay a little of it at the bottom of a pie dish; then put in the steak and kidney which should be well seasoned with pepper and salt, and pour over the remainder of the batter and bake for $1\frac{1}{2}$ hour in a brisk but not fierce oven.

Meat Pie Made from Left Overs.

Mince, or cut into cubes, meat of any kind—roast, broiled, or anything, season well with pepper, salt, onions, mushrooms, etc., and moisten well with rich brown sauce or gravy. Line dish with mashed potato, fill with meat mixture, cover with crust of mashed potato about $\frac{3}{4}$ inch thick and with bits of butter around the top. Bake to golden brown and serve in same dish it was baked in—with creamed celery or oyster or tomato sauce.

Mrs. A. S., Los Angeles.

PEAR SALAD.

A delicious, refreshing salad is made of pears, pared, halved and cored. Place two halves on a crisp bed of lettuce, then top with a generous dash of mayonnaise and a sprinkle of cayenne and you will have a delightful, cooling salad for a hot day. The family will enjoy it and it is an ideal warm weather salad for a company dinner.

LIGHTING FIXTURES.

If you are contemplating any changes in your lighting arrangements, do not fail to investigate the new indirect lighting fixtures. In these, the light is thrown up and reflected back and the effect is much softer and more attractive than in the old way.



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BUILDING BLOCKS.

When Bobby has the building blocks,
A battery he rears,
And then such thundering cannon shocks
And firing as one hears!
The dollies shiver in their socks
When Bobby has the building blocks.

When Barbara has the blocks, we know
A bake-shop we shall see,
With bun and biscuit, row on row;
The dollies all must be
In apron clad and kitchen frocks
When Barbara has the building blocks.

When Benny has the blocks, be sure
He'll play at engineer,
With railroad trains in miniature;
The dollies all appear
As tourists now, with bag and box
When Benny has the building blocks.

When Baby Betty has the blocks,
A bed we always spy.
Away with cannons, cups, and crocks,
And choo-choo cars—"Bye Bye."
Her darlings all to sleep she rocks
When Baby Betty has the blocks.
—Rose Mills Powers, in the Pilgrim.

VIOLET'S TOOTH.

Violet was getting ready for school with tears in her eyes and distress in her heart. The family all looked troubled too. And the cause of it was Violet's tooth,—a tiny tooth so loose that it was held in place only by a wee thread, but she could not get up the courage to have it taken out.

Papa and mamma had tried to buy the privilege of taking it out. They had offered a new doll-carriage and countless other things dear to Violet's heart, but she could not bear to even open her mouth.

So she started off for school, a forlorn little figure with her burden of of sorrow, so small to grown-up folks, but so real and heavy to little ones.

"Miss Carey will be sorry for me," thought poor Violet. "I'll tell her first, as soon as I get to school."

Now Miss Carey was the nicest kind of a teacher. Sometimes she could find a way out of troubles when even mothers had given up.

It was a very sad, tear-stained little face that Violet lifted to Miss Carey. "Oh, teacher, I've got a loose tooth," she said.

"Let me see it, dear," said she, taking Violet on her lap. "Why, Violet, it's the cutest little tooth! And you haven't even seen it! Wait just a minute, and I'll get it for you." And in an instant Miss Carey was holding it up in her fingers.

"Isn't it cunning?" went on the teacher, opening her desk. "I'll wrap it up in this silver paper, and after it teaches us a lesson this morning you shall take it home in this little round box."

How interesting it seemed! Violet felt quite grand that her tooth was so important.

After school began, Miss Carey held up the tiny tooth and told a funny story of the little white workers who live in a red prison, and how they want to get out and make room for bigger ones.

At noon Violet hurried home with her box, eager to tell how her tooth had "helped to teach school."

"Why, why were you brave enough to let Miss Carey pull it out when you didn't want me to touch it?" said mamma.

Violet looked puzzled.

"Why, she did pull it out, didn't she?" she said slowly. "I never thought of that. Miss Carey said it



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was so cunning that I wanted to see it, and she got it, and I never thought that it was really out till now. Oh, how glad I am!"—Nellie R. Carroll, in Youth's Companion.

Mother was measuring a dose of tonic for her little son, who looked up and said:

"What am I taking this for?"

"An appetite," she replied.

"An appetite!" he scornfully repeated. "I can't begin to hold now one-half I want to eat."—New York Evening Post.

Mother: "Joe, why do you suppose that old hen persists in laying in the coal-bin?" Joe: "Why, mother, I think she has seen the sign, 'Now is the time to lay in your coal.'"—Life.

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Frenchgloss Co., Oakland

San Francisco, Aug. 9, 1916.

Wheat.

The market is rather feverish, high prices at Chicago on poor crops, northern values are the highest since last year. There is not much arriving here, and with a heavy demand for both merchants and mills, local prices on all varieties have advanced sharply.

[f. o. b. San Francisco.]

Sopora wheat\$1.80 @1.82 1/2
Northern club 1.82 1/2 @1.85
Calif. club, ctl. ... 1.80 @1.82 1/2
Northern Bluestem. 1.97 1/2 @2.02 1/2
Northern Red 1.87 1/2 @1.95

Barley.

The threatened railroad strike is said to have stopped buying at some country points, where there is still a good deal left; and little shipping movement at present. Here, continued speculative buying has forced further advance in futures, which has taken spot grain up a little.

[f. o. b. San Francisco.]

Shipping, ctl.\$1.55 @1.57 1/2
Choice feed, ctl. ... 1.47 1/2 @1.52 1/2

Oats.

The feed movement is normal, but seed oats, for which there is some inquiry, are scarce and high. Blacks have been marked up, some Texas reds offered at stiff prices.

[f. o. b. San Francisco.]

Red feed\$1.65 @1.75
Red seed 1.80 @1.90
White 1.62 1/2 @1.65
Black seed 3.00 @3.25
Texas Red seed 2.10 @2.25

Corn.

The Eastern market continues on up grade, and local figures on Eastern yellow have been put up. This is reflected in a little advance in the top figure for Egyptian, first-class stock being in light supply.

[f. o. b. San Francisco.]

Eastern Yellow, ctl...\$1.97 1/2 @2.00
Milo Maize 1.55 @1.65
Egyptian 1.70 @1.80

Beans.

The advance earlier in the summer was more than the market could stand, and there has been more or less weakness since. Stocks are well cleaned up, and there are still occasional purchases, but only of a small jobbing nature, the tendency is downward. Large and small whites, pinks, bayos, blackeyes and lima beans are all lower this week, and it is doubtful if the present prices will hold, as they are still high. While it will be some time before new beans are offered, consumption has been curtailed that the supply will last through the season.

[On wharf, San Francisco.]

Bayos, per ctl.\$5.50 @5.60
Blackeyes 3.25 @3.50
Cranberry beans 5.50 @5.60
Horse beans 3.25 @3.40
Small Whites (south) ..7.00 @10.00
Large Whites 7.00 @8.00
Pinks 6.00 @6.15
Limas (south) 5.65 @5.75
Red Kidney 8.00
Mexican Reds 5.50 @5.60
Tepary beans 4.50 @4.75

Seeds.

Offers of 7c are reported for brown mustard in Lumpoc district, supplies on hand being light, with strong demand. Otherwise nothing doing in seeds, as dealers have nothing to offer for cover crops before Sept. 1, when new prices will be made. A little new alfalfa is being offered at 20 to 21c to dealers.

Hay.

While cars are short, local demands have caused heavier shipment to this market by water, bringing enough to meet all requirements. Arrivals of fancy wheat hay limited, and sell at high prices; no fancy red oat hay appearing. Alfalfa coming in freely, but well taken at range quoted. Country offerings appear to be held firmly, in some parts of the interior there is an active demand. The Government is in the market for 8,000 tons of hay for Philippines.

[Carload lots, per ton, San Francisco track.]

Wheat, No. 1\$13.00 @14.50
No. 2 10.00 @12.00
Tame oats 11.50 @15.50
Wild oats 10.50 @13.00
Barley 10.50 @13.00
Alfalfa 10.00 @14.50
Stock hay 8.50 @ 9.50
Straw, per bale35 @ .50

Feedstuffs.

Rolled barley and oats are slightly higher, in sympathy with whole grains, the market is firm in all lines, with good demand and moderate offerings.

[Wholesale prices, per ton, carload lots, San Francisco.]

Beet pulp, per ton ... Nominal
Alfalfa meal, per ton..\$16.50 @18.00
Bran, per ton 28.00 @29.00
Oil Cake Nominal
Cocoanut cake or meal 23.00 @25.00
Cracked corn 42.00 @43.00
Middlings 35.00 @38.00
Rolled barley 32.00 @33.00
Tankage 45.00
Rolled oats 34.00 @35.00

Vegetables.

The local market on garden truck shows little change since last week. Arrivals in general are quite large, preventing firmness in general range of prices, though peas have been marked on light receipts; beans also are steadily held. A few fancy lots of tomatoes sell above quotations, but there is abundance of ordinary stock. Green corn lower, with large supplies, including little that is attractive.

[Wholesale prices, San Francisco.]

Cucumbers, 50-lb. lugs ...40 @60c
String beans, lb 2 @ 4c
Limas 2 1/2 @ 3c
Summer squash, lugs50 @1.00
Cream squash \$1.00
Peppers, bell, lugs 40 @50c

Eggplant, lugs 40 @50c
Peas, lb 3 @ 4c
Tomatoes, lugs50 @1.00
Green corn, sack 1.00 @1.75
Okra, box 75c

Potatoes and Onions.

Southern potatoes no longer appearing here, but Salinas stock finds good sale at firm prices. River stock slightly easier, off-grade lots rather cheap, as there is not much outlet for them. Onions remain steady, with good supplies.

[On wharf, San Francisco]

Potatoes, ctl., Delta ...\$1.50 @1.90
No. 250 @1.00
Salinas 2.15 @2.25
Onions, yellow 1.25 @1.50
Garlic, new crop, per lb .. 4 @ 5c

Poultry.

Prices show no quotable change. Good demand, especially for large fat hens, broilers also do well; but there is an abundance of small stock coming from nearby points, with enough Eastern arrivals to prevent firmness.

[Wholesale prices, San Francisco.]

Broilers, 18 lbs. to doz. and less, lb20 @21c
do. over 18 lbs. to doz. ... 20c
Fryers20 @21c
Hens, extra, per lb, colored 19 @20c
Small leghorn 16 @18c
Smooth Young Roosters, per lb. (3 lbs. and over) ...23 @25c
Squabs, per doz 2.00 @3.50
Geese, per pair 2.25 @3.00
Ducks13 @14c
Old12 @13c
Belgian hares 7 @ 9c

Butter.

Lower grades unchanged, extras have moved up 1/2c, and appear fairly firm, being still under last year's figure. Arrivals large, but pretty well absorbed by shipping trade,

some further shipments having gone to England as well as outside markets.

"S. F. Dairy Exchange prices."

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	26 1/2	26 1/2	26	26 1/2	26 1/2	26 1/2
Prime Firsts	25 1/2	25 1/2	25 1/2	25 1/2	25 1/2	25 1/2
Firsts	25	25	25	25	25	25

Eggs.

The advance has continued steadily through the week, keeping ahead of last year's level. Arrivals heavy, but there is a large movement to Alaska, leaving the local trade lightly supplied. Pullets still plentiful, and respond slowly to rise in extras.

"S. F. Dairy Exchange prices."

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	30	31 1/2	32	32 1/2	33	33 1/2
Sel. Pullets	26 1/2	26 1/2	26 1/2	26 1/2	26 1/2	26 1/2

Cheese.

Flats have lost a little of last week's advance. Other grades show no change, supply and demand about even.

[S. F. Dairy Exchange prices.]

Y. A.'s fancy17 c
Fancy Calif. Flats, per lb. ...14 1/2 c
Monterey Cheese14 @15c
"Los. Angeles Dairy Prices."

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	26	26	26	26	26	26
Eggs	29	29	29	29	30	31

Deciduous Fruits.

The local market is fairly supplied in most lines, prices rather easy as compared with those paid on Eastern shipments; something of the firmness in outside markets reflected here. Huckleberries offered freely, with declining prices. Logan, black and raspberries in lighter supply and higher; strawberries are lower, and clean up slowly. No quotable change in apples, which continue active for shipment, notwithstanding the impossibility of shipping to many markets where good demand exists. Extreme prices recently paid for shipping pears has brought some advance in No. 1 Bartlett locally, but off-grade and ripe stock is plentiful and hard to move, even at easy prices. Peaches in lugs doing somewhat better, some fine lots of Elbertas being well received, basket stock is only steady. The best black figs find strong market at good prices, but Brunswick variety finds little favor. Plums in liberal supply, and nothing brings over \$1. Nectarines continue to move well at satisfactory prices. Cantaloupes rather a drug on the market, though low prices bring considerably more demand. Watermelons steady, with liberal movement. Grapes about as before, little increase in receipts.

[Wholesale prices, San Francisco.]

Huckleberries, lb10 @13c
Currants, chest\$3.00 @4.00
Loganberries, chest 6.00 @7.00
Blackberries, chest 2.00 @3.00
Raspberries, chest12.00 @14.00
Strawberries, chest 2.50 @4.00
Apples, Grvnstein, 4-tier 1.00 @1.15
Alexander75 @ .85
Crabapples, lug35 @ .50
Pears, Bartlett, bx, No. 1 1.60 @1.85
No. 250 @1.00
Peaches, lugs60 @.75c
Peaches, basket30 @.40c
Figs, Cal. black, box double layer 1.15 @1.35
Brunswick40 @ .60
Plums, crate75 @1.00
lugs75 @1.00
Prunes, crate85 @1.00
Nectarines, crate75 @1.00
Cantaloupes, standard crate75 @1.00
Watermelons, doz. 2.00 @4.00
Grapes, Malaga, small box .90 @1.00
Muscat, small box90 @1.00
Grapes, Thompson, crate .90 @1.00

Dried Fruits.

New prices to the trade are expected from the peach growers' association before the end of the week. Local market shows little feature, and packers say market is extremely dull, with Eastern buyers unwilling to make further provision for future needs at present range of prices. Local buyers also taking very cautious attitude, and pay little attention to country offerings unless they get bargains, which does not often happen. While growers generally

Special Deciduous Market Report.

By J. L. Nagle.

Sacramento, Cal., August 7, 1916. During the past week the demand for California deciduous fruits has far exceeded the supply, though shipments have been fairly liberal. In fact this condition has prevailed practically throughout the season.

Pears from hill districts are moving in heavy supply, but the Valley is practically cleaned up.

There are a few cars of peaches moving, mostly loaded in assortments of what few plums are left and pears.

The trade does not seem to be critical with regard to assortments and most anything in the shape of fruit, provided it passes inspection, is being bought at extremely high prices.

All auction markets ruled higher this past week than any time since the opening of the season, the high market being reached on Thursday by an assorted car of deciduous fruit from Loomis that sold in New York for \$2063.00, clings averaging \$1.90, some selling as high as \$2.25.

There is practically little or no competition in the East and the effect of Eastern shipments will not be felt for two weeks. Consequent-

ly California will have a clear field throughout the month of August.

Malagas and Thompson Seedless from the Fresno, Livingston and Atwater districts are moving and the quality of both varieties is exceptionally fine.

Tokays from Winters and Vacaville are of good color, size and quality. The heavy movement, however, will not begin for ten days. We look for an unusually good market on grapes throughout the season.

The following prices have ruled for the week:

New York.—Bartlett pears averaged \$2.97; Elberta peaches, 95c; Tuscan, 91c; Crawford cling, 95c; Duke plums, \$1.60; Gross, \$1.60; Giant, \$1.40; Hungarian, \$1.57; Wickson, \$1.46; Kelsey, \$1.55; Tokay grapes, \$3.50; Thompson Seedless, \$2.03.

Chicago.—Bartlett pears, \$2.68; Crawford peaches, 77c; Elberta, 86c; Grand Duke plums, \$1.86; Gross, \$1.71; Giant, \$1.62; Kelsey, \$1.50; Wickson, \$1.76; Hungarian, \$1.68; Thompson Seedless, \$1.83; Malagas, \$2.35.

Total shipments to Aug. 8th, 6900 cars; total shipments same date 1915, 5287 cars.

Special Livestock Market Report.

San Francisco, Aug. 9th.

Livestock markets have more life than for several weeks. If a railroad strike comes on, things will be interesting, though at least one big company counts on using river transportation for what supplies they will need above their present stocks of meat.

Hogs are dropping, due to the pressure of stubble-fed stock. This is of much better quality than the dairy-fed stock which has been coming all summer. The latter is being sidestepped wherever stubble hogs are available. One California hog raiser delivered 12 carloads to one

company this morning.

Grain-fed cattle are coming, but most receipts are grass-fed.

Sheep are arriving and en route from Oregon. One packer has received within the past two weeks and has on the train now, about 40,000 yearlings to three-year-olds.

Wool market is very quiet and concessions are necessary to effect sales. Boston mills and warehouses are stocked full up. Fall wools are being shorn in California, but there is practically no demand for this short seedy staple which will probably go lower than last year before it is moved.

are holding together well, there are some anxious to sell, and as a result top figure on apricots has again been shaded a little. Old prunes are easier. Holders are anxious to clean up before new crop comes in. Figs remain firm, with serious shortage of supplies; peaches are firm. Very little doing in new apples or pears, old stock is pretty well cleaned up. [Net to growers, f. o. b. shipping point.]

Apples, new crop	6 c
Apricots, per lb, 1916	1 1/2 @ 12 c
Figs, white, 1916	6 1/2 @ 6 3/4 c
Figs, blk, 1916	4 @ 4 1/2 c
Calimyrna, 1916	9 @ 10 c
Prunes, 4-size basis, '15	4 1/2 @ 4 3/4 c
1916	5 c
Peaches, old	5 @ 5 1/2 c
1916	6 c
Pears	6 1/2 @ 7 c
[Associated Raisin Co. prices]	
Fancy Seeded, 16 oz.	7 c
London Layers, 3-crown,	
20-lb. box, 1916	1.30
Imperial Clusters, 6-crown,	
20-lb. box, 1916	2.50
20-lb. box, 1916	1.30
cases, per lb	8 3/4 c
Sultanas, 50-lb. cases, per lb.	8 c

Citrus Fruits.

The Eastern auctions show higher prices for oranges and lemons. Shipments from California are averaging about 75 cars of oranges and 25 cars of lemons daily. The Valencia shipments are estimated to reach 13,000 cars this season, with from 4,000 to 5,000 cars yet to go.

At New York on Monday, Aug. 7, the auctions averaged \$3.30 to \$4.70 per box for valencias, and for lemons \$6.65 to \$6.80 per box. Other auction points paid about the same prices that day.

Indications point to a very heavy crop of oranges in California next season.

Prices remain firm at recent advance, corresponding to values at shipping points. The local demand in San Francisco has been light for past week, but movement is normal for this time of year.

Oranges, Valencia, fancy	
box	\$3.40 @ 3.75
choice	3.15 @ 3.35
Grapefruit, fancy	3.25 @ 3.50
choice	2.50 @ 2.75
Lemons, fancy	6.50 @ 7.00
choice	5.75 @ 6.25
standard	4.00 @ 4.50
Lemonettes	3.75 @ 4.25

Honey.

A good deal is going East from southern points, and some foreign demand reported. Sacramento valley crop is light and prospects favorable for continued firmness, supplies here lighter than usual for this time of year.

[Wholesale prices, San Francisco]	
Water white, comb	13 @ 15 c
Amber	10 @ 12 c
Water white, extracted	8 @ 9 c
Light amber, new	6 @ 7 c
Dark	3 1/2 @ 4 c

Nuts.

The almond harvest is under way at some points, but there is no great amount of business as yet, as bulk of the crop is controlled by the Exchange, which will wait until conditions are well known before naming prices. There is a strong demand.

[Prices offered by packers f. o. b. shipping point.]

Almonds, 1916:	
Nonpareils, lb.	17 1/2 c
I. X. L.	15 c
Drakes	13 c

Horses.

The local market continues very indifferent, and scattering shipments that come in move off slowly, first-class drafters attracting only slight attention. Outside markets remain strong, and buyers for U. S. and foreign armies still busy at various country points. Mules from southern California are being shipped to the Hawaiian Islands.

[Approximate values in San Francisco, based on auction sales.]

Drafters, 1700 lbs and up	\$250
Drafters, 1550 to 1650 lbs	150 @ 200
Chunks, 1350 to 1500 lbs	150 @ 175
Wagon horses, 1050 to 1350 lbs.	110 @ 150
Green mountain range	

horses, 950 to 1200 lbs.	20 @ 75
Farm workers	50 @ 100

Hops.

Harvest will begin in a few days, good crops are reported in some of the Sacramento Valley districts, though the crop as a whole is considered light. Business remains quiet, with buyers unwilling to meet prices asked by growers.

Sacramento, 1915	8 @ 9c
Mendocino, 1915	8 @ 11c
Oregon, 1915	8 @ 10 1/2 c

Groceries.

Flour mills have advanced prices 20c per bbl. this week, following advance in the north. The range on family extras is now \$6.60 to \$7. Sugar has been marked down twice in the last few days, following a drop in foreign buying in New York, and granulated basis is now \$7.55. Canned tomatoes very scarce, peas and corn strong. An advance is expected on fancy Eastern hams.

Petroleum Products.

[f. o. b. San Francisco.]	
Gasoline, Red Crown, in 100-110 gal. drums, or 50-55 gal. steel barrels, per gal.	19c
Engine distillate, similar pkgs, 9 1/2 c	
Pearl oil, similar pkgs	9 c
Zerolene, light, medium and heavy, in bbls., per gal.	40c
in cases (2-5 gal. cans)	60c
Zerolene heavy duty oil, in bbls., per gal.	50c
cases, per gal.	60c
Arctic Cup Grease, No. 0 to No. 5, 10-lb can, per lb.	9c
Zerolene transmission lubricant, "A," "BB," "BBB," No. 10, case	\$1.35

Livestock.

[Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.]

Steers, No. 1	6 3/4 @ 7 c
No. 2	6 1/2 @ 6 3/4 c
Cows and Heifers	5 3/4 @ 6 c
No. 2	4 1/2 @ 5 c
Bulls and Stags	4 @ 4 1/2 c
Calves, light	8 @ 8 1/2 c
Medium	7 @ 7 1/2 c
Heavy	6 @ 6 1/2 c
Hogs, grain-fed:	
100 to 150 lbs	7 3/4 c
150 to 250 lbs	8 1/2 c
250 to 325 lbs	8 c
Prime Wethers	7 1/2 c
Spring Lambs, f. o. b. country points	\$5.00 @ 5.50

North Portland, Ore., Aug. 7.—Receipts of all kinds of stock moderate to light. Cattle prices weakened. Best grass steers \$6.50 to \$7.10. Hogs were eagerly bought, 545 head averaging 207 pounds having sold at \$9.75. All classes were high. Sheep unchanged, offerings moderate, 119 wethers averaging 90 pounds sold at \$6.25 and 240 lambs, 81 pounds, brought \$8.25.

Wool.

[Prices paid in the country.]

Red Bluff, years	25 @ 27c
Sacramento Valley, year's	19 @ 25c
Mendocino, year's	31 @ 32c
Mendocino, 7 months'	26 @ 27c
Southern, year's	18 @ 21c
Southern, 7 months'	13 @ 16c
Imperial Valley, year's	17 @ 19c
Imperial Valley, 7 mos	14 @ 15c
Nevada	21 @ 23c
Fall wool	10 @ 12c

RANCHERS' SAN DIEGO MARKET.

At the first bi-monthly meeting of the "Ranchers' Market of San Diego County" held in San Diego Saturday, August 5, the principal feature of the program was an address by Prof. S. S. Rogers of the State University on "Growing Vegetables for Market in California," he also joining others in a general discussion of vegetable marketing in this section. Fifty members and other producers were present.

The Ranchers' Market of San Diego County is not a retail market but a co-operative, wholesale selling association that has been organized, incorporated, controlled, and offered entirely by ranchers of the county who have faith in the effectiveness of real, thorough co-operation. It handles all kinds of vegetables, deciduous and citrus fruits on the local market; and ships to brokers and other distributors in

outside markets, all produce that will bring greater returns elsewhere. All its members are now making large plantings of winter tomatoes, peppers, egg-plant, etc., and will later put in a considerable acreage of cabbage, cauliflower, celery, peas, beans, and lettuce for the winter shipping business, thus making the best possible use of a portion of their fine, frostless garden land.

The Stanislaus Livestock Show and Exposition will offer \$2000 in livestock premiums. It will also include a fashion show, baby show, poultry show and automobile show. The supervisors appropriated \$1000, the city council \$250, and Modesto business men \$1425.

Publisher's Department

The time of year is approaching when fall work in the garden will be necessary. In order that your efforts may be most productive you should have a copy of either "California Vegetables" or "California Flowers" by Prof. Wickson. See adv. in another column.

The next issue of the Rural Press will be devoted largely to the tractor, its growth and uses. Prof. Wickson will review the growth of the idea and special articles will cover the various uses now made of them.

In view of the new "Rural Credits" law just passed, the book "Federal Farm Loan System" by Herbert Myrick, received this week, will be of special interest. This book contains 240 pages of practical matter covering the new method of farm mortgage finance under national supervision. Published by the Orange Judd Co., 315 Fourth Ave., New York. Price \$1.00.

E. L. Owen of San Diego writes us that "I find much that is helpful along marketing lines in the Rural Press, and wish that every one of our members and every member of the County Farm Bureau could be induced to take it and enjoy that help."

Many Eastern farm papers have raised their subscription and advertising rates to meet the higher cost of white paper. The Rural Press will not raise its rates on that account. We do not like to use print paper and will change back to book as quickly as possible.

Classified Advertisements

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2 1/2 c per word.

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WANTED.

WANTED—ABOUT SIXTY YOUNG MEN and women to enter WESTERN NORMAL on August 28, 1916, to prepare for teaching. Western Normal graduates secure and hold good positions. We assist graduates to secure good positions and promotion. We also give a two-year high school course. For information, address WESTERN NORMAL, J. R. Humphreys, Principal, Record Bldg., Stockton, Cal.

WANTED—Superintendent to take charge of farming operations on large ranch in Oregon. Address, stating age, if married, size of family, experience, references, and salary commanded heretofore. Pacific Rural Press, Box 1.

WANTED—Reliable solicitors for country paper. Must furnish bond. 217 Underwood Building, San Francisco.

COUNTRY LANDS.

FOR SALE—140 acres hill land. 10 acres grapes, 80 prune and peach trees 9 years old; 4-room house, large barn, cement reservoir; water piped from a spring. Creek with water all the year. About 15 acres cleared. 1 1/2 miles from Calistoga, Napa county. Fine climate, beautiful place for a home. Price \$2750. No exchange. Address T. S. Burnight, Ukiah, Cal.

TO LEASE—Fine dairy property of 1800 acres in Northern San Joaquin County. 500 acres in alfalfa, plenty of feed. Will carry 250 to 300 cows. Fine opportunity for dairyman owning a herd. Address Owner, A. H. McHuron, 149 New Montgomery St., San Francisco.

STATE SCHOOL LAND MAP, \$2.50—County Sectional Map showing Government land, any county, \$2.50. Free New August Booklet. Write Joseph Clark, Experienced Record Seacher, Sacramento.

WANTED TO RENT a ranch on shares or for cash. Fruit or stock proposition preferable. Can furnish references as to ability. Address P. O. Box 31, Livingston, Cal.

HAVE 50 ACRES fine irrigated fruit land. Will make very attractive sale offer to practical orchardist with some capital. Address K. T. Romie, Soledad, Monterey country.

FOR EXCHANGE—80 acres of fine alfalfa land for Holstein dairy cows or young stuff. Sturgeon Bros., Route A, Box 61, Lemoore, Cal.

WANTED TO RENT a dairy ranch on shares. Agricultural College graduate. Box 226, Pacific Rural Press.



BARGAINS In Exposition Salvage

TIME LIMIT ON JOB'S UP. GOODS MUST BE SOLD TO MAKE ROOM.

LUMBER—ALL DIMENSIONS PLUMBING—FULL LINE. ELECTRICAL MATERIAL.

SEE OUR SPECIAL BATHROOM SET. INSIDE INN STOCK.

40 INDIRECT LAMPS 50 LOCKERS FOR GARAGE 100 LARGE STORE WINDOWS & FRAMES

Chicken Netting—Hog and Barn Wire—Corrugated Iron and Galvanized Wire Cloth—5000 Ft Wire Skylight Glass at 12c per ft Everything for the Building House, and Barn in One Car See our Block of Bargains. Satisfaction Guaranteed. Write us your wants and we will mail estimates

SYMON BROS.

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L. H. RODEBAUGH, Traffic Manager.

Oakland, California

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For Irrigation—Water Supply—Power. Sizes 2 inches to 12 feet. For pressures up to 400 feet head. Guaranteed for 100 per cent overload.

Costs less than any other pipe of equal capacity, efficiency and endurance.

Not affected by worms or insects, acid or alkaline soils, electrolysis or roots.

Withstands extremes of heat and cold, dryness and moisture.

Outlasts any pipe except cast iron, and maintains its full flow capacity to the end.

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for Water—Wine—Vinegar—Oil—Acids—Solutions. For Storage—Mixing—Fermenting—Pickling—Leaching. In all shapes and sizes—500 gals. to 500,000 gals.

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for Dairymen—Stockmen—Feeders. Sizes, 25 tons to 300 tons. **THE BEST.**

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Selected from our stock of forty million feet.

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Surface Irrigation Pipe GALVANIZED

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Best for Strength and Durability.

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LOS ANGELES.



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Cuts --- Shreds--- Grinds

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Any kind of hay, straw, vines, beet tops, sheaf grain, and grain either shelled or in the head

Six sizes from 500 pounds per hour up to 10 tons per hour

The Alfalfa Meal receiving the Gold Medal at the P. P. I. E., 1915, was ground by a Williams Mill, which had then been in operation five years.

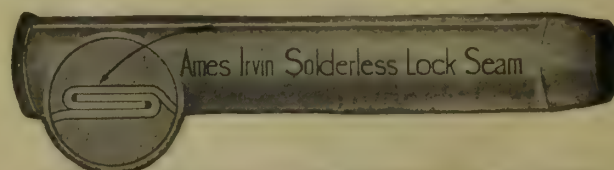
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PACIFIC SALES OFFICE

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San Francisco, Cal.



Nothing But the Sheet of Metal Itself is Used to Make

AMES-IRVIN Irrigation Pipe

Neither solder or rivets are used in its construction. Each sheet is edged, locked together and then set down under 3500 pounds pressure. Such a seam will not break or leak. It is simple, solid and strong, with no holes in the steel.

Ames-Irvin Lock-Seamed irrigation pipe was the first prize-winner against all competitors at the Sacramento State Fair in 1913 and the Fresno and San Jose County Fairs in 1912.

SEND FOR BOOKLET.

It gives full information about irrigation pipe and its construction. Get it—today.

Ames-Irvin Company

5TH AND IRVIN STREETS,

SAN FRANCISCO, CAL.

THE PACIFIC RURAL PRESS

SAN FRANCISCO

AUGUST 19, 1916.

LOS ANGELES

California's Thirst for Tractors.

Eleventh of a series of sketches in which the Editor presents suggestions, drawn from long experience, of what Californians should think and do for the advancement of California Agriculture.

IT IS not strange that California has at this day a consuming thirst for tractors. It would be strange otherwise, for the desire for something better than horse or mule power to do heavy farm work burned in the hearts of the pioneers.

In an address at the California State Fair of 1857, Henry Eno said:

ments of independence and of every species of greatness. All its diversified aspects invite industry and intelligence to lay open its boundless stores of wealth. The very act of decomposing the rock to prepare the foundation of a productive soil has distributed a precious medium of commercial intercourse throughout the surface of the highlands and the beds of the streams and exposed it to the easy access of toil as a stimulus to all sorts of enterprise. The broad and prolific valleys of the land have gone through their pastoral epoch and their deep and alluvial bottoms are inviting enlightened husbandry to unfold their exhaustless treasures. No dense forests cover the earth to retard the plowman, but an open, boundless fallow allures him to turn its surface and to plant a hundred golden hopes with every grain of golden seed. The mountains send up cedars so many fathoms high as though to remind us of the gigantic productions of the ancient ages, while the valleys give nourishment of roots, cereals and succulent vines whose yields would appear fabulous did we not see substantial evidence of their extraordinary growth and plenteousness. A million flowers announce with a million voices that the fullness of time has arrived when the human soul shall accept the silent and sweet revelations of nature.

Thus was the pioneer exhorted to match the largeness of the land with the largeness of his thought and he was amply ready to escape from memory of the littleness of Eastern farming; the stone piles, the continued whaling of tired teams; the exhausting swing of the "grain cradle" and the monotonous pounding of the flail on the barn floor—which still prevailed in that day. And then gold was the world's greatest material thing and California was illimitable greatness in plain and mountain and lay beside the greatest ocean. Surely California farming should also be great and new in the capacity of its farming appliances.

Conditions and Requirements.

—Conditions were favorable for meeting requirements. Contact with the mining industry fostered familiarity with the idea of capacity in machinery and the re-



C. L. Best Tracklayer Harvesting and Threshing 18 Feet of Grain per Swath.

moving wagons, propelled by animal power, but at railroad speed; and some other than muscular force will prepare the ground to receive the seed.

Thus early did the yearning for an overland railway, to reduce weariness and increase speed of travel, associate itself with a yearning for machinery to multiply the power of a man in doing farm work.

Why did pioneers dream so early of the grandly capable in farm machinery? Why, when horses could be had for the catching, when forage was horse-high all over the plains during the rainy season, when all fuel for steaming was scarce and high-priced, because the State had no coal and had then discovered no oil, did they yearn for steam wagons, plows, harrows and threshing machinery?

Longing for Largeness.—It was the primal impulse of the pioneer to do something which would embody the greatness of his opportunity. It mattered not what line of activity he chose, he must be active largely. Dr. C. F. Winslow, when he was invited to address the California legislature of 1854, voiced the impulse of the pioneers in these words:

Within California's bosom exist the permanent and inexhaustible ele-

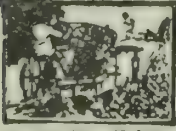


The Yuba Ball Tread Doesn't Mind Pulling Stumps as Fast as You Can Hitch onto Them. Lots Easier than Grubbing.

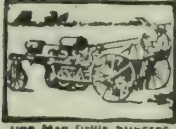
quirements of mining created foundries and machine shops in all the pioneer towns and filled them with machinists and inventors. All communities became accustomed to the recourse to machinery as a community arising purely on a farming basis could neither conceive nor have means of realizing. As mining lost its first rush, local inventors and

(Continued on page 186.)

Why This Tractor Wins At The Shows And On Thousands Of Farms!



One Man Plows 10 Acres a Day.



One Man Drills 50 Acres a Day.



One Man Mows 36 Acres a Day.

The success of the Bates Steel Mule at every important tractor demonstration held in the last two years is due to these definite facts: *It is the only real one-man machine built—every farmer can do more different jobs with it more days a year than any other tractor—it will work on any soil, wet or dry, without packing the ground and its price is low for the big service rendered.*



One Man Harrows 40 Acres a Day.



One Man Discs 35 Acres a Day.



One Man Cultivates 31 Acres a Day.

The Bates Steel Mule

FULLY COVERED BY PATENTS

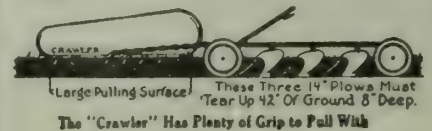
gives you big pulling P-O-W-E-R all the time regardless of soil conditions. We use a "Crawler" instead of a wheel because the ground surface varies so much that a wheel "slips"—loses traction—which means loss of power—and power at the drawbar is the thing you *must* have.

One lug on a drive wheel tractor may pull 3,000 pounds on hard ground, but a soft spot may need two lugs; a sandy spot four; a wet spot, eight. With only *one* lug pulling on hard ground a drive wheel tractor may pull 3,000 lbs.; on a sandy spot, 800 lbs.; and on a wet spot,



only 400 lbs.—giving an average pull of 1,400 instead of 3,000 lbs. average pull with as it would with a Crawler Tractor.

The Crawler has enough lugs on the ground to deliver its power under all working conditions. No matter if it needs *one* or *ten* lugs, the Crawler of the Bates Steel Mule is able to meet the emergency. The *high average pull* is what makes the Bates Steel Mule one



of the most popular light tractors made and why the friends of thousands of satisfied owners are ordering Bates Steel Mules for themselves.

DEMONSTRATIONS

California State Fair Grounds,
Sacramento, Cal.,
Week of State Fair.

September 2 to 9

Puente, California.

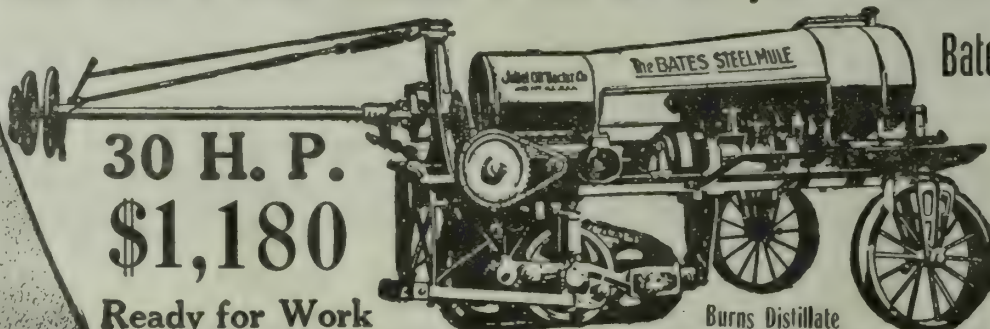
Los Angeles Traction Engine &
Implement Dealers' Assn.

DEMONSTRATION.

Sept. 19-20-21-22-23

WRITE FOR THESE

Our latest illustrated bulletins tell all about the Bates Steel Mule—what it does—how it does it—what it can do for you. Write for a set now.



Bates Steel Mule Co.

OF CALIFORNIA

320 N. San Pedro St.

LOS ANGELES,

California.



The Home of the Bates Steel Mule—The Biggest

Exclusive Light Tractor Factory in the World.

Pacific Rural Press

SAN FRANCISCO

AUGUST 19, 1916.

LOS ANGELES

Tractors at the State Fair.

[Written for Pacific Rural Press.]



PARADE of all tractors will pass the grandstand at the State Fair at 9:30 a. m., September 4. They will at once take their allotted places on the demonstration ground, and at 10 a. m. will conduct a public demonstration of plowing until 1 p. m. From 3 to 5 p. m. every day thereafter, as arranged by each manufacturer, demonstrations of hundredfold uses to which tractors may be put on the farm, will be held. Every tractor at the first demonstration will be different from the rest, and no more than two of each make are allowed.

Tractor demonstrations are becoming more and more recognized all over America as the best way for one who wants mechanical power on his farm, to compare the merits of the various types and makes of tractors. At demonstrations, as nowhere else, the largest number of types are seen doing similar work under similar conditions. The attendants are paid to answer all the fool questions or others which anyone wants to ask. The tractor that won't stand most thorough investigation should be rejected.

The multitude of uses to which a tractor may be put, including their use as stationary engines, should be demonstrated at this State Fair. We have letters showing that certain people think the tractor is for large farms only. That is

because they do not know how busy a small tractor can be kept at various jobs about the farm. If it can't be kept busy a reasonable number of days through the year, don't buy it. But first find out how many more uses it is good for than you dreamed of. You can do this more thoroughly at less expense and time at the State Fair, or other big demonstration, than by any other means. A curious example of a tractor user, overlooking an important use for his machine, has recently come to our notice. He keeps six horses through the whole year, principally to seed his grain, though

we know of tractors seeding grain with entire satisfaction. Use of the tractor for pumping, wood-sawing, silo filling, alfalfa chopping, concrete mixing, etc., saves separate engines for each of these operations and many others.

State Fair Tractor Entries.—Entries do not close until August 25, so we can give only a partial list of those who will take part in the demonstration and have entries in the Fair Exhibit.

Holt Caterpillars.—The Holt Manufacturing Company will have three Caterpillars of 75, 45, and 18 h.p., respectively, a self-propelled harvester, a regular standard harvester, a Grant combination bean and grain harvester, a light Caterpillar disk plow and two heavy ones, and a 10-foot double-disk harrow. Besides these, they will display a cut-out Caterpillar, showing all the working parts similar to the machine they had at the P. P. I. E. Various sized Caterpillars will climb a 45-degree wooden incline.

Big Bulls.—As the Big Bull factory specializes on one size only, they will have only one tractor at the Fair. The Big Bull tractor is rated 7 h.p. on the drawbar and 20 h.p. on the belt. However, at a recent test at one of the Eastern tractor demonstrations, the Big Bull is reported to have developed a drawbar pull of 14 h.p., double what is claimed by the manufacturers. This test was made with the new dynamometer scale developed by the Hyatt Roller Bearing Co., which has been used to such a great extent

at the last three or four big demonstrations in the East. The tractor on which this test was taken was pulling three 14-inch plows and was burning kerosene.

Yuba Ball Tread.—The Yuba Construction Co. will exhibit their Model 12 and Model 18 tractor at the State Fair. On September 4 they will pull the new Yuba plow in the plowing demonstration. We have a picture of the 18 pulling two 4-row Ventura bean planters with a marker attached and a harrow behind. This outfit was being used on Chew Mock's bean land near Kirkville, Sutter County. So far as we know, this is the largest number of rows of beans that have ever been planted at one time.

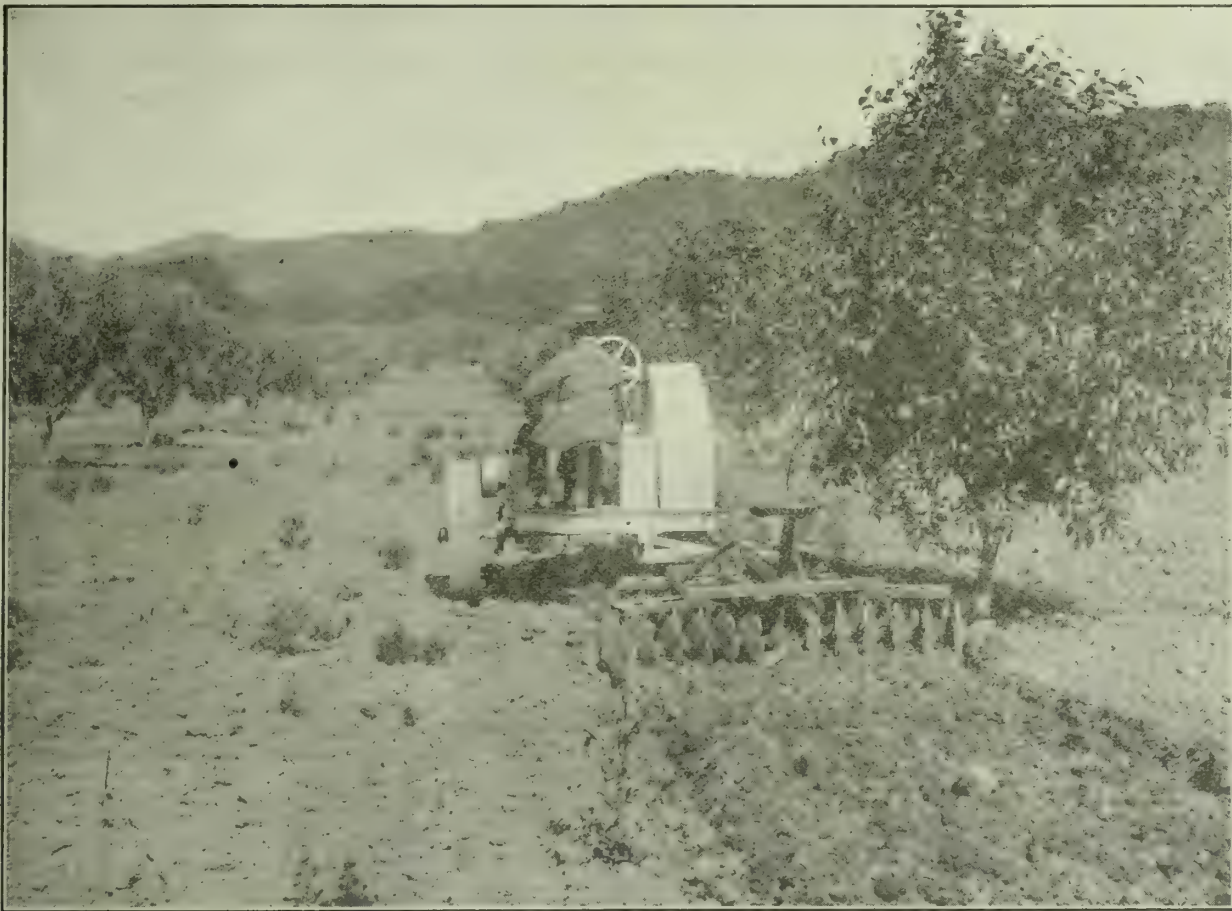
Samson Sieve Grip.—The Samson Iron Works will exhibit three tractors, a "six-twelve" size, a "ten-twenty-five" size for exhibition, or show purposes, and another "ten-twenty-five," to be used for the demonstrations. The intentions are that it will operate such implements as implement dealers are arranging to furnish for to use during the Fair week, and there will be quite a variety.

C. L. Best Tracklayers.—The C. L. Best Traction Co. will have one each of all their machines at the Fair. These include 75 and 30 h. p. models, which will be used chiefly to demonstrate plowing and harrowing at the Fair.

Sandusky Tractors.—There will be a Sandusky round-wheel tractor in the demonstration to pit itself against all comers, and prove that the

round wheel is able to do the work required. It develops 15 h.p. on the drawbar and 35 h.p. as a stationary engine.

Bates Steel Mules.—To sit on the plow and control a tractor at long range is not the common way in California, but it comes nearer the way farmers are accustomed to work. It enables one to watch the plowing without an extra man and without straining his neck. Its traction is applied on a revolving track. The engine develops 30 h.p. These "Steel Mules" are entered both in the State Fair demonstration and in the Los Angeles Traction Engine and Implement Dealers' Association



Big Bull Orchard Tractor Works Up to the Trees with Double Disks and Leaves a Fine Soil Muleh.

at Puente, from September 19 to 23, and deserve careful study.

If your neighbors have told you that repairs cost more than they expected, put it up to the representatives of his machine to explain the trouble, and ask them how to avoid it yourself. Get an idea of how the power is transmitted from motor to drive wheels in the different makes, and find out whether track types are better suited to your conditions than wheel types or not.

Come to Ask Questions.—Our readers tell us that in buying tractors, flexibility in handling, accessibility of wearing parts, economical transmission of power, and general excellence of material are among the most important features to look for. Accessories for burning cheaper oils, keeping dust out of wearing parts, etc., will also invite inspection. Come and see the "critters" at work, and bring a note book full of questions to ask the drivers. Take notes on each machine, so you won't become confused when you go back home. Look at the farm implements, built especially, for tractors, and take notes on them. Ask the agents if you can use your old plows, seeders, etc. Ask them how many days a tractor will work if carefully handled, before it must be replaced. Get prices, but remember that suitability for your conditions will be remembered long after the price is forgotten.

Desirable Tractor Qualifications.

[Written for Pacific Rural Press by R. Tomkinson.]

In the days of horse power a large part of the land that should have been in cultivation was left untouched especially when the rains stayed late because in the short time left to do the plowing the horses were unable to get over the full acreage, consequently the yield of the ranch was not as large in those days as it is now, nor were the profits. Statistics show that for his own feed the horse used 25 per cent of all the cultivated land in the United States; and on a yearly average works but three hours per day—that it costs over \$120 per year to keep him.

The development of the tractor industry has never ceased. Steadily each year the number of tractor manufacturers have increased until at present there are over a hundred different machines on the market, all the way from the little 2 h.p. that leads a cultivator between the rows, to the big 90 h.p. track-laying tractor that tears the earth up by the root or hauls a long string of ore laden trailers through the desert and over the mountain.

Should Work 75 Days.—The ideal tractor must be an all-duty machine, whether it be an 8 h.p. or a 90 h.p.—it must be a profitable investment first, because the owner should have the use of his tractor at least 75 full working days during the year as follows:

- (1) Preparing the seed bed, plowing, harrowing, disking, and rolling.
- (2) Where a small tractor is used: Drilling and cultivating.
- (3) Harvesting.

(4) Belt works: Threshing, shelling, grinding, cutting, baling, sawing.

(5) Road work: Hauling crops to market, road grading, dragging.

(6.) Miscellaneous: Clearing land, pulling stumps, moving buildings, etc.

According to reports of successful tractor operators, the time devoted to the above divisions varies greatly

it should be constructed of high grade material, thereby insuring itself against excessive upkeep cost. Where steel should be used on account of its non-breakable and long-wearing qualities, cast iron should never be substituted. Friction should be eliminated as near as possible. It should be simple in design and easy to operate. It should be of a type that will not pack the soil yet will not mire and slip in soft soil. Its power should be rated conservatively—in other words it should car-

chase price of a tractor looks high to you—remember, "there's a reason"; it must have cost more to build and be worth more to you, or its builders would not ask more for it, and don't forget that a good tractor pays for itself many times during its entire life.

The good tractor has come to stay; and steadily the chorus grows of those who repeat "If I had to go back to horses it would be impossible to do my work." When you get a tractor get a good one.



Bates Steel Mule Pulling a Plow Without Kicking. "Just Twist Her Tail and Off She Goes."

with the location, but a fair average is as follows:

Plowing, 25 days; disking, harrowing, rolling, 15 days; belt work, 10 days; road work, 10 days; miscellaneous, 10 days. Total, 75 days.

Points to Consider.—So much for the work the ideal tractor should do—now the question arises, "What qualities should it embody in order to successfully do this work and prove a profitable investment?" First,

ry considerable reserve power for conditions of emergency. The purchase price of a tractor should not be considered alone—a tractor that is made for a price is never worth any more and as a rule the cheapest is the most expensive in the long run. The correct way to arrive at the price of a tractor is to figure the total cost of the tractor during a certain number of years, considering first its performances; and if the pur-

TRACTORS ON 4,000 ACRES.

[Written for Pacific Rural Press.]

With a 65 h.p. tractor helping, about 40 mules and horses work a 4,000 acre grain and stock ranch, J. McCormack of Rio Vista says, "Provided you are using your tractor most of the time, I think \$250 per year will cover all repairs for five years." He has been using tractors five years and has two.

The High cost of Low cost

Low cost in the first place means high cost in the last place

1. The price of under-powered tractor
+ the cost of keeping horses
= the cost of a YUBA
which replaces all the horses

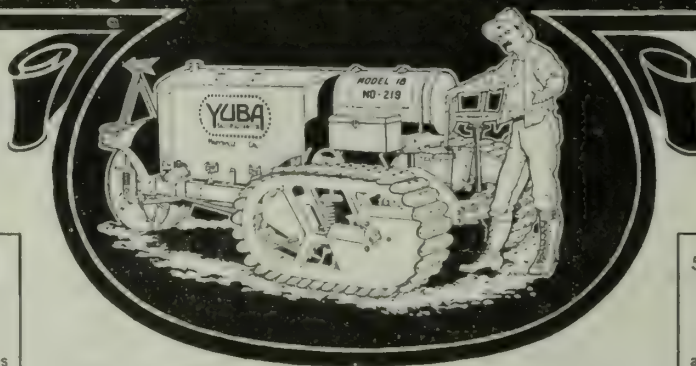
In the long run it pays to buy the high-powered tractor.

2. The price of poor traction—round wheel
+ lost time in plowing
= the cost of a YUBA

In the long run it pays to buy the tractor that does the plowing quickly

3. The price of one-purposed tractor
+ loss of opportunities
= the cost of a YUBA

In the long run it pays to buy the tractor that suits all purposes—is ready for every job.



THE YUBA
BALL TREAD TRACTOR



4. The price of tractor requiring expensive repairs
+ cost of exorbitant upkeep
= the cost of a YUBA

In the long run it pays to buy the tractor that is built to work 24 hours a day and give constant service at lowest cost.

5. Price of cheaply built tractor
+ high depreciation charges
= the cost of a YUBA

In the long run it pays to buy the tractor built by an organization of skillful engineers with an international reputation to uphold.

6. As you continue to use a tractor you will eventually pay the price of a YUBA. It is wiser to do that in the first place and save the worry due to delay, and the annoyance of continued repairs.

If you haven't a YUBA catalogue, we'll be glad to send one on request

THE YUBA CONSTRUCTION COMPANY

433 CALIFORNIA STREET
SAN FRANCISCO

THE YUBA CONSTRUCTION CO.
Department A-100

433 California Street, San Francisco, California

Gentlemen: Kindly send me a copy of your booklet, "The Yuba Ball Tread Tractor."

Name..... Fruit... Rice... Grapes...
P. O. Box..... Town..... Alfalfa... Grain... Hay...
State..... Size of Farm..... acres Hops.....

He does all kinds of work with them on a large scale. Naturally it would take a great herd of horses and mules to prepare the seed beds properly on such a large ranch and in the short time available. It might also be hard to get the ex-

tra help when needed and the animals would have to be fed the rest of the year. Fuel interest and repairs cost much less than the extra labor would without the engine, to say nothing of the expense of more animals.

Better Orchard Work in Less Time.

[Written for Pacific Rural Press
The land of golden oranges and sunshine failed to save Mrs. Errant from the greatest loss that can befall a woman; but the outdoor life of an orange grower proved a healing balm which has left her the jolly active 40-year-young mother, who finds joy in riding the orchard tractor with which her son of 21 years cares for their own and a neighboring orchard. Mrs. Errant tells the story simply.]

We came to California the fall of 1911 on account of my husband's health. The support of a family of four fell upon me and my son James. Errant, then a youth of 16 years. Because we wished an outdoor life and because we thought it would be a means of meeting the financial needs of the family, we bought our 10-acre citrus orchard, near Rialto. The following spring, with the char-

by Mrs. Derexa M. Errant, Rialto.]
tivator, and a Planet Junior cultivator frame, to which a twelve-foot plank was fitted to carry four shovels. This tool makes all the furrows in the middle at once. A small cross-reach wagon to use in and about the orchards was also secured. After two years, we are well satisfied with our experiment. Our soil is in much better condition, the trees have improved in color and vigor, the crop is better, we have reduced expenses, and we have learned some valuable lessons.

Expense of Tractor.—The tractor has been used 106 days—63 days on the 20 acres, 43 days in doing work for others. The following variety of work has been done: Plowing, disking, furrowing out, cultivating, hauling, pulling road scraper, pulling trees and moving small farm buildings. The items of expense for



Tractor, Making Four Irrigation Furrows at Once in an Orange Orchard of San Bernardino County.

eristic daring of ignorance (for we were total strangers to citrus culture), we planted a 10-acre orchard for my sister adjoining us. Fearing for these, and solving the many problems they have presented to us, have kept us busy with both mind and body. We have met the stress of freezes, floods, and lean years. In spite of it all, we have had success above the average and am "still in the ring. Fairly good for a kid and his mother," as my son expresses it! Because I have held my end of the task, I am in the picture. I just naturally belong to the "outfit."


Hired Teamwork Unsatisfactory.—For several years we hired the teamwork on the 20 acres. It used to cost \$250 a year. This spring when teams would have been needed, they were all working the roads. Although it had been hard to get good work done. Because the results proved both unsatisfactory and expensive, we decided to buy a tractor and do the work ourselves.

Tractor Improves Conditions.—In July, 1914, we bought an 8-horse tractor, and the following tools to use with it: A three-gang Oliver with 14-inch bottoms, an eight-foot Clark double cutaway disk, a foot Forkner spring-toothed cul-

operating are:
Engine distillate, \$103.19 or .973 per day
Lubricating oil, 56.40 " .532 " "
Cup grease, 2.40 " .022 " "
Repairs, 32.15 " .303 " "

Total, \$194.14 " \$1.83 " "
Adding four dollars a day for the operator's time and skill, the total cost on twenty acres for sixty-three days or two years' care is \$367.29.

Doesn't Abuse the Tractor.—My son has always driven the tractor himself. has taken great care to keep it in good working order, and has never abused it. Before the heavy work of the coming spring begins, with the help of an expert mechanic he will overhaul it and put it in order for another hundred or so days' work. He estimates, from what he knows of the condition of the machine, that this can be done for about \$75. This item of cost for depreciation will be charged to the account of the next hundred days. For custom work the charge is sixteen dollars for an eight-hour day—\$688 has been earned in this way. This amount could have been doubled, could the time have been spared from our own work. If the demand for work had been sufficient to justify employing another operator, we have the equipment to do all the heavy work on 150 acres if properly organized.



-All Steel-

DECIDES THE TRACTOR QUESTION

When you invest in a Tractor you want it to work when you need it, and do the work at the least cost for upkeep, don't you?

That is just what the Tracklayer will do, because by the using of steel instead of iron, breakage and wear is reduced to an absolute minimum.

Everywhere practicable, the Tracklayer is made of high grade steel. We operate the Best Steel Plant, which makes it possible for us to use more steel in the construction of our Tracklayers than is used in building any other tractor.

Until Mr. Best invented the "Rocker Joint," the weak spot in this type of tractor was the track joints, because they could not be successfully oiled. The C. L. Best Track does not give way to excessive wear and abrasion, because in the Rocker Joint the pins merely rock from one flat surface to another as the links of the track bend; therefore the twisting and grind so noticeable in the spool and pin design is absolutely eliminated and the life of the track is greatly prolonged as well as additional power transmitted to the drawbar. With the "C. L. B. Oscillating Tracks" one track can go down in a rut and the other track be up on a hummock without disturbing the equilibrium of the frame. This reduces the strain due to the rigid track construction, and being spring mounted, eliminates jars in going over rough ground.

All Tracklayers are driven by steel cut gears, and the gear drive employed in the Tracklayer simplifies the transmission, reduces the number of wearing parts and last longer.

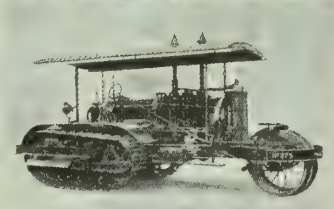
The Tracklayer is simple in design, low and compact, easy to operate and will work on ground where a round wheel tractor would mire or slip. It can be used the year around for every purpose, and is especially adaptable for plowing when the ground is soft—its traction surface is so great that it cannot pack the soil.

We have just the size Tracklayer for your needs, so fill out the attached coupon and mail it today. Our folder will give you further information.

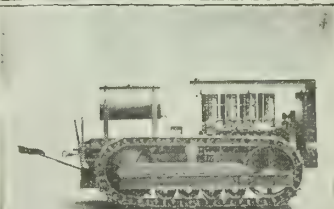
C. L. BEST GAS TRACTION CO.
105th Avenue OAKLAND, CAL.

See our Demonstration at the California State Fair—Sacramento, September 2nd to 9th.


We also manufacture 45 H. P., 90 H. P., Tracklayers and 75 H. P. Round Wheel Tractors.




75 H. P. TRACKLAYER
Pulls 12 12-inch plows—12 inches deep. The Ideal Tractor for the large ranch or contractor. Does the work of 40 horses.



30 H. P. TRACKLAYER
Pulls 6 12-inch plows—10 inches deep—suitable for orchard work—gets close to the trees and turns in its own length—does the work of 16 horses.



16 H. P. "PONY" TRACKLAYER
Pulls 3 12-inch plows—10 inches deep. Just the size for the small orchard or vineyard—the most flexible and compact Tractor made—does the work of 8 horses.



C. L. Best Gas Traction Co.
104th Ave., Oakland, Cal.

Am interested in a.....
H. P. Tracklayer.
Kindly send me your folder G.

Name.....
Address.....

Co-operative Use of Tractor.—Our experience with the tractor has added strength to our conviction that the citrus grower can find no more certain way of increasing his profits than by co-operating with his

neighbors to make the necessary investment. They should not be deprived of the economy and efficiency of the tractor, when co-operation with others would give it to them. There is no item in the cost of production



Sandusky Tractor in San Fernando Valley, Equipped with Special Beet Wheel for Digging Two Rows of Sugar Beets at Once.

neighbors to reduce the cost of production. Alone, on 20 acres, we have done better work, in less time, for less money. On a larger acreage, sharing the cost of equipment and operating with other growers, the results would have been still better.

Many small growers appreciate the value of a tractor, but are unable

which could not be reduced in the same manner, if the growers would unite to make the best of their opportunities.

There are indications which tend to show that it is only a matter of time when, to save themselves, they will be forced to think seriously in this direction.

FOREST RANGE PRICES.

To the Editor: Please tell me the price the Government charges for range and also if there is a different price for stock, horses, and mules. Also how long the range is open.—E. B. B., Orosi.

[Answered by T. D. Woodbury, U. S. Forest Service.]

[The charges on the forests in your vicinity are 72c for cattle, 90c for horses and mules, 43c for hogs and 18c for sheep for the year-long season, which begins March 1. Shorter seasons are charged for on the basis of one-ninth the year-long rate, per month, for periods less than four months beginning between July 15 and Oct. 15; and one-tenth the year-long rate, per month, for periods of four months and over beginning between Oct. 16 and July 14. The minimum charge per head is 20 cents for cattle, 25 cents for horses, 12 cents for swine, and 5 cents for sheep and goats. There is an extra charge of 2 cents per head for sheep and goats which lamb or kid on the range. Applications for range must be sent to the Forest Supervisor six months in advance of the opening of the grazing season. The headquarters of the Sequoia National Forest are located at Hot Springs, Cal.]

POISONING FIELD RATS.

To the Editor: Field rats are overrunning our delta ranch and eating the corn we plant. Have been unable to poison them.—J. C., San Francisco.

[Answered by Surgeon C. C. Pierce of U. S. Health Service.]

[Cage traps baited with fish heads or bacon scraps would likely be successful. We have found the following poison very effective, and it kept fresh so well that dead rats were found three or four weeks after the poison was placed.

Melt 4 lbs. cheese with 6 oz. glycerine and 2 qts. water; then add 10 lbs. cornmeal and a gallon of water. Continue to heat until cornmeal is thoroughly cooked. Then

stir in 4 lbs. finely powdered white arsenic; and if convenient add enough black aniline to color to a slate gray so that chickens and other animals and children will not notice it. Then add ½ oz. oil of anise. More or less water may be required, as the meal must be pasty. The poison must be finely powdered so there will be no grit in the paste. The aniline may be omitted if hard to get. None of the ingredients should be handled with bare hands as the human odor might make the rats suspicious.

The paste was kept in tin fruit cans, each containing 4 lbs. Each man placed a can per day in 800 to 1000 holes or runs, with a small mixing spoon similar to a cheese scoop. A piece about the size of a hazel nut was placed in each hole or rat run in such a way as to conceal it from any person or other animal.

OLD AND NEW BARLEY.

To the Editor: Have paid the higher price for old barley to sprout for my chickens. It failed to sprout satisfactorily during the recent hot spell. The sacks are stencilled "Re-cleaned barley" and it looks fine in the grain, but I suspect it is new barley. How can I tell the difference, and is there any recourse under the law or any official inspection?—A. F., Hayward.

[Aside from the slower sprouting of new barley, this season's crop can be distinguished from that of last year in a general way because this season's barley is plump and bright as a rule while the other is more or less weazened and weather-stained on account of the rains and winds of last year.

There is no law to prevent a man from substituting new barley for old, but after July 1 he is not likely to, as the old barley is less desirable on account of risk of weevil infestation and the extra cost of inspection. There is an unwritten law among grain dealers that after July 1 all old grain sold shall be so specified.]

SAMSON

\$725⁰⁰
SAMSON
SIEVE-GRIP
TRACTORS

\$1250⁰⁰
SIEVE-GRIP
WHEELS
(PATENTED)

are in use all over the world. Their name should be in the mind of every farmer.

cultivate and invigorate the soil. Perservant of moisture. Turn clods to dust and do not pack nor slip.

TWO SMALL PACKAGES FOR A LARGE MAN
BUT
GOOD ARTICLES COME IN SMALL PACKAGES
SAMSON SIEVE-GRIP TRACTOR CO.
STOCKTON, CALIFORNIA, U. S. A. P.R.-13



One of the many styles and sizes of Fruit Trucks I manufacture. Sixteen years of experience has taught me how to make trucks that will stand the hard knocks and that will last. For prices and particulars, address

BROEDEL ORCHARD TRUCK CO., 552-556 South First St., San Jose, Cal.

BEAN THRESHERS THE TWO STANDARDS

Built Especially for California Conditions

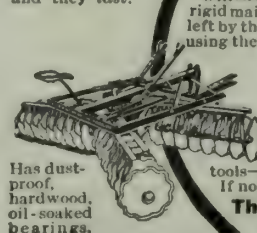
Past the Experimental Stage
Eleven different models, with or without Engine, mounted complete
Ranging in Price from \$210 to \$1,000
All Repair Parts Carried

THE FARQUHAR VIBRATOR SEPARATOR
Guaranteed by "The House of ARNOTT"
Ask The Grower Who Owns One
Write for Folder, Specifications, Prices Etc.

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THE AMERICAN

Those disks are of cutlery steel forged sharp. They cut deep and they last.



Short Seasons

—never mind them. Start your tillage later, too, and avoid early frozes. Select a tractor harrow that will save going over twice. Get a Double-Action whose rigid main frame forces the rear disks to cut all the land left by the fore disks. You save power, time and labor by using the genuine

Cutaway (CLARK)
Double-Action
Engine Disk Harrow

It's the machine of perfect balance and dependability. There are over 100 styles and sizes of CUTAWAY (CLARK) tools—several for your very needs.

If not at your dealer's, write us.

The Cutaway Harrow Co.
766 Main Street Higganum, Conn.

Send for our splendid new book, "The So and Its Tillage Free."



Buying Tractor for Grain Ranch.

[Written for Pacific Rural Press]

In buying a tractor, the first thing to investigate is the motor and accessories; next, the clutch and transmission; next, method of driving from transmission to wheels or track; next, lasting qualities of

were made in Mr. Gibson's own shop, which has been described in these columns.

Sowing Grain.—He uses six horses to sow the seed. This must seem like slow work, for he reports:



Waterloo Boy Tractor Providing a Dust Mulch in an Orange County Orchard.

rack and drive; next, frame to carry the above in good shape. For all-around use, get a sliding gear and rabbit bearings are the best.

These are the recommendations of G. W. Gibson of the J. S. Gibson Co., Williams. He has been using one tractor six years on a 500-acre dairy and grain ranch.

When he bought the machine, it had a 45 h.p. motor; but this proved too small for Mr. Gibson's ambitions, so he took out the engine and mounted it on a I-beam frame to run a big centrifugal pump to irrigate alfalfa, etc. An 80-horse-power engine was put into the tractor, and despite the tremendous power, the leakage has been less than was expected. An average of \$200 a year has paid all repairs. Part of these

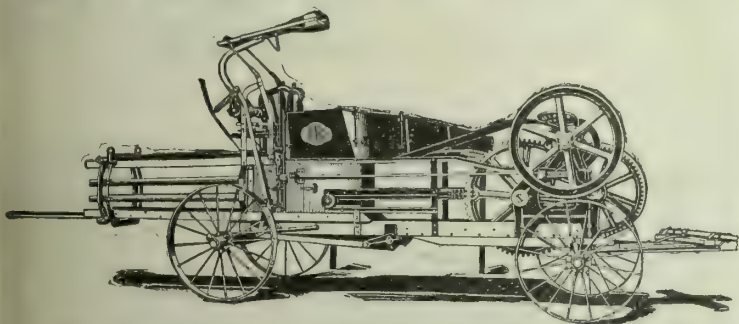
"Dragging 60 feet of heavy iron harrows, no work at all. Engine giving excellent satisfaction."

The Ramina Ranch of Tehachapi goes him one better on seeding. Their 75 h.p. Caterpillar pulls three grain drills and harrows over 75 acres in ten hours; and goes on working all night to plow half that much ahead. Thus they need not work their horses on the soft land, nor is it necessary before planting time to plow more than half of what is to be seeded.

T. B. Wohlfrom of Arbuckle reports pulling 42 feet of Gorham seeders with his tractor over very rough summer fallow, work that would require 30 good mules.

Keep connecting rod bolts tight.

Baled Hay at Lowest Cost



THE price of hay, and the profit in it for the grower, depends upon the condition in which the hay is marketed. Hay of the same quality, in tight, smooth bales, brings a higher price than when shipped in loose, ragged bales.

International Hay Presses, with their powerful toggle-joint plungers, produce tight, solid bales. The roller tucker makes the bales smooth. The bale chamber tension produces bales of uniform size. The presses work fast, the different sizes and styles baling from 6 to 35 tons per day.

The line consists of one and two-horse presses, motor presses, belted jack presses and fast power presses. The one-horse press is made in 14 x 18 size only—all others in 14 x 18, 16 x 18, and 17 x 22 sizes, the accepted standard. The capacities vary from a small horse power press for the man who wishes to bale a little hay, to the largest, fastest custom power presses ever required.

An attractive mailing folder, in colors, shows **International Hay Presses** as they are, and gives complete specifications. Write for it.

International Harvester Company of America
(INCORPORATED)

Crawford, Neb. Denver, Col. Helena, Mont. Portland, Ore.
San Francisco, Cal. Spokane, Wash. Salt Lake City, Utah

SEE

THE SANDUSKY TRACTOR

"THE LITTLE FELLOW WITH THE BIG PULL"

15 Draw Bar H. P.—35 Belt H. P.

when they put him through the paces at the **BIG TRACTOR SHOW** from September 2 to 9, at the State Fair Grounds, Sacramento, California.

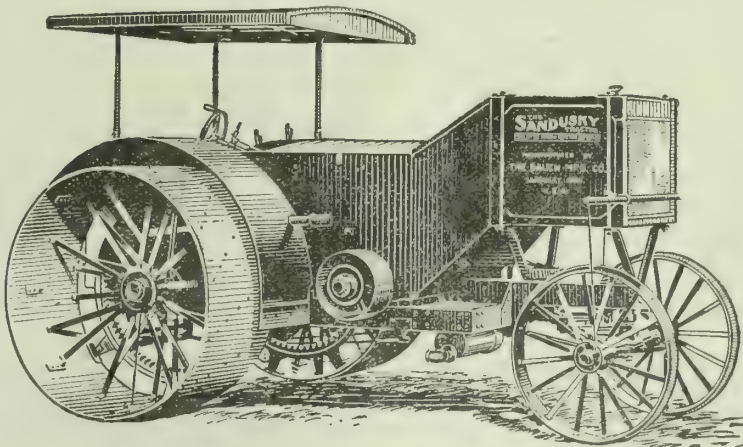
This sturdy little machine does the work of 5 good teams and men. It is compact, solid, substantial, simple, efficient.

Watch closely the work of **THE SANDUSKY**. Compare the work of this modern money-making machine with the old methods. Think what a great profit-producer it would be on your farm.

Don't forget the dates and keep your eye on **THE SANDUSKY**. **THE SANDUSKY** will also be in the **BIG** meet at Puente, Cal., Sept. 19 to 23.

The DAUCH MANUFACTURING CO.

126 N. Los Angeles St.,
Los Angeles, Cal.



Cleaner spark plugs

Your spark plugs will keep cleaner if you use a straight-distilled, refinery gasoline. A mixed or imperfectly refined gasoline breaks up and deposits carbon instead of exploding completely.

Red Crown

the Gasoline of Quality

is the all-refinery gasoline—not a mixture.
DEALERS EVERYWHERE AND AT OUR
SERVICE STATIONS
STANDARD OIL COMPANY
(California)



Studebaker

HAS BEEN CONTINUOUSLY MAKING
WAGONS—BUGGIES—HARNESS
FOR EVERY FARM USE SINCE 1852

SEE THE STUDEBAKER DEALER

Power Gopher Drainage.

[Written for Pacific Rural Press.]

The Santa Ana Sugar Company has been working about four weeks with the latest method of drainage, on its Sugar Company, and the other two belong to I. M. Von Schriltz. This method of drainage has been

ifornia about two years ago by the American Sugar Company at Arlington, Chino, and on the Patterson Ranch at Oxnard. It has proved successful in draining the ground more perfectly and quickly than the system of open ditches.



Three Holt Caterpillars Pull the Mole Plow, Making an Eight-Inch Drain Four Feet under the Surface.

800-acre tract south of Santa Ana, on the McFadden pasture. The eight-inch subterranean bores are being made four feet under the surface.

Three large tractors and a Gopher Plow made by the Killefer Mfg. Co. of Los Angeles are used in the new system. The plow is a single beam affair with a point similar to a subsoiler, on the head of which is a steel torpedo, or gopher, eight inches in diameter. This is pulled through the ground at a depth of about four feet, forming a perfect eight-inch drain. The drains are thirty feet apart, all leading to the main ditches, which have been made with dredgers.

The drains last two to sixteen years, depending on the character of the ground. The Gopher Plow makes a smooth-faced closed bore. The beam is narrow and cuts through the ground like a blade.

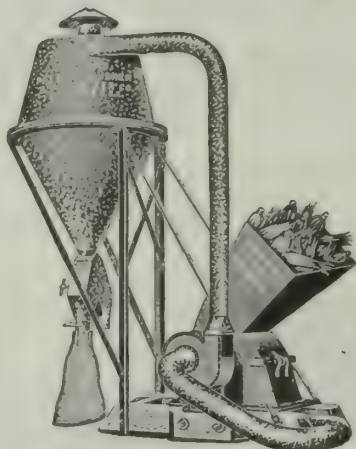
Tractors, one 75-horse-power and two 60-horse-power, handle the drain maker with ease. One machine is owned by the Santa Ana



Bore Made by Gopher Plow in Hard Earth.

in vogue in the East for many years and was introduced in Southern Cal-

WILLIAMS FEED GRINDER



Cuts --- Shreds --- Grinds
Separately or in Combination

Any kind of hay, straw, vines, beet tops, sheaf grain, and grain either shelled or in the head

Six sizes from 500 pounds per hour up to 10 tons per hour

The Alfalfa Meal receiving the Gold Medal at the P. P. I. E., 1915, was ground by a Williams' Mill, which had then been in operation five years.

Write for Bulletin No. 752

Williams Patent Crusher & Pulverizer Co.

PACIFIC SALES OFFICE

268 Market Street,

San Francisco, Cal.

Notice to Irrigators

California-Nevada-Washington-Oregon

Beginning September 1, 1916, the undersigned is ready to make shipments from its warehouse in Stockton, California, as well as from Denver. This new arrangement will save you time and freight. A convenience for you Pacific Coast farmers who are facing irrigation or drainage ditch problems.

For making and cleaning laterals and ditches no machine is superior to the **Martin** farm ditcher—and there is no equal at the price. Works right or left-handed, in new or old ditches, large or small, in sandy or rocky ground, in gumbo or heavy clay, on hillside or the level, ordinarily with a single team. Cutting blade of crucible steel.

The **Martin** is mechanically simple. No wheels, gears or pinions to wear out and need early replacing. All steel. If you have not received our fully descriptive catalog, ask for it TO-DAY. The **Martin** "costs less than a cow" and on an 80-acre irrigated farm will save the price of three cows in a single season. Write RIGHT NOW.

Owensboro Ditcher & Grader Co.

Western Branch

231 Evans Block

Denver, Colorado



Address All Correspondence to Denver

Thousands of Feet, New and Second - Hand WATER PIPE

Positively lowest prices—all sizes. Finest water pipe, well and water casing, riveted and irrigation pipe, wrought iron fence posts, etc. Big stock. Prompt shipments anywhere. Write, phone or wire for quotations.

Adams Pipe Works

Under entirely new management.

2025-39 Bay St., Los Angeles.
Broadway 1264—F1917.

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AGRICULTURAL ENGINEERS

Agricultural Investigation, Drainage, Canal Engineering and Water Right Reports, Alkali and Marsh Land Reclamation, Appraisal of Irrigation systems, Management and Development of Lands, Ranches and Irrigation Projects. Soil Surveys.

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Analyses of Soils for Plant Food Values and Alkalies, Agricultural and Industrial Products, Water, Insecticides, Fruits, Etc.

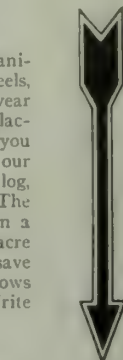
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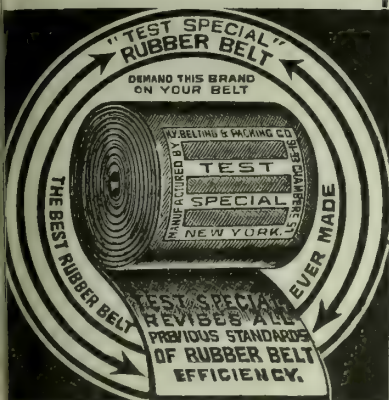
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1200 YDS.
OF 2-FOOT DITCH
IN ONE DAY
Martin
"ONE SAFE BET"

Belting

**That Must
Make Good**



When you buy a rubber belt you should know what service it will give you or have the belt service guaranteed by a responsible firm who will make good in case the belt falls down. Every belt-buyer should know how to judge a rubber belt, and we would like to send you a free sample of Test Special together with our folder that will tell you just how to judge a rubber belt so that you may know just what service you will get from any belt you buy.

Fill out the coupon and mail it to us and we will recommend a belt that we will unqualifiedly guarantee to do your work satisfactorily. We have had seventy years' manufacturing and selling experience.

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New York Belting & Packing Co.,
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Send me samples of Belting that you will guarantee to give satisfactory service on my work and quote prices delivered at

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Centers of Pulleys _____

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of Driving Pulley _____

Kind of Wash- _____

ery Driven _____

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Name _____

Address _____

A pocket memo booklet giving speed and power tables will be sent FREE to all who mail this coupon.

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Water Troughs,
Windmills, Frames,
and Towers,
Steel and Wood.

Prices the lowest.
BROWN & DYSON
640 So. Center St.,
STOCKTON, CAL.

SQUASH FOR SHOATS.

To the Editor: We have planted between rows of a young apricot orchard, about 4 acres of so-called "bug-proof" squash. It is our intention to purchase a couple of shoats. Can this squash when ripe be used as hog feed, and how much should be fed and with what other feeds, to produce proper weight?—R. R., Cupertino.

[According to the dictionary a "shoat" is "a young hog" and a "shote" is "a half-grown hog." If you had used the latter spelling it might seem easier to answer your question, for if the hog is half grown, and therefore may be held to have good size and frame, squash will serve him better than if he has that growth still to make. For the little pig, squash is poor feed: it does not contain the protein he needs to make growth. This he could get from alfalfa or skim milk, or from tankage, millstuffs, oil meals, etc., (to be used carefully in connection with a little grain) and if he has what he needs of these he can fill up with squash. Squash pie would be good for a growing pig: because it has to have lots of milk and eggs in it, not because it is squash. For a half-grown hog, whose business it is to make weight, squash is better and will whet his appetite for grain and other solid foods, which are necessary to make good pork, and will help to keep him cheerful and contented. You can give the pigs all the squash they will eat in connection with other feeds such as suggested. For the understanding of this matter in detail you should have Woll's "Productive Feeding of Farm Animals" and Guilford's "California Hog Book."—Eds.]

GOVERNMENT BUYS SHEEP.

To the Editor: In reference to the list of Proposals for Government Supplies, to which you called our attention, published in U. S. Daily Report No. 181, dated Washington, D. C., Thursday, Aug. 3, 1916, and received here yesterday, the following would interest many California breeders but is too late:

Live stock, No. 3481—Sealed proposals will be received at the Office of Indian Affairs, Washington, D. C., until August 25, 1916, for furnishing and delivering 100 rams for the Leupp Agency, Leupp, Ariz.; 130 rams for the Mescalero Agency, Mescalero, N. Mex.; 60 rams for the Moqui Agency, Keams Canyon, Ariz.; and 250 rams for the San Juan Agency, Shiprock, N. Mex. Specifications will be furnished on application to the Washington office.

We are unable to find a copy of these specifications in San Francisco. As Pacific Coast breeders must make application to Washington, these specifications would be received on the Pacific Coast about Aug. 21, which would not allow sufficient time to return the "proposal" to Washington by Aug. 25.

In the interest of the livestock breeders located in the Pacific Coast States we suggest that such livestock breeders request the departments at Washington to provide for the distribution of similar specifications from stated government offices located in the principal coast cities. Eugene R. Croley, Mgr.

San Francisco Livestock Export Co.

Are you planning to handle grain in bulk next season?

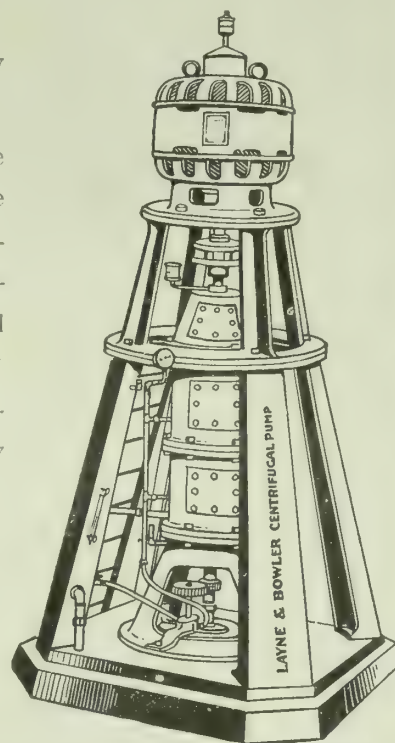
LAYNE & BOWLER

HIGH DUTY PUMP

Here is illustrated the Layne & Bowler direct connected, oil-balanced turbine pump, for high duty, deep well service. It is used for lifts greater than 200 feet. This is beyond all question the most compactly designed high duty pump ever constructed.

Our special oil-balance feature, we believe, is the greatest single improvement made since the advent of the centrifugal pump, and it has made it possible to use the centrifugal pump for all heavy duty requirements.

Our new Catalog No. 25 fully describes and illustrates this pump as well as many other styles. Write at once for a copy.

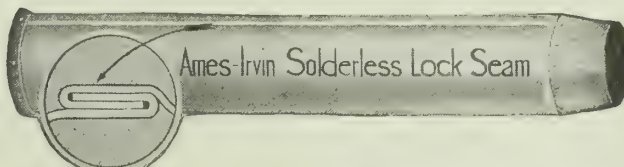


LAYNE & BOWLER CORPORATION

900 Santa Fe Avenue,

Los Angeles.

"THE WORLD'S LARGEST WATER DEVELOPERS."



Nothing But the Sheet of Metal Itself is Used to Make

AMES-IRVIN Irrigation Pipe

Neither solder or rivets are used in its construction. Each sheet is edged, locked together and then set down under 3500 pounds pressure. Such a seam will not break or leak. It is simple, solid and strong, with no holes in the steel.

Ames-Irvin Lock-Seamed irrigation pipe was the first prize-winner against all competitors at the Sacramento State Fair in 1913 and the Fresno and San Jose County Fairs in 1912.

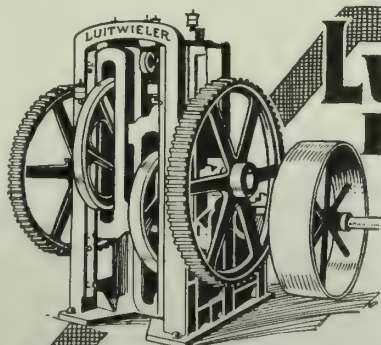
SEND FOR BOOKLET.

It gives full information about irrigation pipe and its construction. Get it—today.

Ames-Irvin Company

8TH AND IRVIN STREETS,

SAN FRANCISCO, CAL.



LUITWIELER PUMP

Automobile manufacturers long ago discarded the one-cylinder motor, because the power delivery was too irregular; it jerked and jarred, soon ruining the motor and consuming an enormous amount of fuel. They reached this mechanical truth; that the steadier and more even the power delivery, the greater power created and the less fuel consumed. This basic truth also applies to pumps. The Luitwieler

(non-pulsating) pump has absolutely the highest efficiency and delivers the stream of water as steady and even, comparatively, as a 12-cylinder motor delivers power. This pump consumes absolutely the least power. You should write at once for our free irrigation booklets.

LUITWIELER PUMPING ENGINE CO.,

711-13 North Main St., Los Angeles, Cal.

San Francisco Agents:

Simonds Machinery Co.,

117 New Montgomery St.

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J. C. LOOMIS - Assistant Editor

EDITORIALS

LISTEN to the long, rolling laugh of the California farmer, as it fills the vales the hills among: "Hah!"

Why laughs he so long and loud? Let this announcement answer:

That the money made by the fruit and vegetable farmers of California during the season ending September 1, 1916, will break all previous records for the State, is announced by the Home Industry League of California, which predicts an unusually successful "fall trade" for merchants generally as a consequence.

The shipments of carload lots of fruit and vegetables out of the State, up to August, were so much greater than in 1915 and brought so much higher prices that the farmers of California will net a profit this year of more than 60 per cent over that of 1915. If the box-makers can find a way, before the fruit season ends, to turn out many more boxes than they are doing now, the money earnings of California farmers for 1916 will be nearly double the total for the year before.

But why laughs the California farmer with a single "Hah!"? Because he knows that the above statement is not true in the breadth of the application that will be made of it, and because he knows also that such exaggerations of his prosperity always tend to decrease rather than increase his real income for the future. Such over-estimates of farming values are only useful to tax-eaters and land gamblers, both of whom ply their trades for the reduction of the farmers' net income. To say that California farmers' incomes increase 100 per cent in a year is not only a tremendous falsehood, but it is most deadly in destructiveness to the moderate increase which he is actually realizing this year. Such false reports make it exceedingly hard for the farmer to get what he really deserves, either in money or in public consideration; therefore, when such jubilant declarations come to his eye or ear, he laughs with but a single "Hah!"

TWO EVILS POSSIBLY ESCAPED.

AND yet the California farmers are cheered and encouraged by the moderate increases in prosperity, which they, as a class, are receiving this year. Even those individuals whose year's incomes are reduced by untoward conditions are helped to endure by the greater future hope. Therefore, all are reasonably glad that there is some increased goodness in the passing year for the business in which they are all engaged. They are probably glad also over what seems, as we write, a fortunate escape from losses which might have been severe. An August rain, which dropped a quarter of an inch in San Francisco and immediate vicinity fortunately did not extend into parts of the State where drying fruits and other products lie exposed, in full trust in a dry sky during a month which is, of all months, most trustworthy. It might so easily have been otherwise. Let it be noted as an instance in which the farmers' luck was not adverse.

Another narrow escape seems to lie in the report, on Tuesday, that the great menace of a transportation embargo will be averted. It is hard to estimate what loss would accrue to California

producers if a tie-up of railways should be realized at this season of the year. Every previous misfortune of that kind has worked havoc with our perishable products and influenced producers' returns adversely, far beyond the period of actually blockaded movement. It would have been particularly disastrous this year and farmers' luck may have another credit entry. And yet, what satisfaction can there be if such a menace always threatens? Manifestly a threat to arrest people and food products in freedom of movement in living and giving life should be made impossible in any country claiming to be civilized.

AN INDUSTRIAL DEAD-CENTER.

WE ARE not losing our old admiration for the rulership of industry or enterprise by the creator thereof. It still seems to us fitting and just that the man who plans a commendable business should be free to buy what he thinks best to equip that business and to hire whom he desires for its operation, at such wages as he and they shall agree, and to sell the products of it for such price as he can persuade purchasers to pay. We cling to the old idea that if a man can not do this he becomes no longer free to exercise his powers and use his means in the operation of his business for present reward, and in its upbuilding for future profit to himself and to those who succeed him in ownership. But while admiration for this old ideal of the rights and privileges of a man still hold fast in our thought of what is fair and just to him as a masterful man, and while we feel sympathy for the attitude of such a man when he declares that if he cannot run his own business as he thinks best, without injury to others, he will abandon it, we are still oppressed by the strong conviction that the old ideals of creators' and managers' rights, privileges and opportunities are becoming impossible. All kinds of regulation in the alleged public welfare are coming in, and a man's rights as producer or operator are being either wholly denied or sharply curtailed, and he is being effectively told that certain things he cannot make, certain things he cannot buy nor sell, certain labor he cannot hire at all, and certain other labor he must hire at wages which he thinks his business cannot afford. We are not arguing that such regulation, in alleged public welfare, is justified or otherwise; we are simply citing facts which have to be reckoned with as parts of the present industrial situation. As between the old ideal of a man's proper mastery of his own enterprise, the modern ideal of the public's right to regulate and the modern ideal of organized labor's right to prescribe and prevent all industrial issues seem to us to be fast rushing to a "stale-mate"—that unfortunate condition in chess-playing which ends progress without attainment.

WHICH IS THE WAY OUT?

IT SEEMS to us pretty clear that there is no hope for settlement satisfactory to anyone by continued conflict. Labor, exercising its right to organization, is not only insisting on wages (which may or may not be just, but it is undertaking to dictate who may and may not be hired, which surely seems to be beyond its right, both with respect to those who wish to hire and those who wish to work. On the other hand, employers organize and refuse wages (in which they may or may not be right) and in some cases refuse to hire members of organized labor associations, which surely seems to be beyond employers' rights with respect to individuals who are willing and competent to do the work required. And between these great conflicting organizations there is likely to arise at any time a deadlock or stale-mate, which will stop trade, manufacture, transportation, travel and everything else which is essential to popular comfort and prosperity. Which is the way out?

It seems to us that the only way to meet the regulation which opposing interests are vainly endeavoring to inflict on each other, is to bring all the vain, conflicting attempts to regulate under a higher regulation which shall be competent to say to each contestant: you shall do thus and so. There are surely men in this country competent to see through hurly-burly to justice and right, and there are men of such perception who do not have their

eyes crossed by the lure of pelf or politics. There should be some way by which contestants, as soon as their issues threaten the public interest, are compelled to submit their claims, not to each other nor to self-chosen arbitrators, too prone to compromise, but to a high national court, which shall have all the machinery of a national court to enforce its decisions, which shall be on the basis of right as between the parties themselves and the relations of both to the public interest. From the decisions of such a court we may get suggestions of rights, public and private, upon which laws to meet present conditions can be enacted. Of course, as the conservatives always remind us, there are many things which cannot be settled by legislation; but when conflicting interests threaten the continuance of public conveyance, and thus endanger the subsistence of the people, there must be law and courts to protect the public against selfish aggression. We have plenty of regulation contravening old ideals of individual rights; let us have some regulation to protect those rights which must still belong to the individual.

SHIPS TO COME SAILING.

THINKING of freedom of produce movement and ways to protect it, facts about ships suggest themselves. But because we have more ships than one would have dreamed of three years ago, we are not less in need of wide-open railways, but rather more so. It is important to know that war-time is building more ships than it is destroying, and therefore many shadows are removed from our trade outlook, but it is satisfactory to know that so many more are American ships, in construction at least. The bureau of navigation, Department of Commerce, reports 1030 vessels, of 347,847 gross tons, were built in the United States during the fiscal year ended June 30, 1916, compared with 1266 vessels, of 215,711 gross tons, during the fiscal year ended June 30, 1915. Of the 1030 vessels 258 were built in Pacific Coast shipyards, 497 in Atlantic yards, 132 on the Great Lakes and 143 on Western rivers. This stimulated building in Pacific yards is particularly gratifying. It is, of course, out of all proportion to our population and business, as compared with the Atlantic Coast, and is therefore especially interesting, as it betokens industrial activity which will be upbuilding in all ways. And what has been done in the last two years will be far exceeded in the future, for millions of money are now going into increased shipbuilding facilities on the east shore of San Francisco bay. Shipbuilders are surely awakening to a realization that the Pacific is worth while.

KEEP AN EYE ON RUSSIA.

THE development of steamer routes across the Pacific will no doubt cover new connections with the eastern terminals of the Siberian railway, which should distribute many Pacific coast products all along its course to its European terminals. California should find in that direction a new outlet for food products which can not be produced in those latitudes. An American commercial attache who has recently returned reports that notwithstanding the war there is an underlying condition of great prosperity in Russia, as evidenced by advancing wages and by enormous gains in the savings of the people. The accumulation of savings is due chiefly to the abolition of vodka, which has had far-reaching economic effects, not only in preventing waste of savings, but in improving the efficiency of industry. There are about 170,000,000 people in Russia, most of them with steadily improving standards of living and increasing

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., August 15, 1916.

STATIONS	Past Week	Rainfall Data		Temperature Data	
		Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka	0	1.36	.14	64	53
Red Bluff	0	.68	0	92	58
Sacramento	0	.07	0	86	52
San Francisco ..	.22	.25	.01	70	52
San Jose	0	0	.01	82	48
Independence	0	0	0	92	50
Fresno	0	0	0	90	58
San Luis Obispo ..	0	0	.03	70	50
Los Angeles	0	0	0	78	54
San Diego	0	.02	0	72	58

ing savings and the long pent-up accumulation of buying power should result, in demand for goods of all kinds from the United States. For warm climate food products Russia should be considered in our legitimate sphere of influence. She has only a limited supply in regions of her own or near to her and she has more appetite than all other north European countries combined. If we can only get her to going on our cured fruits it might not matter much if we were embargoed out of the Atlantic ocean side of Europe, but that is not going to trouble us long either.

FRUIT CANNERS' CONTENTMENT.

THE reference to Russia as able to take the whole mass of our cured fruits without a single ache reminds us that we ought to say an appreciative word of the gladness of those who are doing big business in fruit canneries. A year ago a whole sky full of light bombs could not penetrate the gloom which enclosed these good people. This year they have been singing their way through a hydraulic sugar press such as they never saw before and paying more money for the fruits they like than anyone expected to get while the war is on. We do not know exactly what makes them so boisterously happy, and we do not care much so long as they take plenty of fruit at high prices and get away with it some way. And yet we have an idea something great is going on. We take to the financial pages of our daily contemporaries for light reading and we saw there the other day that the stock of one of our leading canneries "turned up on the local exchange 135 bid, with none offered. Those who have tried and failed say it is impossible to get a share of the stock at anything like recent quotations." This is a little out of our vernacular and yet we must take it to mean that cannery stock is good stuff to buy to sell again or good stuff to keep, and we do not care much which; though of course we would rather that all the canners should keep busy with fruit than try to can each other. If they did too much of that, those who remained on the outside of the car might try to can the fruit-grower next, and that would be a bad and unprofitable practice, which we might have to condemn. At the moment we pass up the canneries as a very good business. Perhaps some one is trying to get too much of a good thing which may not be so good after he gets it, but we hope it will not have to turn out that way.

SECURITY IN RURAL CREDIT.

IT IS perhaps to be expected that some rather obscure things should be said about these days to increase or to diminish the political value of the recent rural credit legislation, but there are some utterances which we cannot at all understand. One such thing is this:

Under the system no actual property security will be required to back up the negotiable paper the farm banks are authorized to issue. In the final analysis the unsecured promise of the farmers' association is to be depended upon to give these notes circulation at par. The system is entirely experimental, as its creators have ignored most of the essential lessons of European rural credits systems.

The only negotiable paper we find in the law consists of debentures or bonds secured by first mortgage up to 50 per cent of the value of farming land, as appraised by the land bank experts, and to 20 per cent of the insured value of improvements. These bonds certainly have "property security" and they are all the land banks are authorized to issue.

We do not know at all what the above writer means by "notes in circulation," for there are no notes except such as a borrower gives in connection with his mortgage, and they are not in circulation. They remain in the bank with the mortgage, which is the security for the negotiable bond which is issued.

The only issue aside from bonds is stock, which the borrower has to take and pay for, to the amount of 5 per cent of his loan and this stock, in the care of a farm loan association, is not in

circulation. It is held in trust by the loan bank as collateral security for the loans made to the association members.

So far as the above provisions go, the law is in line with European methods, as we know them.

Negligent Winter Nelis.

To the Editor: I have about 50 pear trees of Winter Nelis pears on rich, sandy, loamy soil which grow very thrifty but do not bear. They blossom heavily but do not set. Later on they have a few more blossoms and a few set. Bartlett pears next to these trees do well and bear every year. Can you tell me why they do not bear?—W. C. S., Santa Barbara.

Winter Nelis is a shy or irregular bearer, and though this behavior has puzzled Californians for decades, no solution has come nearer than "natural cussedness." When the idea of needed cross-pollination for pears arose about 30 years ago it was thought that association with other varieties would improve Nelis' behavior, but only negative results came from trials. Probably if this pear had proved of greater commercial account, persistent inquiry would have disclosed Nelis' secret before this time; but, lacking that, the few growers have let Nelis do as she likes.

Is It Coulure?

To the Editor: I have several different varieties of tame grapes, which last spring bloomed and set fruit, but the fruit is very uneven in size. Some of the grapes are getting ripe while others seem to be just forming on the same clusters. Should they have been sulphured, and when?—J. S., Anaheim.

The appearance of fully developed berries and miniature berries on the same clusters is generally attributed to coulure, or the failing of some berries to be properly pollinated which is necessary to the development of varieties which have seeds. Sometimes mildew may be an agency preventing development and for this sulphur should be used, first as soon as the new growth appears, in advance of the blooming and again after the blooming, as long as there are signs of mildew on the foliage—several applications being made during the season, if necessary.

Budding Peaches.

To the Editor: What season of year to bud one variety of peach onto another variety to be successful in getting them to grow? Can peach buds be budded onto apricot trees, and if so at what season of year?—J. J., Anaheim.

Peaches can be budded as soon as you can find good plump buds on the current season's new wood. This is usually in June. Budding can continue as long as the bark on the new shoots will lift well and this may be in August or even in September, if the trees are irrigated. The fact is, then, that peaches can be budded all the way from June to September, if the sap is kept running well. You can bud the peach into new shoots of the apricot and usually have them take well, but this is not done largely in commercial propagation, because the peach is likely to over-grow the apricot stock and either be dwarfed or not make a very good union. Still it usually works well in a family orchard.

The Chance in Sour Cherries.

To the Editor: In one of the mountain districts of this county a few varieties of sour cherries such as Montmorency and Royal Duke have proven especially adapted, yielding a large crop when the apples and pears failed on account of frost. These were used as border trees so the yield has been small, the local markets handling the larger portion of the crop. A number of inquiries have come as to the advisability of making large commercial plantings of these cherries. Will you kindly advise as to the prospects for the future market of these cherries?—H., Bakersfield.

Sour cherries are very hardy and can be grown in all parts of the United States—even in the interior mountain plateaus and generally east of the Rocky Mountains—which places suited to sweet cherries are few and the product small. This fact constitutes California's opportunity to grow sweet cherries both for fresh shipments and can-

ning. Eastern canners can put up all the sour cherries the traffic will bear, but very few sweet ones, and they are poor as compared with the California product. In addition, the California markets call for very few sour cherries. The sour cherry pie is ideal, but the amount called for is small as we have so much other pie timber available. We would be careful not to plant sour cherries in excess of your local demand.

Repeating Applications of Gypsum.

To the Editor: Some of my neighbors say that if you use gypsum once you have to keep it up or your alfalfa will not do well. Is that true?—J. A., Madera.

It is probably true, just as true as it is of water though not quite in the same way. Gypsum is a form of lime, and to that extent is useful food for the plant, but it is different from common lime because it contains also sulphuric acid and this is indirectly a tonic for the alfalfa plant and stimulates greater growth. It is customary to use it in rather small applications, say about 400 lbs. per acre, and the effect upon slow-growing alfalfa is excellent. It is usually desirable to repeat the dose at intervals as the plant may seem to need it, but for its regular feeding of lime a cheaper form, like ground limestone, is more economical.

Alfalfa on Heavy Soil.

To the Editor: My land is very heavy and when irrigating alfalfa the water stands for two and three days, even when I only put on 4 or 6 inches of water. What do you advise doing? I have the land in summer fallow this year to kill Johnson grass and I wish to put in alfalfa this winter.—A. C., Madera.

Land which takes water that way is a pretty hard proposition for alfalfa, for it is pretty likely to kill out when the sun comes on standing water. If you have such hard soil over alkali hard-pan the alfalfa is likely to be hit both above and below. But if you have a good stand of Johnson grass on the land it is probably not strongly alkaline. If this is the case, you should figure on blasting the land in the hope of making it take more water and taking it faster so that it will not stand around on the surface. The surface soil can also be mellowed by use of lime, to be dissolved and set at work by the rains in advance of the alfalfa seeding.

Safety with Sorghum.

To the Editor: I have ten acres of sorghum eight weeks old and four feet high. Would it be harmful to feed it to cattle now? If it is harmful, please tell me what age it would have to be before I could feed it to cows.—Subscriber, Kingsburg.

So far as we know it is not possible to measure safety either by age or height, unless, of course, you let it go pretty dry, which is undesirable. It is the very rank growth which is most likely to be poisonous—especially a second growth after cutting, though otherwise also. There are two safeties known to us in feeding. One is to feed a little after other feeds, and not allow hungry stock to gorge themselves with it. Another is to cut and allow a wilt before feeding, which disorganizes the poison. Begin gradually in either of these ways, and it will go all right, and you will probably find farther precautions unnecessary.

The Melon Aphis.

To the Editor: What insect is eating my water-melon vines up, and what can I do for it? It is a very small green louse or bug on the underside of the leaf. They commence at the root of the plant and destroy the whole vine in a short time. They leave the vines and melons covered with a dark, sticky-looking stuff.—J. A. D., Red Bluff.

It is the melon aphis; hard to reach, but easy to kill if you can reach it, with soap and tobacco spray (one part of soap, one part of 40% nicotine extract to 900 parts of water). Use a nozzle which will shoot upward to the undersides of the leaves. Fighting should begin as soon as you see the first of them earlier in the season, and be kept up from time to time until the plants are free or beyond injury.

Date Culture in California.

Date culture and marketing are very successful when the exacting cultural conditions are met. The Growers' Ass'n wishes all date growers to succeed and they stand ready to advise as to suitability of specific locations.

(Written for Pacific Rural Press.)

It was our pleasure last spring to eat a finely flavored cured-on-the-tree California grown Menakher date 16 months old. This was supplemented by a Thoory date two years old; and that by half of another date over three years old, all unprocessed, having been preserved by their own sugar. They were all drier than the imported dates we buy. Our host, W. L. Paul, president and manager of the Coachella Valley Date Growers' Ass'n, informed us that our imported dates are all dipped in syrup because they do not contain enough native sugar to preserve them for export to America.

He also said that the really fancy foreign dates never see America because there are not enough of them to supply the holiday demand in Europe at \$1 per pound! Moreover, the fancy Coachella Valley fruit sells at \$1 per pound, while some of it last season retailed in small packages at \$1.35 per pound. From talks with representatives of foreign countries during the Exposition, he believes we could ship dates all over Europe at prices that would net the growers 50 cents per pound.

So much for the market for fancy dates grown in California.

Select Locations Carefully.—We were told that of the 5,500,000 Deglet Noor date trees in their home, North Africa, 2,078,000 are planted under conditions which make them yield only 1-3 of a crop. If in their home of centuries, date palms are planted in unfavorable conditions, how much more likely they are to be so in America.

This is what happened in the Heber date garden in Imperial Valley where the palms were set in a depression of hard, cold, poorly drained, rather alkaline soil, where the cool moist air from surrounding alfalfa fields settled about them. For this reason these trees were shortly to be moved to Coachella Valley.

Need Long Season and Sandy Soil.—Because the date, so far as varieties have been tested, requires a growing season longer than is found elsewhere, because it requires sandy land which warms up early in spring, and which reflects its heat to the palms not only through the daytime but through the nights, and because it requires the driest kind of air and sufficient soil moisture, Mr. Paul says that 2-3 of what has been done in Coachella Valley with dates has been done wrong, and that only 25 per cent of Imperial Valley dates mature into commercially salable, long-keeping fruit. Coachella Valley date shipments in 1915 are given more or less reliably, as 12½ tons.

Growers Organized.—To protect the industry from the black eye which results from failures, whosever may be the fault, and to promote date-growing on lines proved profitable, the Coachella Valley Date Growers' Ass'n was formed about Jan., 1912. In March it had 120 members; and practically all new

planters join at \$5 each. Since the Association, co-operating with the U. S. Dept. Agr., controls and keeps record of all date offshoots imported from bearing trees in the old country, and sells them to members at cost, it is worth while to join. Even the U. S. Dept. Agr. is said to get its offshoots through the Association.

To insure getting the varieties desired, the Association has the services of a man who selects the offshoots personally in Africa, making annual trips for the purpose. Home-grown offshoots also must be sold through the Association.

Advise Prospective Settlers. Perhaps the most concrete service the Ass'n renders is to give advice on all matters pertaining to date culture, to strangers intending to go into the business. If the prospective grower wants to know about the suitability of a certain piece of land, the Ass'n will investigate that piece of land and make the best report their judgment dictates. It is to the interest of these guardians of the industry to prevent the growing of poor dates and flooding the market with them to the detriment of fancy dates. It is also necessary to so locate newcomers that they will become boosters rather than knockers.

Government and University Stations.—To test out varieties, etc., for this industry, which had its beginnings in Coachella Valley scarce 15 years ago, the Government has stations at Indio, Mecca and Brawley, while the State University has a Station at Meloland in Imperial Valley.

Varieties.—There are in this country about 250 named varieties of all colors, size, sweetness, juiciness, manner of growth, etc., but only a few are seriously considered for commercial purposes.

Deglet Noor has a good lead over all others, both in Imperial and Riverside counties, while the Itema, Tazizaoot, Hayana, Saidy, Thoory, and Menakher are especially promising, but are not yet being planted so largely.

Offshoots and Seedlings.—Offshoots, which grow out of the base of an old palm, reproduce the variety and the sex truly. The cheapest price at which the Association can import them has been \$2.60 each, while previous importers charged \$5 to \$25.

Since seeds reproduce their parent varieties with moderate accuracy, by far the most plantings are of seeds. Figures published by the Ass'n early in 1915 showed 600 imported offshoots 6 years old or over and in bearing, with 34,887 under that age. Of seedlings over four years old and bearing, there were 550; while younger seedlings numbered 497,000. These figures have been considerably increased the past season. In orchard form, the palms are usually planted about 30 feet apart, given customary cultivation, fertilization, and about five irrigations per season. Seeds are planted often two at a place, five or six feet

apart in the warm open fields January to June. This gives 8 or 10 plants at least, for every one that is to remain, since the seeds germinate readily. As about half of them are likely to be males, and only one to five per cent of males are desired in an orchard, this leaves four or five from which to select the typest female tree for each position.

Pollination of flower clusters on female trees, as shown us at the Meloland Experiment Station, is done by placing a spike of male flowers, at the pollen-shedding stage, in the center of a cluster of female flowers and tying it there temporarily. The wind does the rest. The Government has had viable pollen ten years old. It is considered good practice to save male flowers which open in winter, in case the spring male flowers should be scarce.

MAYNARD PLUM POOR CROP.

To the Editor: A neighbor has a nice orchard of Maynard plums. They seem to be very poor bearers. From all appearances his land is good; and we would like to ask if there is anything you might suggest as to why they do not bear more heavily. Is it lack of pollination?—M. R. J., Fresno.

F. W. Barkhaus, Newcastle: I experimented with a block of 600 Maynard trees for ten years, without getting any crop. Tried grafting part of each tree to other varieties thinking they might pollenize, but had no luck with that. Finally grafted them over entirely. My advice would be to graft over to Grand

Duke, Wickson, or Santa Rosa as I've had the best results from those varieties. Maynards do not bear in this section, as a number of us have tried them, and had to graft over.

Luther Burbank, Santa Rosa: In some localities the Maynard is a poor bearer, in others it is quite a heavy bearer. Like a great many other fruits, it is sensitive to conditions. My advice would be if the trees do not bear well in the locality where they are, to graft them over. Possibly a few grafts of "Formosa" or some other good pollinator might make them bear, but in any case, I would graft the center or top of the tree over to some good variety.

The Maynard is one of my oldest plums. Better ones have been produced since.

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The Latest on Cover Crops.

Melilotus indica has proved most generally satisfactory as cover crop except on sandy soil, where Windsor beans are recommended. Vetches and peas are too subject to aphids. Summer cover crops are still experimental.

[Written for Pacific Rural Press by W. M. Mertz, Superintendent of Cultivations, Citrus Experiment Station, Riverside.]

There is little question but that the area sown to cover crops has been increasing quite rapidly during the past three years. Very rough approximations would probably place the growers who actually planted cover crops in 1914 at 25 per cent. Since that time we have only to go by our observations in the larger of the citrus sections. From these observations we would estimate that the increase per season has probably been between 5 and 10 per cent, bringing it somewhere between 40 and 50 per cent for last season. This is not uniform, however, since some sections are almost devoid of cover crops while others have been planted almost solid.

Common vetch has not been giving good satisfaction for several years, due in part at least to the serious attacks of the green pea aphid. This aphid has had even a greater effect on the acreage planted to Canadian peas, the other important crop, which by 1914 had dropped to a relatively small proportion of the total.

With the European war cutting off the supply of German vetch seed, the year 1915 faced a dearth of the common varieties of cover crops. The experimental plantings of Melilotus indica the year previous had shown great promise. The recommendations which we had made in regard to this clover undoubtedly had certain effect also. At any rate the seed firms gathered in large quantities of melilotus clover seed, which was furnished at very reasonable prices to growers. Something over 60,000 acres were planted to melilotus. In large measure these plantings were successful, although in most cases they represented the first attempt at growing a clover in the orchard.

This year the vetch market is in much the same condition as last; and every indication is to the effect that melilotus will be the crop most largely planted. The fact that the rains of the past winter came during a relatively short period, with very little late rain, made many of the growers wait too late to turn their cover crops under. The very heavy rains washed out the furrows used in the fall, and many of the growers who were caught by the lack of late rains, were unable to irrigate their land before plowing and thus had great difficulty in getting the cover crop worked into the soil. For this reason, quite a number of growers are adverse to the use of cover crops this season. Those, however, who started plowing in February or early March are mostly satisfied.

I do not know that the acreage planted this season will exceed the acreage of last year. In some sections a considerable increase may result, while in others the effect of the late plowing last season may reduce it. In general, however, I believe the feeling is that the cover crop is a good thing and that with knowledge of its proper handling there is little added risk in the growth thereof.

Windsor Beans for Sand.—The very light sandy soils have not succeeded with melilotus clover; and we are recommending a trial of the Windsor bean for such orchards. The seed of this bean being quite large, permits planting at greater depths than can be done with vetch or clover. It is possible to place the seed in permanently moist soil and get good germination under very sandy conditions. Objections are that the seed is so large that it requires 100 to 150 pounds of beans to sow an acre thick enough for cover-cropping. This seed costs 4 or 5 cents per pound, which makes the cost of the seed two to three times that of melilotus. When, however, it is a question of probable failure to get germination of melilotus, or getting a reasonably certain stand with the Windsor bean, \$2 or \$3 per acre for seed is really not prohibitive.

We are working in co-operation with the Department of Agriculture in developing a smaller seeded variety of this bean. It is hoped that a seed about the size of the cow pea can be placed on the market in a few years. The development and germination of this smaller seed seems to be fully equal to that of the ordinary Windsors.

Purple vetch, which has been doing very well wherever tried, is not on the market this year. The Oregon growers seem to be unsuccessful in developing the seed-growing industry to date.

Summer cover crops are still experimental, there being a number of arguments both for and against their use. It seems certain that an orchard with a heavy summer cover crop will require considerably more water than would be necessary to keep the trees alone in good condition. Many growers are now using far more water than there is any real reason to use. In such cases, a summer cover crop could probably be grown without drying out the trees. And even a leguminous plant removes considerable available plant food from the soil while it is growing, so a summer cover crop may enter serious competition with the trees, in soils none too well supplied with plant food. There are growers who are very much in favor of summer cover crops, but usually they are able through peculiar conditions to use very much larger quantities of water than the average grower can possibly get. Again, very few growers have followed the practice of using summer cover crops long enough to know definitely what the results have been. We have recently started experiments, but it will be some time before we can discuss this subject intelligently. At present, we would neither recommend nor discount this practice, except under conditions where the water supply is undoubtedly too little for two crops during the summer.

Now is the time to give the trees a chance to bear a good crop of fruit next year.



A tree in a blasted bed (at left) roots deeper, grows faster and bears earlier than a tree set in an ordinary dug hole (at right).

"The soil is the pasture in which the roots of the tree feed," says the Wyoming Experiment Station. "Blasting enlarges the root pasture, breaks up the hardpan and subsoil and permits the roots to go down and get plenty of food."

Plant your fruit trees in beds blasted with

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—Eureka Stumping or Giant Stumping—which are made especially to meet Pacific Coast farm and orchard conditions. They pulverize the subsoil better than ordinary dynamites which often act too quickly and pack the earth.

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General Agricultural Review.

GRAINS, HAY, AND FIELD CROPS.

An Italian company plans to buy 5000 acres in Colusa county to grow rice.

Fall wheat has been tried out in Truckee Valley, Nevada, with very fair success.

Idaho, California, and Wisconsin are among the States that have seed potato inspection and certification.

About 500 acres have been signed for sugar beets around Stillwater and Fallon, Nevada, for a prospective factory.

A sugar beet 26 inches long, secured near Antioch, is held to indicate drought resistance as well as subsoiling activities.

Humboldt county reports one of the best potato crops in years. A little wire worm damage was found in the northern part.

Frost for three nights around July 20 in Truckee Valley, Nevada, proved to have injured potatoes only 15 per cent, mostly on low land.

Of 73 sandy acres planted to Sudan grass on one ranch in Butte county, 40 acres have recently yielded 2½ tons of hay per acre and the second crop is coming.

Some grain growers around Tracy claim that 50 per cent of their grain was broken off by the high winds and those who haven't pigs nor fences are feeling the loss keenly.

The first carload of seeds for this season was shipped to Michigan from Hollister Aug. 9. The seed crop is generally excellent this year in the Hollister and San Juan Valleys.

Around Manteca there are being harvested and shipped sugar beets from 6,000 acres. The crop is fine and growers are getting \$5.50 and better per ton. About ¾ of the crop goes to Spreckels and the rest to the Alvarado factory.

Spontaneous combustion of first cutting alfalfa mixed with bur clover kept a fire engine busy on the A. W. Morris ranch at Woodland until they got the hay out. Bur clover is considered bad to heat.

Beans are looking fine in Stanislaus county. Besides the Black-eye, Mexican Red and Pink beans, they are testing Red Kidney beans which are very promising also. Some Limas are planted as an experiment.

The Tagus ranch in Tulare county has three hay balers at work that are turning out an average of 60 tons of alfalfa hay a day. They are baling direct from the field, allowing it to lay in the windrow and shock from three to seven days, according to the weather.

An exhibit of cantaloupes at various stages of maturity, another showing effects of commercial and careful handling, and another showing the good effects of immediate icing is being displayed in Turlock by U. S. Department of Agriculture men.

The crop of sunflower seeds around Manteca this year will be fine. Last season that section shipped 1350 tons for which growers received \$60 to \$80 per ton. The crop is shipped to various cities where it is used principally in poultry foods.

The Stockton and Lompoc districts harvested 5,350 acres of onions in 1915 and planted 4,400 acres in 1916 according to the U. S. Department of Agriculture. New York figures are 12,551 and 9,389 respectively. Ohio and Indiana beat California this year but were far below California last year.

In the Livermore section, which usually produces about 20,000 tons of hay, the crop this season was only about 15,000 tons, but quality especially good. Practically the entire tonnage is out of producers' hands; part is still in storage. Prices to growers are \$13.50 for alfalfa and \$15.50 for wheat and oat hay.

Hay producers around Pleasanton have about all sold this season's crop. The hay is now in warehouses or has been shipped to the interior where there has been a good demand. The crop about Pleasanton was nearly up to the average and the quality was exceptionally good. Prices there now are about \$15 per ton for best hay; and dealers expect the price to go higher before spring.

In the Stanislaus section east of the San Joaquin, the oat and barley hay crop is heavier than normal, and quality good. Growers have sold 75 per cent of the crop, receiving \$11 to \$12 for the oat and \$9 to \$10 per ton for barley. Fully one-third of the crop has been shipped. The barley grain crop in that section was about normal; 800,000 sacks were received by growers to handle the crop. In the section known as the west side of the San Joaquin the hay crop is reported as being up to normal and a large part of it sold.

J. M. Bomberger is raising his own alfalfa seed this season north of Modesto. Last fall he plowed strips 3 feet wide in an alfalfa field, leaving a strip one foot wide carrying roots and crowns. In the plowed spaces he sowed barley and harvested a good crop last spring. After cutting the barley he cultivated the ground and now the alfalfa in rows is in full bloom. He expects to cut the crop and thresh it in September. Even if the seed costs him 50c per pound, Mr. Bomberger thinks it will pay; as he will know the seed and what it will do.

DECIDUOUS FRUITS.

The California Fruit Distributors have opened an office at Fresno.

Late frost did considerable damage to Truckee Valley apples and pears.

Ten carloads of California fruit recently sold in one day in Eastern markets for \$16,513.

Winters growers delivered the first dried peaches to the California Peach Growers Inc.

Many Humboldt apple growers will pack under the Standardization law this year.

The State Fruit Growers' Convention will be held at Napa Nov. 15-18, preceded by two days' meeting of county horticultural commissioners.

Fifty tons of peaches were canned Aug. 5 at the Hemet-San Jacinto Growers' Ass'n cannery. The season's tonnage is estimated at 1500.

Some 30 Kings county peach growers who sold to a Los Angeles firm are whistling for their money. About 30 carloads of fresh fruit are involved.

The Watsonville Apple Distributors have named the following f. o. b. prices on Bellflowers: 4-tier, 80 cents per box; 3½-tier, 75 cents; 4½-tier, 70 cents. Newtown Pippins will be coming next week.

The California Peach Growers Inc. have begun receiving fruit—over 800 tons were reported delivered before Aug. 13. Secretary Sunderland expects to be running full blast with 1000 men before August ends.

CITRUS, NUTS, SEMI-TROPICAL.

Oakdale almond harvest began about Aug. 8.

Almonds are looking fine in Wood colony, Stanislaus county.

The Santa Fe and Southern Pacific are making extensions into the Tulare citrus valleys.

Tulare county has 15,000 acres of bearing citrus trees and 28,000 acres non-bearing.

The Banning almond crop is being picked. It is estimated at 250 tons this year.

Fig growers in the San Joaquin valley are reported as selling their crop this season at 8c per pound.

THE LOS ANGELES TRACTION AND IMPLEMENT DEALERS' ASSOCIATION.

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SECOND ANNUAL TRACTOR DEMONSTRATION

September 19-20-21-22-23
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During this demonstration every Traction Engine sold in Southern California, and Traction-drawn Farm Implements, together with a complete line of Roadmaking Machinery, will be in operation.

This event will be the greatest of its kind ever attempted in the southwest. All arrangements are practically complete to entertain 20,000 visitors who will come from all points in the State.

This big tractor and implement show will be of educational value to every Rancher and Orchardist in California.

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is near Los Angeles on the Main Valley Boulevard—is easy to reach from all points. COME—be with us on these dates.

SEPTEMBER 19-20-21-22-23

John Deere Implements

John Deere Spreader

The Spreader With The Beater On The Axle

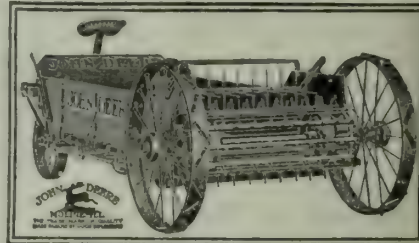
BEATER drive works on the principle of a horse power. No clutches, no chains, no trouble. Mounting the beater on the axle (a patented feature) does away with half the types of castings.

Only hip-high to the top—but has big drive wheels. Wheels out of way when loading.

Here are three exclusive John Deere Spreader features—read them over and then be sure to see them on the spreader itself:

1. Beater on the axle—nothing else like it.
2. Revolving Rake—load moving back to beater revolves the rake. Draft actually less. Even spread certain—no bunching.
3. Ball Bearing Eccentric Apron Drive—requires no attention.

If you want to distribute manure seven feet wide, use the John Deere Wide Spread Attachment. Write for free booklet.



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PRACTICAL plows for the average farm. Work with any standard tractor.

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Plows raised or lowered in fourteen inches ground travel. This makes square headlands.

All bottoms raise high—like a double-bail, high-lift horse plow. Plows do not clog or gather trash on the turn.

Extra wide and semi-floating front truck means uniform work and even depth of plowing.

Extra beam and bottom, readily attached, increases regular two-bottom plow to three or regular three-bottom to four, as desired.

Equipped with Quick Detachable Shares—save 80 per cent time changing shares.

Write for free booklet.



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Tells all about a complete line of farm implements and how to adjust and use many of them. A practical encyclopedia of farm implements. Worth dollars. This book sent free to every one who states what special implements he is interested in and asks for package No. X-152.

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John Deere Moline Illinois

No Pit

is required with the

Krogh Deep Well Turbine Pumps

For bored or drilled wells from 10 inch inside diameter up; and for capacities of 250 gallons per minute up to 3000 gallons per minute. Built for pumping from any depth to and including 250 feet. They are absolutely water balanced and are self-aligning. More water can be obtained from such wells than with any other type. Built in belted or direct motor driven types. If interested, write for Bulletin.

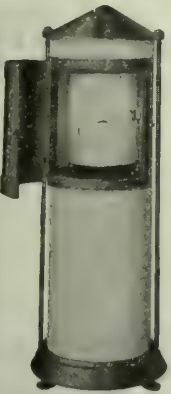


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Lasts and Lubricates.

For Sale by accommodating dealers.

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WHITTIER-COBURN COMPANY
San Francisco

A four-hour brush and grass fire on the Paicines ranch burned over 1000 acres before the 80 fire fighters controlled it.

The St. Helena Vintage festival Sept. 1-4 is to be a great event.

Walnuts are beginning to drop in the Santa Barbara orchards and the harvest will be on by Sept. 1.

Today there is less citrus canker in the whole State of Florida than there was a year ago in half of Dade county alone.

What is claimed to be the largest olive pickling plant in the world, with capacity of 75,000 cases and 50,000 gallons of oil per year, is being built at Oroville.

The Tulare County Supervisors recently rescinded their ordinance placing supervision of citrus spraying in the hands of the county horticultural commissioner.

TABLE GRAPES AND RAISINS.

Lodi Black Prince grapes were ripening last week.

Lodi Tokays will begin moving about Aug. 21.

Car shortage caused several hundred Fresno Malaga pickers to lay off last week.

Successful Concord grape raising has been carried on for a few years by Mrs. L. Frey of Truckee Valley, Nev.

The hot sun recently caused considerable sunburn of table grapes around Lodi and Stockton, especially on sandy soil.

The Canadian trade has been complaining of the packages in which loose raisins are shipped, losing a lot through easily made breaks. The hard fiber boxes are suggested as an improvement.

MISCELLANEOUS.

A \$195,000 bridge is to cross the Sacramento at Rio Vista.

Live Oak drainage is attracting active interest.

The Yolo County Farm Bureau will hold a harvest festival at Woodland Oct. 7.

The Tehama County Board of Supervisors recently voted to establish a County Free Library.

There are between 8,000 and 10,000 beekeepers in the State, according to the A. I. Root Co.

The Fourth National Conference on Marketing and Farm Credits will be held in Chicago Dec. 4-9.

Co-operative buying for members by Morganhill Farmers' Union amounted to \$6300 in June.

Trees from 3800 acres are daily converted into paper. No wonder cheap paper costs so much.

The National Farm Loan Board will begin hearings Aug. 21, preparatory to locating the 12 banks provided by the law.

A Farmers' Union fruit, flower, and vegetable show will be held Sept. 16 in Union school, Santa Clara county.

The annual dahlia show to be held under auspices of the California State Floral Ass'n and the Alameda County Floral Ass'n will be held in September.

A break in the main diverting dam of the Miller and Lux system about 7 miles from Mendota will deprive many ranchers of water for the rest of the season.

A 1520-acre ranch near Lakeview, Ore., was recently sold by W. B. Parker to Charles Sherlock, who will seed it to timothy and clover for sheep summer pasture.

Irrigation on the Crocker-Hoffman tracts near Merced seems to be overdone, as much by seepage on some farms as it is reported underdone by lack of water later in the season on others.

The College of Agriculture of the University of California announces a free correspondence study course on "Lumber and Its Uses" to be given under the direction of the Division of Agricultural Education. This course, which is prepared by Prof. M. B. Pratt of the Division of Forestry, is planned to be of value to all persons having to do with lumber. It deals particularly with lumber produced on the Pacific Coast.



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The Best Tire Buy On The Market

THE Fisk reputation for Quality is the result of seventeen years of honest, painstaking manufacturing. Car owners who have been buying Fisk Tires during all that time buy them today because they have learned that they can depend upon Fisk Quality, year in and year out. They have learned that they can't buy more real dollar-for-dollar tire value. And this year they are getting greater mileage returns than ever before. Considering, too, that Fisk Tires with their heavy non-skid traction tread cost less than the plain styles of several other standard makes, there isn't greater tire value on the market today.

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More than 35,000 Fisk dealers and 125 Direct Fisk Branches make Fisk Service quickly available. Through your own dealer you are sure of the promptest attention of the Fisk Branch in your immediate vicinity. If you are handy to that branch make it a point to call there yourself—it doesn't matter whether you use Fisk Tires or not, you are welcome to Fisk FREE Service. Dismounting, inspection, inflation, assembling, mounting extras, inspecting wheels for alignment, advice on the care of your tires, and so on, all FREE. No charge to any tire user except for actual repairs and supplies—in any Fisk Branch. No other Tire Service Policy is so liberal or complete. No other Branch System is so extensive, or so handy wherever you may live.

Complete list of branches on request. Send for price list or call on nearest branch. Partial list below.

THE FISK RUBBER COMPANY of N. Y.

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Trade Mark Reg. U. S. Pat. Off.
Time to Re-tire?
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Fisk Dealers Everywhere—Fisk Service Branches in San Francisco, 1431-1439 Van Ness Ave.—Oakland, 2418 Broadway—Sacramento, Cor. K and 14th Sts.—San Jose, 280-282 N. First St.—Fresno, 1362-1364 I St.—Los Angeles, 10th & Hope Sts.—Pasadena, 722 E. Colorado St.—Portland, 54 No. Broadway—Tacoma, 725-727 Broadway—Seattle, 910-914 E. Pike St. More than 125 Branches cover the United States—write for complete list. D

California's Thirst for Tractors.

(Continued from first page.)

machine-makers turned to serve farming to keep their plants engaged and their money busy. In 1856 the Mechanic Institute of San Francisco issued a circular addressed "to the mechanics of the State of California" earnestly hoping that mechanics generally will attend the State Fair "if only for the mutual interchange of ideas and views relative to the blending of the agricultural and mechanical interests for future exhibitions."

And three years later the announcement was publicly made that "the number of patents issued to Californians for inventions of the first magnitude is not less surprising than the mineral wealth of our mountains or the productiveness of our valley soils." This may seem to be putting it rather strongly and yet the records show that a decade later, in 1869, the patents issued to Californians and Oregonians in the one item of wheel plows, largely exceeded in number similar inventions from all other States of the Union combined.

Of course the recourse to capacious machinery for farming was stimulated by the scarcity of labor and the tremendous wage rate prevailing at the time. Evidently the economic secret of success was not in what a man could do with his own muscle but what he could direct by his touch—making forces not of his own physical body but of power and machinery do greater work of production than the old man-power agriculture could attain. The recog-

nition of this local condition is seen in the fact that the California teamster had more mules in front of him and more wagons behind him than teamster ever handled before: that the wagons had the large boxes and beds, especially made for California, and that the largeness of the wagon was reflected in the plows, reapers, headers, threshers, etc. And this was so prevalent that all Eastern manufacturers shipping to this coast had to make California styles for such trade. And all these things were eloquent not only of our necessities and opportunities, but they reflected the California conception that a California farmer was called to large work in the world.

Three Avenues Leading to the Tractor.—Analysis of the conditions prevailing from the very beginning of American occupation, and tracing the course of experience in meeting these conditions during the first half-century thereof, suggests that California reached the realization of the tractor by three avenues, not always distinct and separate, but sufficiently so for clear recognition. These avenues will be named: (1) the approach by the "steam-plow"; (2) the approach by the "steam-thresher"; (3) the approach by the "combined harvester." Inquiry into the history and development of each of these lines leads to the conviction that in all these avenues California mechanics, spurred on by California farmers, did work which must be considered original both in time and style; and in the line which

finally led through to realization, there was not only originality in beginning but achievement which has not yet been matched elsewhere in the world. It would require a volume to adequately set forth the prophetic utterances, and the efforts made to realize them, during the early years of California farming. Obviously, in this connection, only vistas can be sketched, here and there, through the three highways of progress which have been indicated.

The Thirst for Steam Plowing.—Although efforts at steam locomotion were first put forth abroad almost a century before California was industrially discovered, they all led to the realization of the railway and not to steam cultivation of the land. Priority in steam plowing is generally credited to the Fowlers of England, who patented their steam-plowing machinery in 1854 and ten years later gave a satisfactory working test of it at one of the Royal shows. Evidently steam plowing was in mind, at least, in California quite as early as the date of Fowler's patent, for the California Agricultural Society offered gold and silver medals, etc., for steam plows in 1858 and the committee in that year noted, with apparent regret, that "there were no cast or steam plows entered for competition." They evidently expected them and reasonably too, for they awarded premiums to "steel plows" and "gang plows" and "sub-soil plows," of local manufacture. The report of the committee was written by the late John Bidwell of Chico, who said, in 1866:

I cannot doubt that ere long steam or some other convenient power will

be made to perform the plowing instead of animals. Labor being dearer here than in any other part of the world, we must make up the disadvantages, under which we struggle, by adopting all the improvements in the form of labor-saving machinery. In this regard we are now certainly in advance and I believe will maintain the lead of all other nations.

And yet General Bidwell was really nearer to the beginning of steam-plowing effort in this state than he thought, for in 1858 there was exhibited "a traction locomotive steam car" of which the committee on steam engines reported:

We have carefully examined the "Leviathan Locomotive Steam Car" invented and constructed by Warren P. Miller of Marysville and find that it possesses great merit, being capable of transporting passengers and freight over any reasonable road and is also capable of being used to advantage in the agricultural business of the country in almost all cases where animal power has been heretofore used. Your committee believes it an invention which will change the entire aspect of things in transportation and other business of the country where power is required."

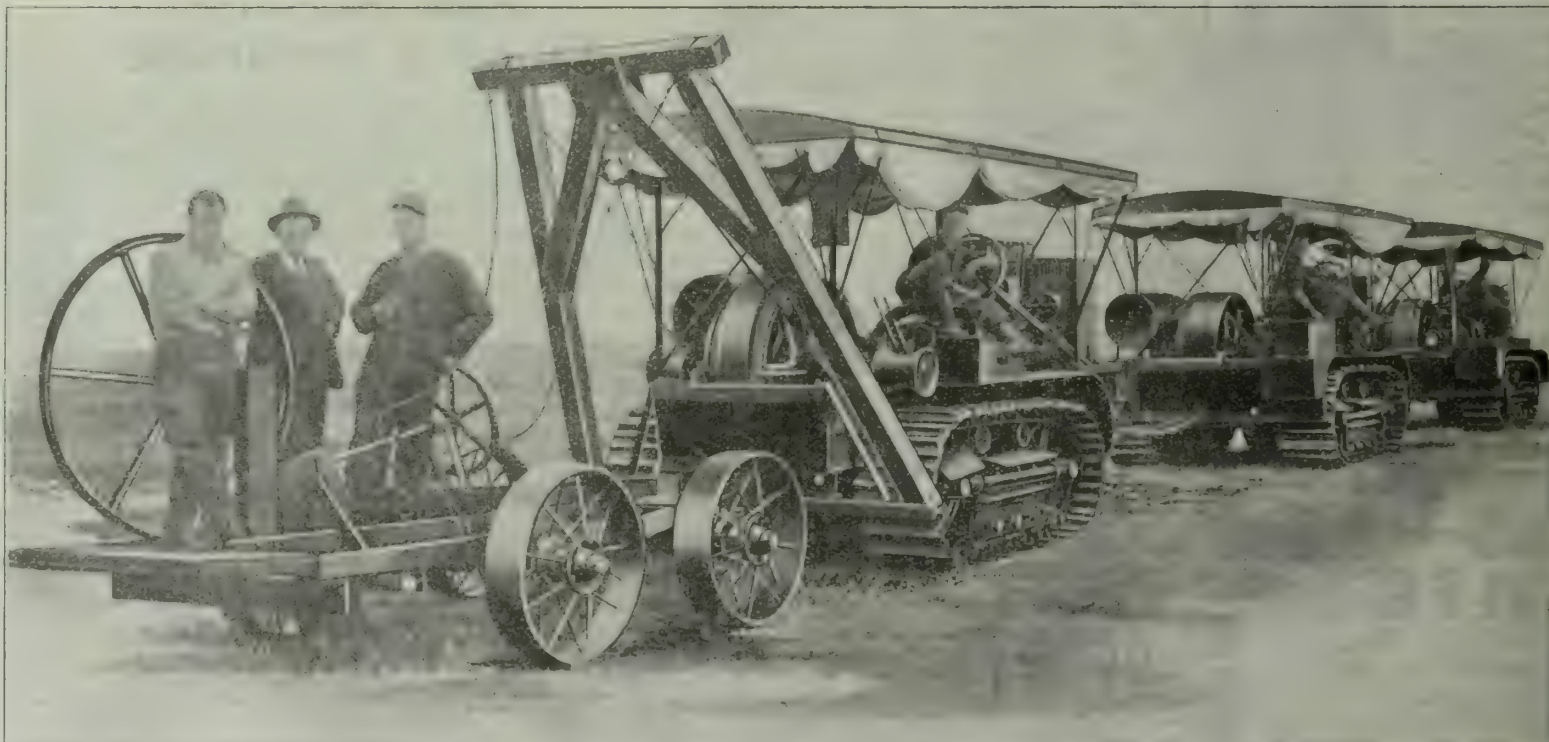
And to emphasize its conception, the committee awarded to Mr. Miller a premium of \$400.

But the realization of steam plowing was deferred not only here but elsewhere. In 1868, the late C. F. Reed, of Yolo county, said:

"The subject of applying steam to the tilling of the soil has attracted attention of inventors in nearly all civilized countries for years past, but a citizen of California is likely to be first to succeed in the accomplishment of this grand achievement."

At the State fair of 1868 a first

Single Standard Gopher or Drainage Plow



The only tool of this kind on the market for reclaiming marsh land or draining low grounds for beets and other crops. During the past season we have put out fifteen of these tools with excellent results in every case. We have a number of reports from the owners of large ranches stating that they have made thousands of dollars in one season by the use of this plow. THE GOPHER PLOW is bringing into use land that heretofore has been considered useless. If you have a problem of this kind, write us. We would be pleased to correspond with you regarding it.

The Killefer Manufacturing Company

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LOS ANGELES, CALIFORNIA.

premium of \$300 and a diploma were awarded to Coffin & Standish of Martinez for the steam plow "Mayflower," and a model of a steam plow by Conrad Locher of Marysville was commended for "embracing more points of usefulness than any other plow." Mr. Locher subsequently built a machine, on the basis of his commended model, and in 1871 it was plowing on the Henshaw ranch, Hamilton township, Butte County, "at the rate of thirty acres a day, ten inches deep."

By this time (1871) there were several "steam wagons" in operation in California, doing some plowing, but more hauling of freight wagons, including heavy freighting to Virginia City, Nevada. Some were imported; others were of local manufacture. Space will not permit specific references to all of them. One of them was an imported machine called "Thompson's Road Steamer," on which local improvements were placed, and it then "plowed 25 to 30 acres a day at less cost than with horses, doing good work and cutting a strip seven feet wide." This was near Stockton, and the committee found quite an advantage in the fact that "it can tackle a felled tree in any part of the field and haul it out of its way as easily as a brush-drag." At the public trial it was awarded the first prize—\$50 and a diploma.

It was also in 1871 that Oliver Hyde & Son built in San Francisco their "American Overland Steamer," which surely had a romantic eastward career. At Sacramento "it hauled the three columns (50,000 lbs.) for the new State Capitol, and after this feat it loaded itself on a flat-car up a slope of 32 deg. and rode to Salt Lake, where it was put to work. It went by its own steam over the chief roadways in Utah and then started from Corinne for the mines, hauling a train of six wagons, one of which was built wholly of iron at Corinne and had a capacity of 20 tons of freight—a detailed account of its adventures being given in three and one-half columns of the Pacific Rural Press of Aug. 19, 1871. In the '70s and '80s probably not less than a dozen designs of traction engines were doing hauling, plowing, ditch and levee building, tule-hashing and other work here and there in California, but never coming into common use as a substitute for horse power. In 1872 Alexander Campbell prepared for the State Agricultural Society an essay on steam cultivation, in which he submitted an argument to show that hauling plows by cables is better than by direct traction and urged the introduction of the Fowler apparatus which worked with cables, back and forth from headlands, either with two traction engines or with one engine and an anchor. Several of these Fowler rigs have been brought to California at different times and have been used quite largely chiefly in connection with sugar-beet growing. But Californians have always believed in direct traction rather than pulling cables, and the tractors of the present day have justified this preference. It was a rational preference because during the dry season California lands will sustain even the heaviest traction engines and facilitate all kinds of work they can do;

and, for the softer soil of the rainy season, the tractors have been lightened and otherwise improved for going upon it. Thus the early era of development of steam plowing in California made its contribution to the final attainment of the tractor, but did not lead directly to it.

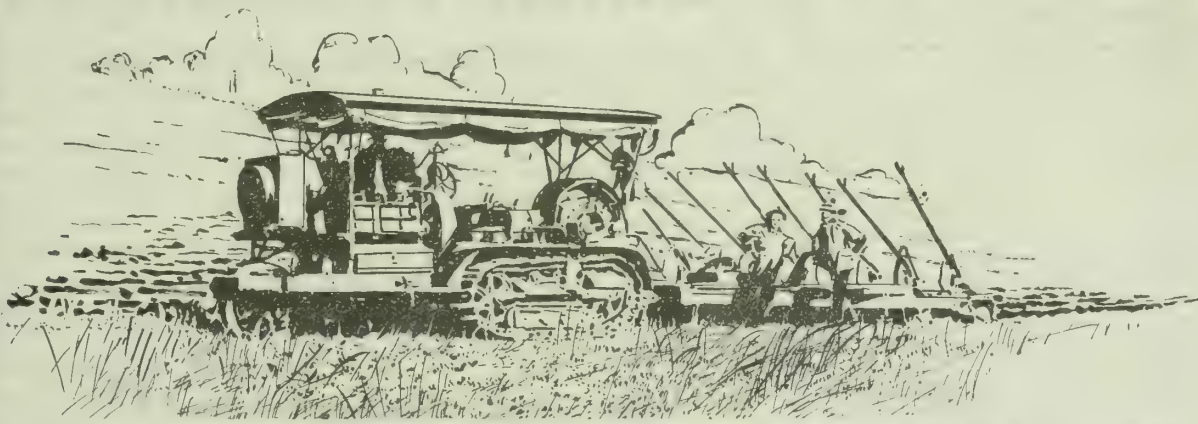
Approach by Way of Steam Threshing.—California achievements in substitution of steam for horse power in grain threshing led the modern tractor, although its contribution to the development of that mechanism was, perhaps, not large. It is interesting to note, however. In 1861, the first portable engine for threshing was built by Joseph Enright at Napa, after he had successfully run a separator by belting down from a stationary engine (made for a saw mill) the previous year. In 1861 also there were six portable engines for threshing imported from the East, but they were pronounced too small for the work. California-made threshing engines

gained in popularity for several years, and with straw-burning attachments became almost universally used in all the large valleys. In the '70s the rival builders were Joseph Enright of San Jose and H. W. Rice of Haywards. At the State Fair of 1877 four portable straw-burners were exhibited: two Eastern and two Californian—the award being to a California machine. All these were portable but not automobile. It was at a later date that the threshing engine evolved into a traction engine, moved itself and sometimes hauled its separator, cook-house and other paraphernalia, from place to place. Thus the portable threshing engine may be said to have grown towards the tractor.

Approach by Way of the Combined Harvester.—It is our opinion that the straightest route from the first ideas of steam-work, cherished by the California pioneers, to the modern tractor, is to be found through the evolution of the combined harvester. This is not the

fact everywhere, of course, for the use of the combined harvester is largely restricted to the grain fields of the Pacific states and a few other parts of the world which have secured them from California manufacturers. The historical succession in California is however quite clear and interesting, and the present widespread disposition to tractor-farming in this State has certainly been fostered by the achievements of the combined harvester.

The combined harvester is not as new a thing as is commonly thought. The inception of the idea dates to the first American decade, for at the fair of 1857 a diploma was awarded to Mr. Verrell (or Mr. Vevill, for the report gives both names) of Stockton for a model of a "harvester and thresher combined" and the report says "it shows one more step in inventive progress toward this desirable result, though its real usefulness has yet to be tested"—leaving the impression that even this early record is not the first.



Make Your Own Comparisons

You have read tractor advertisements—you have studied tractor catalogs. Now, at the State Fair, you may see the machines engaged in actual work. Compare them there, side by side.

See how far superior the Caterpillar is, in construction and design. Note its ease of handling, its simplicity, its complete accessibility. Study the features that made this tractor Grand Prize winner at both 1915 Expositions. Learn how motor power is turned into pull, in the Caterpillar, with least frictional loss—how soil packing and miring are made impossible.

Then Make This Further Test:

We know you will be convinced that the Caterpillar is superior if you compare it, point by point, with other tractors. But still surer proof of a tractor's merit will be found in talking with the owners and operators of the machines.

Caterpillar owners will tell you that this tractor is built for service, that it will work in any season, regardless of weather or ground conditions, that its fuel and upkeep costs are light.

There are more than 1200 Caterpillar owners in California alone—let us give you the name of the one nearest you. Or, if you haven't read the Caterpillar Catalog, send for it today.

CATERPILLAR
Reg. U.S. Pat. Off.

Don't Say Caterpillar Unless You Mean the Tractor Holt Builds.

The Holt Manufacturing Company, Inc.
Stockton, California

San Francisco, Calif.
Spokane, Wash.

Portland, Ore.
Peoria, Ill.

Los Angeles, Calif.
New York, N. Y.

**WINNER
GRAND PRIZE**
At the Panama-Pacific Exposition and at the San Diego Exposition, the Caterpillar was awarded the Grand Prize—highest possible award. Only one Grand Prize was granted in each class.

In 1866 R. F. Cook of Napa received a diploma for a model of a "steam harvester, separator and thresher—to be hauled through the fields by animal power while the machinery is worked by steam."

In 1871 at the Mechanics Fair in San Francisco there was shown "one of Howell & Low's famous headers and threshers which cuts, threshes and sacks the grain as it moves along through the field," and it is also stated that "it is expected that Oliver Hyde (who has a contract to put in 2000 acres of land with grain in Sutter county with one of his successful California Road Locomotives) will gather the grain with one of Howell & Low's harvesters." If that was done, it constitutes the earliest record we have thus far discovered of a combined harvester and traction engine at actual field work in this State.

In 1870 a premium was awarded to Matteson & Williamson of Stockton for a combined harvester operated by animal power, and of this machine the President of the Society, the late C. F. Reed, said in his opening address of 1871:

Machines have been recently invented and manufactured in this state, each of which with only three men and a team, is capable of cutting, threshing, cleaning and sacking 30 acres per day of wheat that will yield 40 bushels to the acre. There is in California a wheat grower who has 60,000 acres (25 square miles) in a single patch. With ten such machines he could harvest his crop in two months. Ten men, working with old-fashioned cradle rake and hands, would consume five years in harvesting the same amount of grain.

And yet it was about a decade before combined harvesters began to get really busy. D. Houser in 1882 secured a premium of \$75 at the State Fair and a gold medal at the Second District Fair for his "combined header and thresher" which the committee called: "the most valuable labor-saving machine in California." In 1883, L. U. Shippee entered the manufacture of harvesters and made things hum in his characteristic way for several years, during which awards of \$250 prizes and gold medals were freely made. The Shippee, Powell, Minges, Houser, Young and other types were exhibited for several years in competition until the Society wearied of paying such large premiums, and then the machines were shown for several years without competition. In 1887 the Holt Combined Harvesters were first noted at the State fairs. In 1888 the Board of Agriculture said in its annual report:

Our Combined Harvesters that cut, thresh and sack at one operation, enabling the farmer to market his grain on the day of ripening, if needs be, illustrate the spirit that predominates in our wide-awake California farmer."

Whether the operation of a combined harvester and traction engine was realized in 1871, as noted above, or not, the writer of a report in 1889 was so impressed by the fact that the great combinations of the third decade were still operated by droves of horses or mules that he indulged in this outburst:

The novelty of the combined harvester has hardly worn off before we were shown a practical and powerful motive power to draw it. The traction engine is shown perfected to a degree of usefulness not heretofore attained. It is the invention of Daniel Best and its use was

demonstrated by a test before a committee and the perfect ease with which it handled a gang of twelve plows in dry soil was noticeable. It also drew a combined harvester with the same apparent ease.

This achievement induced the State Board of Agriculture to return to premiums for combined harvesters, and in 1891 there were entries by five California manufacturers and the prize of \$100 and a gold medal went to Daniel Best for his "combined harvester with steam power." At the same fair Mr. Best was given a premium of \$50 for "the best vapor or gas engine."

And this fact brings us to the period of the modern tractor, as based upon the use of an "internal combustion engine"—and to the end of the space which we can conveniently give to the subject at this time. It has not been our purpose to present views of the tractor but to merely sketch in a California background upon which, at least in this State, this greatest achievement of modern agricultural machinery must be pictured.

We may now claim to have sustained our thesis that the thirst for the tractor was an aspiration of the

California pioneers, and that they worked diligently and connectedly toward its attainment: and we may, perhaps, also fairly claim that the farmers and mechanics of no other single State have contributed more to this attainment, during the last quarter of a century, and to the popularization of it not only in this State but in various parts of the world.

Many Bull Tractor owners are burning half kerosene and half gasoline without changing their carbureter equipment.

26 Extra
Features

Mitchell
MID-YEAR
MODEL

\$1325
F. o. b. Racine

John W. Bate's Surprise

This Mid-Year Mitchell came out in April as a nation-wide surprise.

It combined in one car all the best new conceptions found in 257 Show models. It embodied 26 extra features, most of which all other cars omit.

Yet it sells at a price which is way below other cars of its size and class.

But what you see here is the final result of 13 years of effort. John W. Bate, the efficiency engineer, has devoted those years to the Mitchell. The car which amazes you today has come through that evolution.

The Extra Values

You see here extra values. You see the most complete car ever shown. You see many costly features, exclusive to the Mitchell. And you wonder how we give them at our price.

The reason lies in factory efficiency, due to Mr. Bate. He has built and equipped here a model motor car plant. He has, in six years, cut our factory cost in two.

We now build in this plant, by his up-to-date methods, 98 per cent of this car. And all of the extra values we give you are paid for by factory savings.

700 Improvements

But Mr. Bate, in those years, has done more than you see. He has worked out in the car over 700 improvements.

Under his direction, every part has been studied. And every part brought to perfection.

Castings have been practically eliminated. He employs drop forgings and steel stampings to make lighter, stronger parts. There are 440 such parts in this Mitchell.

He gives you big margins of safety. There are oversize parts

where the strain comes. There is much Chrome-Vanadium steel.

He has aimed at a lifetime car, enduring and trouble-proof. Six of his cars, as a result, have averaged 164,372 miles each. That is over 30 years of ordinary service.

That's the sort of car that wise men want when they buy a car to keep.

Added Luxuries

He has given you a car big, roomy and powerful, yet very economical of fuel. For ease in driving he has given you a new type of control. He has given you ball-bearing steering gear, an engine primer at the driver's hand, a power tire pump, etc.

For easy riding he has given you Bate cantilever springs, 52 inches long.

He gives you a 22-coat finish, deep, rich upholstery, a light in the tonneau, a locked compartment, and many unique appointments.

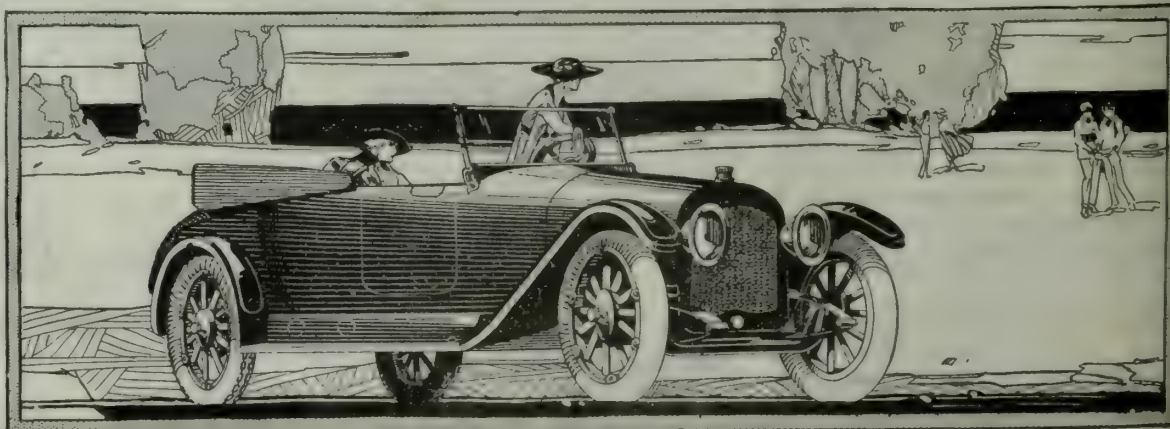
Those are results of efficiency. They would be impossible at the Mitchell price without this model plant. And such a car would be impossible without a John W. Bate.

That is why so many big men are buying Mitchells now. Many engineers—men of nation-wide fame—have lately bought the Mitchell. Thousands of business men select it. They know what efficiency means.

You will want this car when you know it. You will want its attractions, you will want its endurance. Let your nearest Mitchell dealer show you in how many ways it excels. If you don't know who he is, ask us for his name

MITCHELL MOTORS CO., INC.
Racine, Wis., U. S. A.

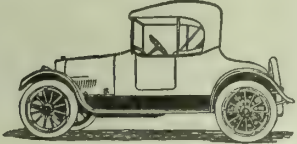
\$1325 F. o. b. Racine
For 5-Passenger Touring Car or
3-Passenger Roadster
7-Passenger Touring Body \$35 Extra
High-speed economical Six—48 horsepower—127-inch wheelbase. Complete equipment, including 26 extra features.





Announcing The Reo Models and Prices

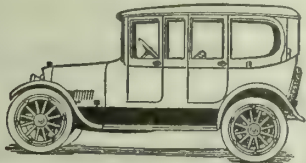
Two Important Price Reductions
Two Interesting New Models



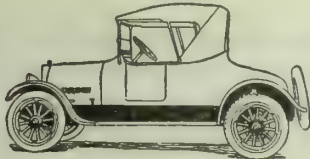
The New Four-Cylinder, 3-passenger Reo Roadster, \$875



The New Reo the Fifth, "The Incomparable Four," \$875



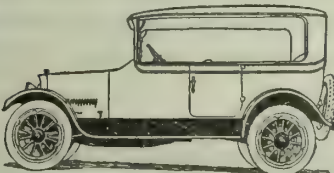
The New Four-Cylinder Reo Enclosed Car, \$1025



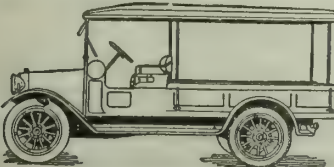
The New 4-passenger Reo Six Roadster, \$1150



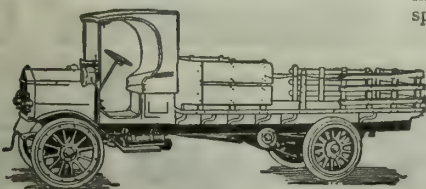
The New 7-passenger Reo Six Touring Car, \$1150



The New Reo Six 7-passenger Sedan, \$1750



1500-pound Reo "Speed Wagon," \$1000



2-ton Reo Truck (Chassis only, with Driver's Seat and Cab), \$1650

(All Prices are f. o. b. Lansing, Michigan)

YOU WANT TO KNOW—everybody always wants to know—what models Reo will make the coming year, and the price of each.

OF COURSE THERE ARE NO NEW MODELS—new chassis models we mean. You do not look for, do not expect, do not want new chassis models from Reo.

THAT ISN'T THE REO WAY. Refinements—of course. Detail improvements—wherever and whenever we can find a place or a way to make them.

NOTHING RADICALLY NEW is ever offered to Reo buyers. For it isn't new when it gets to you—it has been thoroughly tried and conclusively proven before we let it get into a Reo car.

NEW BODY TYPES—YES—and some that put Reo in the highest class of cars in looks as well as in performance and longevity. We'll treat of each in turn.

REO THE FIFTH COMES FIRST, of course. First not only among Reos, but among motor cars.

FOR THIS IS THE GREATEST automobile ever built, we verily believe.

THIS IS THE SEVENTH SEASON that Reo the Fifth has been standard in practically its present form.

NO: THE PRICE WILL NOT BE CHANGED this season. We will not increase—we cannot lower it.

ACTUAL COST OF MAKING is now more (\$50 more) than when the present price, \$875, was set a year ago. And we had made this model so long; had so refined and perfected manufacturing processes; had reached such a high state of efficiency in production; and cut dealers' discounts so low that we had, then, reached rock bottom.

IT WAS AN ACHIEVEMENT of the first magnitude to produce such a car and sell it at such a price—\$875.

TODAY YOU SEE OTHERS increasing prices all along the line. They must do so. They have no choice.

ORDINARY BUSINESS RULES dictate that we also "tilt" the price of Reo the Fifth \$50 at least.

BUT REO PRIDE PROMPTS that we absorb the extra cost, as we have for months past, and keep the price where it is until conditions will, happily, return to normal.

THE FOUR-CYLINDER ROADSTER—same wonderful chassis, same price, is the smartest thing on wheels—the most popular car in the world among physicians, and all professional and business men. Also \$875.

TO SUPPLY A GROWING DEMAND for an enclosed body on Reo the Fifth chassis, we have planned to build a limited number. The quality will be Reo—which is to say, excellent. The top is rigidly supported at front and rear. Removable glass panels convert it into a veritable limousine for winter, and these discarded and with Jiffy curtains (which are also furnished) it is an ideal summer touring car. The price is \$1025.

THE NEW REO SIX will continue in its present popular forms—the 7-passenger touring car and the classy 4-passenger roadster; and we will make a limited number with Sedan bodies to supply an insistent demand for this type of body on this splendid chassis.

THE PRICE IS REDUCED \$100 on the 7-passenger and roadster models. Now \$1150!

NOW YOU WONDER, and naturally, how we can reduce the price of the Reo Six models and not the Four—especially after what we have just told you about the increased cost of production.

SEEMS ILLOGICAL at first blush—doesn't it? But it isn't. For the truth is never illogical. And the truth is that despite the present higher prices of materials and labor still it costs us less to make this six-cylinder model than it did a year ago.

BY THE WAY—there's the greatest possible example of the workings of the Reo plan and its beneficence to buyers. Listen!

REO THE FIFTH SOLD FOR \$1250 in 1912. Its price was reduced by successive stages from year to year as follows: \$1175, \$1050, and now is \$875 f. o. b. Lansing.

SAME CAR?—No—an infinitely better car—for each year we have incorporated refinements and added equipment as the art has developed.

AND WE TOLD YOU EACH YEAR the reason for the reduction—that we had absorbed a portion of the initial—experimental, tool jig, die and special equipment—cost, and were giving you the benefit.

THIS POPULAR REO SIX is now in its third season. It has passed the same stages through which its great four-cylinder namesake went—initial costs have been absorbed, charged off. And in accordance with that unswerving Reo policy we give the buyer the benefit and set the price at \$1150 f. o. b. Lansing.

WE WILL MAKE A LOT MORE of those 4-passenger Six Roadsters the coming season. We underestimated the appeal and the demand for this model. It proved one of the most popular Reos ever built.

THE SIX SEDAN speaks for itself, though, truth to tell, an illustration does it scant justice.

YOU MUST SEE IT where you can study its artistic lines and faultless finish to fully appreciate this latest Reo which we price at \$1750.

NOW A WORD ABOUT THE TRUCKS since 90 per cent of all Reo automobile distributors also handle Reo motor trucks.

PRICE OF THE 1500-POUND REO "Speed Wagon" has been reduced to \$1000.

SAME REASON—SAME POLICY—reduced cost of manufacture despite higher present cost of materials—as enunciated in speaking of the Reo Six.

AND THAT TWO-TON REO. What shall we say? What need we say? We submit, it is the greatest 2-Ton motor truck in existence. Has been standard for longer. Has given greater proof of its sturdiness and efficiency and low cost of upkeep.

IF WE ARE TO JUDGE by that over-demand, we may well assume that we could sell all that we could make were the price \$2500, instead of \$1650.

AND FINALLY A WORD about the big general plan—a brief reiteration of the Reo policy.

WE STILL ADHERE to our determination never to make more Reo cars or trucks than we can make and make every one good.

TEMPTATION IS GREAT of course. Dealers protesting, buyers begging for more Reos. But we know—we know—on what solid foundation this Reo success was built; and we'll jealously guard that policy to the last.

RIGHT NOW—AUGUST—there are more orders on hand at the factories than at any previous time in Reo history. Orders hopelessly in excess of factory output—and that also is greater than ever before.

AND RIGHT NOW Reo stands higher in the esteem of buyers and of the trade than ever before.

\$30,000,000 PER ANNUM is not small by any means. Reo is in fact, one of the largest in point of production. We have no ambition, however, to be the largest. Don't want to make all the automobiles—only the best.

RATHER THAN INCREASE the quantity we shall strive always to improve the quality so that, as the art advances and cars generally improve, still Reo will continue to be known as—"The Gold Standard of Values."

REO MOTOR CAR COMPANY
REO MOTOR TRUCK COMPANY

Factories: Lansing, Mich.

"THE
GOLD STANDARD
OF VALUES"

Good Enough for Any Herd



AGGIE GRACE PONTIAC CREAMELLE
Half Brother of Marie Clothilde
Pontiac Creamelle, California
Champion 2-year-old.

This youngster's dam, Aggie Grace Brookside Princess, grand-daughter of Pontiac Klondyke, the greatest Holstein sire in the world, has an official record of

28.17 lbs. BUTTER - 456 lbs. MILK
TEST 4.9%

This record was an increase of 6 lbs. butter over her previous record and I expect her to make at least 30 lbs on her next test.

His sire is Dutchland Pietertje Creamelle, one of whose daughters at 2 yrs. 1 month has just made a record of 22.52 lbs. butter, 391.7 lbs. milk, test 4.72%, making her California's champion 2-year-old.

This young bull is perfect in type, is 50% white and just ready for service. Born Apr. 22, 1915. Write or call and see the herd.

F. STENZEL

SAN LORENZO, CALIFORNIA
Breeder of high-test Holsteins.

HOG CHOLERA ITS OWN PREVENTION



WE TEACH THE HOG RAISER FREE, HOW TO VACCINATE THEIR HOGS.

READ THIS LETTER:

Mr. L. B. Green, Mgr.,
Inter-State Vaccine Co.,
Los Angeles, Cal.

Dear Sir: This will acknowledge receipt of 2,200 cc of your Hog Cholera Serum for which I wish to thank you for such prompt delivery.

We have been using your serum and virus the past year on more than 500 hogs, and can truthfully say that we never have had such good success in vaccinating for hog cholera as we have had with your medicine. We have tried other serums and virus but have had poor success. With yours we have not lost more than 1 or 2% and in all these cases it has been partly our fault.

I wish I might impress the hog raiser that vaccination for this dread disease among hogs is the only sure and successful way to insure success. It costs so little and gives absolute immunity against cholera that it is the best insurance to be had and anyone raising hogs should not do without it.

I am more than pleased that you have a branch here in Los Angeles where we can get our serum any day without sending East.

Yours very truly,

SAN GABRIEL LIVE STOCK CO.,

By Clark Standford, Pres.
Write for Free Book on Hog Cholera.
Main 1280—PHONES—Home A1326.

Inter-State Vaccine Company

429-130 Bryson Bldg., Los Angeles.
L. B. Green, Mgr., or Dr. W. J. Embree.

HORSE OWNERS! USE

CAUSTIC BALSAM.
A safe, speedy and positive cure for the most dangerous and most common disease of horses. Removes all lumps from the horse's body. Impossible to produce scar or blemish. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Cleveland, O.

COST OF BUTTERFAT.

To the Editor: As marketing Agent of the Farmers Union of this county, I am working on the proposition of better prices for butterfat and as a basis for my investigations I want to know what it actually costs to produce a pound of butterfat under the following conditions: Alfalfa \$10 per ton, land \$300 per acre (with improvements), cows giving 300 pounds of butterfat in one year. These cows worth \$125 each. Water and land tax \$4 per acre, salary of farmer \$1000 a year, 20 acres of land capable of keeping 15 cows, 2 horses and young stock. One man being able to care for 15 cows and provide hay, etc. I would not figure in concentrates, for the majority of farmers do not feed them and they would complicate the problem and we have many cows of the above standard fed only on alfalfa. (Of course this is not the best way, but it is done). I think you should figure about 7 per cent profit on the man's investment. His tools would cost about \$500; his team \$250, etc. I think I have given you about the necessary data for a fair estimate. I have figured it myself but desire more competent authority than my own.—O. L. L., Modesto.

[Answered by E. C. Voorhies, University Farm, Davis.]

[I would like it clearly understood that I am not setting down the cost of butterfat as figured by myself or the University. On the basis of the querist's figures, my solution of the problem would be as follows]

Stock and Equipment:
20 acres of alfalfa at \$300 per acre \$6,000.00
15 cows at \$125 each 1,875.00
Implements 500.00
One team of horses 250.00
One bull 250.00

A total investment of \$8,875.00
Yearly Expense:
7 per cent on \$8,875 \$ 821.25
Water and land tax at \$4.00 per acre 80.00
Salary of the farmer 1,000.00
Depreciation on horses, implements, and bull at 20 per cent 200.00
Depreciation on cows at 5 per cent 93.75

Making a total yearly expense of \$1,995.00
Income Other than Butterfat:
15 calves at \$8.00 \$ 120.00
1200 cwt. of skim milk at 25c per cwt. 300.00

Making a total income other than butterfat \$ 420.00

The \$1995 minus the \$420 will leave \$1,575, the cost of producing 4500 pounds of butterfat. This will make the cost of lb. of fat 35c.

I would like to call attention to certain facts in these figures which I do not think are correct, and would have to be changed somewhat. There has been nothing allowed for depreciation on the buildings. I am allowing rather a low figure for the depreciation of cows also. Five per cent probably would be all right theoretically, but I am not allowing anything for the loss of a cow now and then, which would amount to a considerable sum of money. Neither are we allowing anything for veterinary services and miscellaneous items which often come up, especially on a dairy farm. The figure, \$8 for each calf is, if anything, high, and although 25c. per cwt. for skim milk is a fair price, still a good many people figure only 20c. If anything the cost of one pound of fat, according to the figures given by the querist, is low.]

All this spring's pigs in all the litters raised at Winona Ranch that have yet reached the age of four months have averaged at that age 99.5 lbs. per pig, counting all pigs raised in all litters. The Laurel Champion litters out of Miss L. 2nd, Masters Lady Premier 5th, and Princess Royal S. averaged 110.6, 101.4, and 101.1 per pig at this age.

"On July 1, 1915, there was a total of 211 cow-testing associations in U. S.," is a quotation from a Dairy Handbook being distributed by the De Laval Co. of San Francisco. It



Don't Delay buying a DE LAVAL SEPARATOR a single day longer

IF YOU ARE SELLING CREAM or making butter and have no separator or are using an inferior machine, you are wasting cream every day you delay the purchase of a De Laval.

THERE CAN BE ONLY TWO real reasons for putting off buying a De Laval; either you do not really appreciate how great your loss in dollars and cents actually is, or else you do not believe the De Laval Cream Separator will make the savings claimed for it.

IN EITHER CASE THERE IS one conclusive answer: "Let the local De Laval agent set up a machine for you on your

own place and SEE FOR YOURSELF what the De Laval will do."

YOU HAVE NOTHING TO RISK and more than a million other cow owners who have made this test have found they had much to gain.

YOU CAN'T AFFORD TO WAIT till next spring or even for another month. Let the De Laval start saving cream for your RIGHT NOW and it will earn its cost by spring.

SEE THE NEAREST DE LAVAL agent at ONCE or if you do not know him write us direct for any desired information.

DE LAVAL DAIRY SUPPLY CO.

LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST.
We specialize in Alpha Gasoline and Distillate Engines, Ideal Feed Silos, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Send for special catalog.

SAN FRANCISCO.

SEATTLE

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER.

REMCO Air-Dried Redwood

PIPE For Irrigation—Water Supply—Power. Sizes 2 inches to 12 feet. For pressures up to 400 feet head. Guaranteed for 100 per cent overload.

Costs less than any other pipe of equal capacity, efficiency and endurance.

Not affected by worms or insects, acid or alkaline soils, electrolysis or roots.

Withstands extremes of heat and cold, dryness and moisture.

Outlasts any pipe except cast iron, and maintains its full flow capacity to the end.

TANKS for Water—Wine—Vinegar—Oil—Acids—Solutions. For Storage—Mixing—Fermenting—Pickling—Leaching. In all shapes and sizes—500 gals. to 500,000 gals.

SILOS for Dairymen—Stockmen—Feeders. Sizes, 25 tons to 300 tons. THE BEST.

ALL REMCO PRODUCTS are manufactured to your order from CLEAR, AIR-DRIED REDWOOD.

Selected from our stock of forty million feet.

Their outstanding features are HIGHEST GRADE MATERIAL—MECHANICAL PERFECTION—SUPERIOR EFFICIENCY and MAXIMUM DURABILITY. Catalog sent on request.

Redwood Manufacturers' Co.

1608 HOBART BUILDING,

SAN FRANCISCO.

BIG TYPE POLAND CHINAS

Glits from Weanlings to one year old. Bred or open. Boars from weanlings to 8 months.

THE BROWNING STOCK FARM

W. H. BROWNING, PROP.

WOODLAND, CAL.

is full of articles written by the most competent authorities on all phases of dairying, including 44 sample balanced rations.

R. F. Guerlin of Visalia will consign several fine A. R. O. cows to the annual sale of the California Holstein Breeders' Ass'n at Hanford.

Culling Out the Purebred Scrub.

[Written for Pacific Rural Press.]

Anyone who understands the purebred livestock industry, realizes that notwithstanding the admirable efforts of the record associations, the reputation of each breed rests entirely with the individual breeders; and be it said in their favor, breeders very seldom knowingly do anything to damage their breed.

This is not perhaps due to breeders as a whole being more straightforward than other classes of farmers, but to the fact that experience has shown that the man who breeds purebreds must always deal squarely with the public if he values his business reputation.

And so we find successful breeders going to extreme lengths to satisfy a customer, often losing money by so doing, but standing it cheerfully rather than have any shadow of suspicion cast on their reputation.

As most sale controversies start over differences in opinion concerning the animals sold, those with selling experience invariably are free users of the knife on young stock not representative of the breed.

That much harm to the purebred industry is accomplished by a lack of knowledge of what are representative animals is shown by the question of a new hog breeder recently in the writer's presence. He said: "What I need is to have somebody come out to the ranch and show me where my hogs are defective. I would welcome such advice, for while I have raised hogs all my life I confess an ignorance in selecting breeding stock that is good enough for herd sires. I don't expect 100 per cent of good ones in every litter, but I'm blamed if I can tell which ones to use the knife on."

Probably nine-tenths of all the poor specimens that are sold can be directly attributed to breeders who have not realized, as has this man, their shortcomings in knowing which animals to use the knife on, acting under the misapprehension that a registration certificate is sufficient evidence of an animal's worth.

Experience, of course, teaches them otherwise; but it is expensive experience, inasmuch as the buyers of such animals as should have gone into the fattening pens are dissatisfied customers; which, as we have said, successful breeders go to great lengths to prevent.

When entering the breeding fraternity, every man should understand that a certain percentage of his purebreds will be purebred scrubs. What percentage he should expect to come under this heading will depend to a large extent upon the care he has used in selecting his foundation herd. One prominent hog breeder of our acquaintance has been working to diminish his percentage of purebred scrubs for eight years; and

by careful selection has reduced it from 25 to 12 per cent. It would be interesting and decidedly advantageous to the new breeder as well as to the industry if those having had experience would let the public in general know how many males out of every hundred they deem suitable for breeding purposes.

VACCINATING YOUR HOGS.

To the Editor: Is there any law or any good reason to prevent an ordinarily intelligent hog grower from vaccinating his own hogs for cholera?—Sub.

[L. B. Green of the Interstate Vaccine Co. says:

"There is nothing complicated or hard to do about vaccinating hogs. With the graduated syringes, the amount of serum can be accurately ascertained and the injection is a trifling operation. Any apt person can do the work.

"To drive out this dreaded disease, we are believers in two things—vaccination and sanitation. One without the other does not reach far enough, but where both are applied, success crowns the man handling hogs.

"Commercial plants having Government licenses, since the beginning of 1914, have been producing serum which is a positive preventive of hog cholera."

Dr. H. B. Wintringham of Petaluma says:

"It is all right for such a person to give the serum-alone treatment. It is very dangerous for such a person to give the simultaneous treatment; for unless he is trained in the production of this vaccine and the various processes by which it gives immunity, it is more than probable that such a person will spread cholera all over the community. There is no law to prevent his giving it, however."

We would say in addition that it would be permissible. If you are willing to learn the nature and dangers of vaccination, scrub and disinfect the hogs' skin where injected, quarantine vaccinated hogs, and disinfect hands, clothes, and shoes after handling such animals.]

CONCRETE BARN FOR IMPORTED GUERNSEYS.

[Written for Pacific Rural Press by Bert S. Wolf.]

Another purebred Guernsey establishment is replacing a grade-cow dairy near Napa. B. E. Nixon, son of former Senator Nixon of Nevada, recently bought the big ranch and had installed 40 purebreds the month previous to this writing. All had been imported from Guernsey Isle. Milk from these, tested at Davis University Farm, averaged 4.5 per cent fat.

Mr. Nixon expects to increase the herd to 250. He is building one of the finest concrete barns in the county or State, a special feature being the floor of pressed cork brick. It is 161x37½ feet, built for 80 cows. A five-ton ice machine is to keep milk and cream cool. He is raising Indian corn for the large silo already erected, and there are 100 acres of pasture. Visitors are not allowed in the barn for an hour before and after milking; and attendants must take a shower bath before each milking.

When hogging off grain, keep a self-feeder full of tankage.

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The Quality Sale

150 HEAD OF HIGH CLASS HOLSTEINS

COMPLETE DISPERSION

of the Famous

Rio Vista Holstein Farm Herd

and a consignment of wonderfully bred cattle of the
HIGHEST TYPE AND QUALITY
from the well-known herd of

McALISTER & SONS

RIVERA, CALIFORNIA.

Tuesday and Wednesday, Sept. 19th & 20th

All cattle will be tuberculin tested 10 days prior to the sale by Dr. Ward B. Rowland, Asst. State Vet., and individual certificates will be furnished with each animal. This is the best guarantee anyone can give you. Therefore, don't fail to attend the

GREATEST SALE EVER HELD IN THE WEST

For full information and catalog write,

COL. BEN A. RHOADES
AUCTIONEER.

1505 South Main St.,

Los Angeles, Calif.

King Segis Blood

is the Greatest in the Breed.

GET STARTED RIGHT

by attending

FRANK M. HELM'S

First Annual Sale

Fresno, California

Tuesday, September 12th, 1916

75 HIGH-CLASS HOLSTEINS

(All tuberculin tested 10 days prior to sale and individual certificates furnished with each animal.)

And select Cows and Heifers bred to either

CROWN PRINCE SEGIS,

a son of King Segis, out of a 31,223-lb. daughter of Korndyke Queen De Kol's Prince,

—or—

PRINCE BEAUTY PIETERTJE SEGIS,

out of a 31,87-lb. daughter of King Segis and sired by Beauty Pietertje Prince (sire of Prince Gelsche Walker).

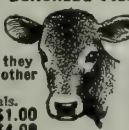
Note: There are several daughters of these two great sires in the sale.

For full information and catalog address

COL. BEN A. RHOADES,
Auctioneer,
Los Angeles, Calif.

FRANK M. HELM,
Fresno, Calif.

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by CUTTER'S BLACKLEG PILLS
Low-priced,
fresh, reliable;
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men, because they
protect where other
vaccines fail.
Write for booklet and testimonials.
10-dose pkg. Blackleg Pills, \$1.00
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Use any injector, but Cutter's simplest and strongest.
The superiority of Cutter products is due to over 15
years of specializing in VACCINES AND SERUMS
ONLY. INSIST ON CUTTER'S. If unobtainable,
order direct.
The Cutter Laboratory, Berkeley, California



With the Live Stock Men.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

DAIRYING AND DAIRYMEN.

W. J. Hackett of Ceres will show eight Jerseys at the State Fair.

The Madera Co-operative Creamery sold out Aug. 5 to K. H. Mulder of Cottonwood for \$10,000.

G. Outland of Modesto reports twin Holstein heifer calves from Bosma of Riverside by Hermania Ignaro.

The Carpenter Cheese Co. of Salida claims the largest daily production (2500 pounds) of any cheese plant on the coast.

The McClure Cattle Co. of Glendale, Ariz., shipped two cars of high-grade Holsteins to Arizona from Modesto Aug. 11.

E. E. Freeman of Modesto reports the sale of three registered Holstein bulls to Phoenix, Arizona. He says Pacific Rural Press did it for him.

The Oakdale creamery has completed an addition to buildings and equipment, so they think they can handle three tons of butter per day.

The Merced County Cow Testing Ass'n has been organized by business men of Merced who expect to canvas the dairymen for membership.

Queen Piebe Mercedes, owned in Minnesota, has broken the record for fat production in the junior four-year class by producing in 365 days 30,230.2 pounds milk.

W. Lloyd Merrill of Colusa has bought the bull Sir John Ormsby from B. D. Scott of Lemoore. This bull is a grandson of Duchess Skylark Ormsby, the champion fat producer.

Butter in storage reported by 111 firms in the United States Aug. 1 totaled 87,036,029 pounds. Holdings of 101 of these were 71,349,813 pounds as compared with 68,578,320 a year ago.

Over 500 registered Holstein cattle will be sold at the various auction sales to be held in the State during the next two months. This number is less than that of last year but last year's sales were spread over a longer period.

According to Manager Murphy of the Dairymen's Co-Operative Creamery at Tulare, over 90 per cent of their patrons are now cooling their cream and nothing but sweet cream is being received, even though the weather is very trying.

Practically no butter is being manufactured in Los Angeles, except a small amount from the sweet milk and cream "come backs." All of the dairies tributary to that market are either producing whole milk or cream for retail consumption.

Alfalfa hay is selling at \$15 to \$16 baled, in Southern California dairy districts. That section is drawing heavily upon supplies in other

parts of the State, and nowhere from Fresno south does one see much hay being held by the grower.

According to S. A. W. Carver of Los Angeles, there have been approximately 50 silos erected in Southern California, exclusive of Imperial Valley, during the past two years. He states that fully 20 per cent of the land in the Artesia district is planted to corn this year.

The City Board of Health of Los Angeles has recently put into effect their milk scoring system, whereby the milk from every dairy supplying that city with milk is scored and the score published in the daily papers, thus acquainting the consumer with the good and poor brands of milk.

Walter Mitchell of Visalia will consign a few of his choice Holstein cows to the California Holstein Breeders' annual sale at Hanford. Mr. Mitchell has been breeding registered cattle for a number of years, but this is the first time he has participated in any of the Holstein sales. During the past year he has made several very creditable A. R. O. records.

For the first month of the new Orland Cow Testing Ass'n, the following are the best records:

Owner	Milk per day	% fat	Lbs. fat per day
A. H. Bangham	45.5	4.5	2.04
J. O. Bentz	35.2	5.3	1.86
M. S. Holt	44.3	4.1	1.82
C. W. Curtis	47.3	3.8	1.79
J. B. Hann	44.5	3.9	1.73
G. J. Hiller	37.3	4.5	1.67
J. M. Christianson	37.0	4.3	1.59
W. M. Downen	31.3	5.0	1.56

SWINE BREEDERS AND STOCK.

Elmer Lamb of Ceres will exhibit 18 purebred Duroc-Jerseys at the State Fair.

In the Carruthers Sale Steybrae Laurel 2nd was bought by the Butte City Ranch instead of by Mark Regua as noted in our report.

The Stanislaus Poland-China Ass'n invites the Kings County Poland-China Ass'n to attend the sale at the Livestock Show and Exposition at Modesto.

Biddle and Russell of Hanford bought the 12 carloads of 1000 hogs mentioned in last week's issue as having been shipped by one firm to one packing company (the Western Meat Co.) one day last week. They paid 7 and 7 1/2 cents f. o. b.

A Los Angeles packing house has recently sent a representative to Tulare county to buy hogs direct from the farmers, instead of through a commission buyer as has been done in the past. Practically all of the hogs in southern California are now being bought by the packers direct.

Peters, Lamson and Walker received their last shipment of regis-

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2 1/2 c per word.

SWINE.

BILLIKIN HERD OF IMPROVED CHESTER WHITES—The kind that makes money. Purebred—registered—cholera immune. An extra fine lot of weaned pigs—both sexes—representing the best and most popular blood lines this breed produces. Five different sires used. Can mate up not akin. Quality combined with size. Rapid growing—early maturing. A few nice fall gilts that will be bred and ready to ship in September. Write for prices and circular. C. B. Cunningham, Mills, Sacramento County, Calif.

YOUNG POLAND CHINAS, LARGE TYPE—Boar IBA Wonder won first and Reserve Championship P. I. E., weighing 730 pounds under 2 years and in breeding condition. 60-day special—fine young sows bred to IBA Wonder at very low prices; also weanling pigs, either sex. Satisfaction, or money refunded. W. A. Young, Lodi, Cal.

REGISTERED DUROC-JERSEYS—All ages. We have produced hogs weighing 240 lbs. at 7 months, at a cost of 3 1-10 cents per pound, including pasture, grain and upkeep of sow. If you want some of the kind it pays to raise, we would suggest that you order immediately, as our spring stock is going rapidly. Haden Smith, Woodland, Route No. 1, Box 84D.

BERKSHIRE BOAR—Son of Star Value, Value Bachelor 137,554. Dam Lady Bachelor 5th. Six years old, weighs 700 lbs. in light breeding condition. Active. Excellent sire, \$65. Registered pigs sired by above and Wills Masterpiece 210,102, \$15. Trios, \$40. W. H. Waugh, Riverside, Cal.

REGISTERED BERKSHIRES—World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapeville Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

NOW IS THE TIME to breed for Fall litters. I have a choice lot of young boars ready for immediate service. Also bred sows, bred gilts, weanlings of both sexes. Attractive prices will be quoted for quick sale. Geo. A. Smith, Corcoran, Cal.

BERKSHIRES—Herd headed by Artful Masterpiece and Improver B, Grand Champion at California State Fair, 1912 and 1913 respectively. Open sows, service boars and weanlings for sale. Oak Grove Dairy Farm, Box 1, Woodland.

DUROCS from River Bend Farm, St. Helena, Cal., are large type, smooth, rangy, with fine backs and deep cherry color. We sell only those we'd like to keep in our herd. Don't write us if you want cheap stock.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

FOR SALE—Registered Hampshire Hogs—P. I. E. stock. 1 sow, 2 years old; 1 sow, 14 months old; 1 boar, 16 months old; 5 females and 1 male, 2 months old. F. J. Costello, Los Altos, Cal.

HAMPSHIRE SWINE—Fancy belted boars and sows. Good ones, \$25 and \$20. Better ones up to \$45. All registered. Ben F. Thorpe, Manager, Canfield Estate Ranches, Bonaparte, Cal.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

LARGE, QUICK MATURING registered Berkshires—Both sexes, \$10 each for weanlings. Older ones at farmer's prices. J. H. Bombberger, Modesto, Cal.

REGISTERED PUREBRED BERKSHIRE PIGS—Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

IMPERIAL STOCK FARM BERKSHIRES—Registered stock of all ages. Prices and description on application. E. J. Merrill & Son, Moraga Hill.

LAKEVIEW STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

FOR SALE—150 head stock hogs. Will weigh from 75 lbs. to 160 lbs. Good, thrifty condition. A. H. Armistead, Wheatland, Cal.

REGISTERED BERKSHIRES—For sale, bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

POLAND CHINAS—Young stock; either sex. Write for pedigree. Reasonable prices. Edw. A. Hall, Watsonville, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Linn, Linview, Route A, Modesto, Cal.

STOCK HOGS FOR SALE—Good bunch, 85 head—50 to 175 lbs. Berkshire foundation. M. D. Keyser, Brentwood.

FOR SALE—Thoroughbred Poland Boar six months old. Weight 185. Perfect type. R. T. Brown, Burbank.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Rondier & Son, Napa.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. McKesell, Manteca.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

POLAND CHINA HOGS FOR SALE—Registration papers furnished free. C. A. Cooley, Durham, Cal.

REGISTERED BERKSHIRES—Weanling pigs, \$10 each. G. A. Casey, R. 7, San Jose.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

POLAND CHINA HOGS—Registered. Cholera immune. R. J. Miller, Llewellyn Ranch, Lathrop.

REGISTERED IMPROVED CHESTER WHITES—Grizzly Bear Ranch, East Auburn, Cal.

BERKSHIRES—Carruthers Farms, Mayfield, Cal. Second annual sale, August 2, 1917.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED POLAND CHINAS. Young stock for sale. J. H. Cook, Paradise, Cal.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

REGISTERED BERKSHIRE PIGS—Write or call Greenwood Ranch, Brentwood, Cal.

HAMPSHIRE—Registered stock for pride and profit. Frank Brown, Burbank.

REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED POLAND-CHINAS and Duroc Jerseys. H. F. Harrold, Orland.

REGISTERED DUROC JERSEY SWINE—Frederick M. Johnson, Napa, Cal.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROCS—All ages. Either sex. W. A. Pack, Hollister, Cal.

REGISTERED DUROCS from best Eastern blood lines. S. S. Southworth, Napa.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

CHAS. GOODMAN—Breeder of high-class Berkshire Swine. Williams, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

REGISTERED O. I. C. SWINE—C. D. CONWAY, Rinon, Cal.

REGISTERED DUROCS—H. N. Leininger, R. D. 4, Chico, Cal.

REGISTERED POLAND-CHINA HOGS—J. W. Wakefield, Acampo.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Ramboulets and American Merinos, both sexes. Also Red Faced cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

THE BULLARD FLOCK RAMBOULETS—Founded 1870. Largest Merinos on Pacific Coast. The Bullard Company, Woodland, Cal.

FOR SALE—Shropshire bucks, yearlings and lambs. Individuals to carlots. Purebred but not registered. J. E. Bloom, Dixon.

KAUPKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

BREEDER OF MERINO SHEEP—Rams for sale. J. Bidegaray, Fresno, Cal.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshires.

CHAS. KIMBLE—Breeder and Importer of Ramboulets. Hanford, Cal.

BEEF CATTLE.

FAIR OAKS RANCH, Ukiah, Cal.—Young registered Shorthorn bulls for sale. Sired by Landseer 379318, grandson of Imported Villager 295884.

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Paines Ranch Co., 320 Sharon Bldg., San Francisco.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Eureka, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

GEORGE WATTS—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

DAIRY CATTLE.

GUERNSEY BULL CALVES from Grand Champion Bull. Also Hampshire Swine, both sexes, from Grand Champion 700-lb. boar and Grand and Junior Champion Sow, Bella Vista Herd, J. W. Henderson, 1st National Bank Bldg., Berkeley, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

VENADERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly record. Guy H. Miller, Route 1, Modesto, Cal.

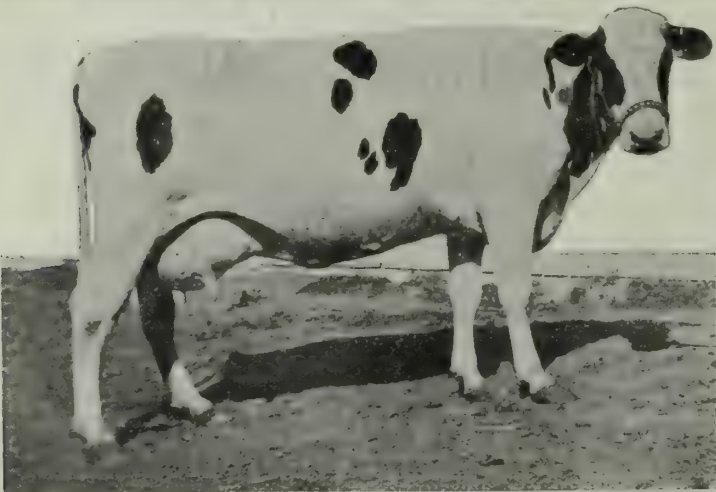
REGISTERED HOLSTEINS—Colantha Johanna Lad and Aralia De Kol breeding. Young stock for sale from A. R. O. cows. Lester A. Driver, Nicolaus, Cal.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3 lbs. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

HOLSTEIN BULLS—Well marked, large straight individuals. Tuberculin tested \$1.00 up. Packwood Farm Herd, W. F. Mitchell, Visalia.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

FOR SALE OR WILL RENT on very easy terms—41 head of dairy cows, 22 being 2 and 3-year-old Holsteins, balance older cows, mostly Durham. Also very fine registered Holstein Bull. James G. Mee, St. Helena, Cal.



FOREST VIEW WAYNE KORNDYKE,

A Senior Three-year-old with a Record of 27.93 Pounds Butter in 7 days. She is to be Sold at the Dispersion Sale of the Rio Vista Holstein Farm Herd, Rivers, Sept. 19 and 20.

DAIRY CATTLE.

REGISTERED HOLSTEINS—Have a few Bulls from El Prado Wayne Colantha, whose dams and sire's dams average per cent fat at 4 years is 5.01. See my stock at the State Fair. J. W. Benoit, Route C. Modesto, Cal.

REGISTERED HOLSTEINS—Sired by King Korndyke Hengerveld Ormsby 53822. Dam Pietertje Maid Ormsby 78051, world's record when made 35.56. Send for pedigrees. Geo. Kounias, Modesto, Cal.

REGISTERED HOLSTEIN BULL CALVES—Sired by Lorena Korndyke Alcarta, whose dam made 29.75 pounds butter fat in seven days as a four-year-old. J. M. Campbell, Escalon, Cal.

REGISTERED HOLSTEIN BULL CALVES—Grandsons of Dutchland Governor Sir Colantha. Write or see them. H. J. Reamer, Haywards, Cal.

REGISTERED HOLSTEINS—32 high-grade Holstein heifers coming fresh this Fall for sale. E. E. Freeman, Route B. Modesto, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs. butter as two-year-olds. A. A. Jenkins, Tulare.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

TWENTY-EIGHT high grade yearling and two-year-old Holstein heifers for sale; some bred. K. W. Abbott, Minitas, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios R 2 Modesto.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE and Berkshire pigs. Whittier State School, Whittier, Cal.

WILLOWMOOR AYRSHIRES—Great records; economy. 300 head in herd. J. W. Chico, Redmond, Wash.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Susan, Cal.

YOUNG REGISTERED GUERNSEY BULL for sale cheap. Guaranteed sound. Kenneth Evans, Gilroy, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland R 2 Tulare.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS Corp., Importers and Breeders, Woodland, Cal.

THOROUGHBRED DUROC-JERSEYS to farrow in August. Dr. T. A. Guthrie, Woodland, Cal.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

FOR SALE—Registered Holstein Bull, 2½ years old. Mrs. B. B. Fowler, R. 2, Box 99, Lodi.

BREEDERS OF A. R. O. Holstein-Friesian cattle exclusively. Dirk Dairy Farm, Lemoore.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

YOUNG REGISTERED JERSEY BULL CALVES at reasonable prices. O. J. Ames, Oakdale.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chino, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

LINWOOD FARM—Registered Holsteins and Imported Guernseys. Santa Cruz, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnyside Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B. Modesto, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto, Cal.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes, McCoy, Oregon.

FRESH JERSEY MILK COWS for sale. E. M. Locke, Lockeford, Cal.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Calif.

HORSES AND MULES.

REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders, Easton & Ward, Proprietors, Burlingame, Cal.

DOGS.

AN OPPORTUNITY to purchase thoroughbred Collies. Having a greater number of thoroughbred Scotch Collies than I can accommodate, am willing to sell a few one year and older at a great sacrifice. The dogs are all bred by the noted prize-winners of the BROWDALE KENNELS, Redwood City.

MISCELLANEOUS.

CROLEY'S CALF FEED with skim milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

D. O. LIVELY, 216 Hobart Building, San Francisco, buys and sells livestock—any kind—any quantity.

DUROCS AND GUERNSEY BULL CALVES Gilt bred to 900-lb. boar. Ed. E. Johnson, Turlock, Cal.

BEEKEEPERS' SUPPLIES

Everything for the Honey-Bee.

Catalogue sent free on request.

THE A. I. ROOT CO.,

245 Mission Street, San Francisco, Calif.

tered Durocs August 11 from Iowa. These, as well as several other outstanding young animals, were purchased by Mr. Walker while on a recent trip East where he selected from the best breeders' herds in the country.

BEEF, SHEEP, HORSES.

A shipment of 2000 lambs left Oregon for San Francisco Aug. 10.

The Whitehall Estates will show Percherons at the State Fair.

Bear have driven Ralph Friend and his sheep from Bond Canyon above Porterville.

A bunch of Hot Springs people, including Mr. Hockett, Mrs. Helmerigh, Will Atkins, Miguel Gill, and J. F. Moody shipped about 300 cattle to Terra Bella this week.

That the demand for purebred Angus bulls is increasing in California is indicated by the sale of over 30 such bulls during the past season by the Tagus ranch of Tulare.

Joseph Corey and John Burrell have recently shipped three carloads of cavalry and artillery horses and mules from Hanford for European battlefields.

Miss Frances Howard has made arrangements to trade \$80,000 worth of stock in the Howard Cattle Co. for a ranch near Merced owned by her brother, now of Boston.

There are about 40,000 beef cattle in Imperial Valley at this time according to those familiar with the situation there. Feed is short on account of the recent ditch troubles.

Thirty-six carloads of sheep were recently expected in San Francisco from Ed Waltz and H. H. Haile of Stirling City. Sixteen carloads were shipped last week.

Over 1000 cows are now entered in the Kern County Cow Testing Association; and while the association was but recently organized members are finding it of decided value.

GENERAL LIVESTOCK.

Riverside Fair Oct. 10-14.

Humboldt County Fair, Ferndale, Sept. 5-9.

The Jerseydale Fair (Mariposa county) will be held Sept. 8-11.

Fred Maddalena of Petaluma recently bought a 170-acre ranch near Cloverdale and will engage in livestock.

Residents of South San Joaquin irrigation district are combining in an effort to hold a big community fair at Ripon, Sept. 15 and 16.

Secretary Dakin anticipates the largest number of exhibits and best all round fair for Pleasanton next month that has ever been held by the Alameda County Fair Association.

FAIRS AND GENERAL LIVESTOCK

Fresno county livestock was reported Aug. 1 by Livestock Inspector J. F. McKenna to be generally healthy except for hog cholera.

R. L. Foster has leased the 400-acre cattle-sheep-and-hog ranch known as the Mary Wilson place near Modesto.

United States is reported to be the greatest meat eating and meat producing nation in the world. In the fiscal year 1914-15 we imported more beef and mutton than we exported.

At a recent meeting of the Napa County Livestock Ass'n, State Controller J. S. Chambers said that the State owns nearly \$300,000 worth of livestock besides the University Farm Herds.

President T. W. Fowler of the Merced County Fair Ass'n has appointed W. H. Robinson as the committee on by-laws and organization. Canvas will house the exhibits this year Sept. 19-23, and double last year's space will be available.

According to County Livestock Inspector Griffith of Kings county there have been no cholera outbreaks for over two months in that county and at the present time there is no contagious disease known in the herds or flocks of the county.



"Jackson MADE"

Write for Catalog No. 47 F

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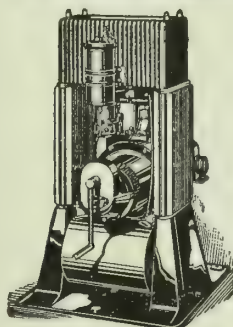
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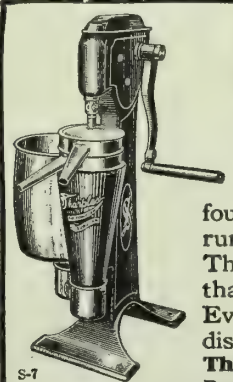
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Direct to Consumer

Alfalfa, Oat and Barley Hay; Oats, Barley, Egyptian Corn, Feterita. Also Honey, Beans, Poultry and Eggs. What do you need?

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AUCTIONEER

(Phone Farmers 394.)

Will conduct sales anywhere in California.

Purebred livestock sales given special attention.

For dates and terms address

T. J. GILKERSON, Lemoore, Cal.

Reports from 13 States regarding 2,640 unsound stallions standing for public service, showed 35 per cent of them with sidebone, 12 per cent roaring, 11 per cent with bone spavin, 7 per cent with defective or curby hocks, 6 per cent moonblindness, and the rest of more or less serious troubles.

About \$100,000 is reported to have been spent in Tehama county to exterminate coyotes, but sheepmen are still worried and several are offering extra bounties. Among these are T. H. Ramsey, the Cone ranch, Cone & Ward Sheep Co., and L. L. McCoy.

THICK, SWOLLEN GLANDS

that make a horse Wheeze, Roar, have Thick Wind or Choke-down, can be reduced with

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also other Bunches or Swellings. No blister, no hair gone, and horse kept at work. Economical—only a few drops required at an application. \$2 per bottle delivered. Book 3 M free. ABSORBINE, JR., the antiseptic liniment for mankind, reduces Cysts, Wens, Painful, Swollen Veins and Ulcers. \$1 and \$2 a bottle at dealers or delivered. Book "Evidence" free. W. F. YOUNG, P.D.F., 86 Temple St., Springfield, Mass.

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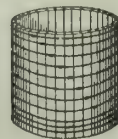
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Thirty-five years in this business in Stockton.—A 500-gallon tank, \$8.00. A tank 6 ft. x 2½ ft., \$7.50. Other tanks equally cheap. I deal direct with the consumer, saving 10% to 25%. All sizes in stock. Clear dry redwood direct from the mill. Write for price today.

STOCKTON, CAL.

The Latest on Infectious Abortion.

[By Ward Giltner and E. T. Hallman of Michigan Agricultural College.]

A common way in which the disease is introduced into the herd is through the purchase of an affected female animal.

Food or water soiled by the discharges of an affected animal may convey the disease to healthy animals.

The bull may convey the infection from one cow to another.

Not all abortions are known to be infectious.

There are no known symptoms by which we can always differentiate between infectious abortion and abortion due to other causes.

Through a blood examination we are apparently able to determine whether the abortus bacillus has affected the animals of a herd.

The blood examination will not determine whether an animal will abort, as not all affected animals do abort.

Sterility frequently follows abortion. If this can be prevented by local treatment subsequent pregnancies will usually terminate normally.

In the hands of an experienced operator sterility may yield to special treatment.

An animal may harbor the infection for years without aborting. Such animals are dangerous to susceptible animals in the herd.

We have not been able uniformly to prevent abortion by the use of bacterial vaccines.

Carbolic acid is the principal constituent of some of the most widely advertised so-called abortion cures, but our experience with carbolic

acid has not been entirely satisfactory.

Methylene blue has been recommended. We have not had sufficient experience with this drug to justify us in recommending it, nor does our knowledge warrant its recommendation.

The plan we suggest is one of local treatment of the affected cow, disinfection, and sanitation.

Parturient cows in infected herds, whether aborting or not, should be isolated from the herd and kept isolated until all discharges have ceased.

The afterbirth and litter contaminated with the discharges should be burned.

The cow should receive irrigations of some mild non-toxic antiseptic until the discharges have ceased.

The external parts of the cow should be cleaned daily.

In case of abortion the animal should not be bred until all discharges have ceased.

At the time of service the sheath of bull should be irrigated and the under surface of the bull's abdomen should be cleaned before and after service.

A 1 to 1000 solution of potassium permanganate, $\frac{1}{2}$ of 1 per cent compound solution of iodine, a $\frac{3}{4}$ of 1 per cent solution of compound solution of cresol, or sour whey may be used for uterine and vaginal injections.

Drastic or improper treatment of the genital organs of a cow is more injurious than no treatment at all.

fields, where most of the hay has already been cut owing to scarcity of water for irrigation during the summer. Here the cattle find good pasture for some time, after which they are put in sandy fields and fed chopped alfalfa hay in racks in the open, until the hill ranges are again green.

By this system of feeding and breeding the heifers are large enough at two years old or a little better to drop their first calves and not be stunted; and as before stated the steers are turned off at a profitable age.

HOG BUYERS' MARGIN.

To the Editor: What should be the price of hogs delivered at Winters when you quote them at $8\frac{1}{2}$ to $8\frac{3}{4}$ cents for 150-250 pound animals?—D. S., Winters.

[The buyer may rightly charge about 1 cent per pound for freight, shrinkage, commission, inspection, etc., according to a man in position to know.]

A cream separator speedometer concern investigating the need for such speedometers, found, in over 4,000 different cases, that 95 per cent of farmers turn their separators too slow. Some of them were losing over \$100 worth of cream per year.

Bleeding that can be stopped with dust or powder would soon stop anyhow. Clean the wounds and protect them, but do not keep washing them out if they are healing.

Creolin or zenoleum is recommended for the mange on horses.

KNOB HILL STOCK FARM Registered Big Type Poland Chinas : : :



SOME TYPICAL KNOR HILL BROOD SOWS.
(Large type, combined with high quality.)

Our herd is nominated in the California Poland China Futurity to be held in connection with the State Fair this fall. We have just imported and added to the herd some of the best blood of the East, including boars from W. J. Hather, Ord, Neb., and Peter Mouw, Orange City, Iowa. We are offering pigs of both sexes from prize-winning stock. Litters coming at all seasons and stock usually on hand to suit customers.

Come and see them, or write for what you want.

ALL STOCK REGISTERED. ALL BREEDING GUARANTEED.

A. M. HENRY, Prop. Farmington, Cal.



SANTA ANITA RANCHO

ANOAKIA BREEDING FARM



HOLSTEIN CATTLE The breeding herd of registered Holstein cattle at Santa Anita Rancho is made up of individuals selected strictly upon their merits as producers, high individual quality, and production and proven transmitting power of their ancestors. PRINCE GELSCHE WALKER, whose combination of breeding, individuality, and the production of his daughters stamp him as one of the greatest young sires of breed.

Females in the herd are making large official record as rapidly as they freshen, and the herd is being developed to become one of the largest groups of high producers in the West.

At present a few bull calves are offered for sale. These are straight, well-marked youngsters, bred right, and priced moderately.

BERKSHIRE HOGS The breeding herd of registered Berkshires has been carefully selected and represents the blood lines that are in the very first rank of the breed. The herd is headed by KINTYRE LAIRD, first prize junior yearling and reserve senior champion boar at Panama-Pacific Exposition. He is an unusually good type, and comes from a family noted for uniformity and prize-winning quality.

A few boar pigs are offered at this time.

POLAND-CHINA HOGS In founding the herd of registered Poland-Chinas at Santa Anita Rancho, the choicest individuals of the most noted prize-winning families in the West were drawn upon and for uniformity, desirable size and quality, the herd is unexcelled in the West. At the head of the herd is BAKER'S BOY, junior champion and reserve grand champion at P. P. I. E.

Anita M. Baldwin, W. H. TAYLOR, Superintendent.
Santa Anita, Cal.

IMPROVING AND FEEDING BEEF CATTLE.

[Written for Pacific Rural Press.]

It is an old but well-known theory that the best way to convince a man is to show him; and that is the most convincing argument in favor of purebred Hereford bulls that D. B. Harris of Minturn has to offer.

Mr. Harris manages the 4,000-acre Sierra Vista Ranch which supports about 300 range cattle besides a herd of purebred Herefords. A thousand acres of the ranch is also planted to grapes and a good portion to alfalfa and grain.

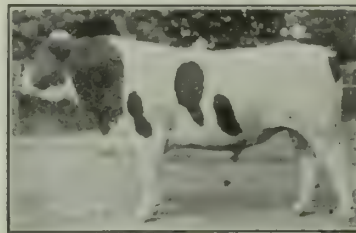
About 15 years ago Mr. Harris started to breed up a herd of Arizona range cows with Shorthorn bulls. In 12 years, he had succeeded in getting a steer that as a three-year-old would average around 1200 pounds.

Three years ago, however, he substituted his Shorthorn bulls for Herefords, and now instead of selling "threes" he sells "twos," the older "twos" this year averaging 1204 pounds while the younger ones averaged 1080. In other words his steers now average approximately the same weight on the same feed as two-year-olds as they formerly did as three-year-olds. They are yearly becoming higher grades.

Feed conditions on this ranch are somewhat different than on the ordinary cattle range, the practice being to run the beef cattle on hill ranges in the early spring when feed is plentiful there.

As soon as the green range gives out they are taken to the alfalfa

GRANDSONS OF TILLY ALCARTRA



Prince Alcartra Korndyke,
Best bred son of Tilly Alcartra.

At prices within reach of every Breeder and Dairyman.

When you buy a son of our herd sire, Prince Alcartra Korndyke, you get more than a Holstein bull with registration papers—you get a grandson of the world's greatest milk cow out of a high-testing A. R. O. dam. Our herd of females has been developed into one of the best in the State.

Our supply of these young sires is always limited, but we have a few now which we are offering at very reasonable prices.

Write us at once, or call and see the herd.

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Shropshires sired by rams imported by me from England.

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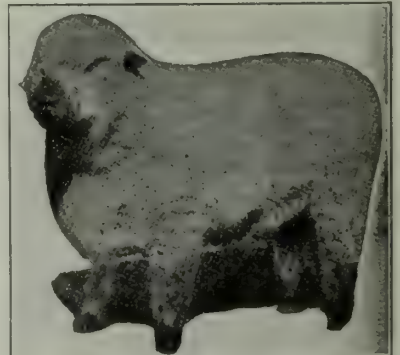
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HOPLAND STOCK FARM REGISTERED SHORTHORN BULLS

REGISTERED BERKSHIRES (Boars, Bred Sows and Glts)

HERD BOAR, ROYAL POINTER 2nd, 19702, First Prize

Senior Yearling, P. P. I. E.

3 REGISTERED HOLSTEIN BULLS from High-Testing Cows.
SAN FRANCISCO OFFICE, 1210 FLOOD BLDG.

Veterinary Queries and Answers.

[Answered by Dr. H. B. Wintringham, Petaluma, Cal.]

[Subscribers wishing an immediate reply should send money order for \$1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

HEIFER DOESN'T BREED.

To the Editor: I have a heifer 17 months old which has been served four times but is not with calf yet. She comes in heat regularly.—T. C. P., Escalon.

[Have an examination made of this animal.]

LUMP ON COW'S JAW.

To the Editor: Within 10 days a Holstein cow has developed a big lump under her jaw. It is getting bigger and tougher. Milk flow somewhat affected. Using liniment. Cow is on pasture—mouth looks clean and teeth healthy.—S. H., Kerman.

[Have this lump lanced.]

MULE HAS LUMPS.

To the Editor: Several years ago our mule had a lump on her front leg just where it leaves the body. It was claimed she had been kicked there when a colt. It has not troubled her any until last month. Now it has grown a lot and she is lame. She has a small lump on each hip, one on belly, and one on the leg below the first one. This last named one seems soft. She eats well and feels fine. We feed the best oat hay and corn fodder.—Mrs. S. T. L., Oroville.

[What color is this animal. Additional data will have to be given for a diagnosis.]

PIGS COUGH AND DIE.

To the Editor: My shoats cough, get the thumps, go down in flesh, and run at the nose. Every few days one dies.—F. C. M., Orland.

[This is swine plague. A vaccine is now marketed for this trouble.]

HEIFER GIVES BLOODY MILK.

To the Editor: Milk from a two-year heifer which freshened last February has a trace of blood occasionally; lately blood shows in bottom of pan when milk sours; sometimes a small clot of blood shows when milk is strained through a cloth. She milks a trifle hard.—P. S. K., San Jose.

[Give 2-dram doses twice daily potassium iodide dissolved in water for about two weeks.]

FRESH COW HAS NO MILK.

To the Editor: A cow had her second calf yesterday. Both seem well, but her bag is floppy; had only a pint of milk this morning. It is not sore. She gave plenty of milk last year.—R. D. L., Fresno.

[Give 2-dram doses twice daily pilocarpine hydrochloride and 2½ grains strychnine sulphate dissolved in one pint water. Divide this in three doses and give one dose every three hours.]

Sonoma-Marin Fair Livestock Exhibits.

[Written for Pacific Rural Press.]

Horse racing is the chief consideration at the Sonoma-Marin District Fair. The accommodations show it. It is not a farmers' fair. It may serve as a farmers' recreation period, for the attendance was good. The stalls for livestock were well filled, but that isn't much, numerically.

People have some fine livestock in that district, however, not to be far eclipsed by anything the State can show. And they were out with their best—what few showed.

Swine.—The most remarkable exhibit of livestock was the hogs. Poland Chinas and Chester Whites seemed lacking, but there were typical lots of Durocs, Yorkshires, Tamworths, Hampshires, and Berkshires. The latter were in greatest numbers and quality. F. A. Brush had 23 head including the P. P. I. E. grand champion sow Riverby Princess and two of her litter mates. These will be shown at the State Fair, the Princess for exhibition only. Reserve champion P. P. I. E. boar Ames Rival 102nd and third premium P. P. I. E. boar Charmers' Duke 77th were there, also Mayfield Rookwood 2nd, a beautiful young boar, and Mayfield Lady 2nd, bought at Carruthers' sale. This herd won first in all the six divisions and second also in the three boar divisions.

S. A. Brittain, E. C. Rand, and J. M. Robinson had smaller exhibits and each took some of the prizes. Mr. Brittain's sow and 8 pigs won first in that class, in competition with all breeds.

Durocs were shown by W. C. Chisholm of Windsor and R. Q. Wickham of Glen Ellen. The latter took three firsts out of the five awarded. He showed a typey but thin sow from which nine pigs were weaned just before bringing her to the Fair. She will be shown in better condition at the State Fair with several others. Mr. Wickham's sow and pigs won second. Mr. Chisholm's big Sandy Mac won first prize by his size, length, well built back and standing well on his toes. There were 15 Durocs in his exhibit.

Rosevale Ranch had a heavy Hampshire boar and a small sow with four big pigs.

S. A. Stetson of Santa Rosa, who has within a year or two begun to replace his mixed herd with purebred Tamworths, had sixteen head, including a sow with ten lively pigs.

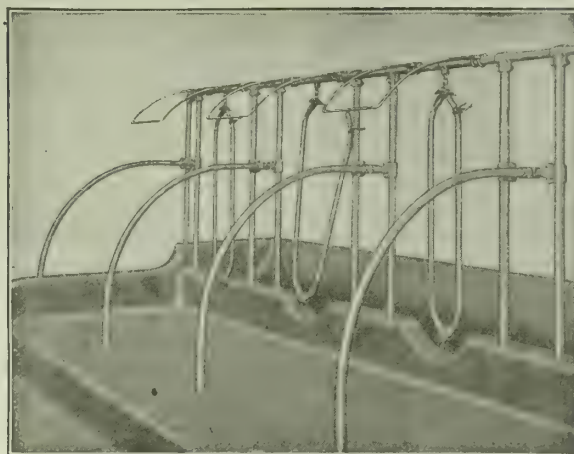
Lloyd and Tointon of Santa Rosa, who have sold practically the last of their common stock recently, were out with large Yorkshires of Riverina Farms breeding—a lot of smooth, clean, businesslike hogs of what Mr. Tointon believes is the coming type—primarily for bacon. Three of them, born last September, weighed 685 pounds last July. One of these is Riverina Admiral, a boar sired by Oak Grove Lad the 7th.

Draft horses made an attractive showing. Jack London had a large herd of mettlesome Shires including the aged stallion Neuadd Hillside 1st and three mares with their colts. He also won the premium for best two-horse draft team hitched up. Percherons were represented by Laos and Knor, spirited black stallions, and an iron gray mare Jeremie. The Rosevale ranch showed three jennets.

Beef cattle were represented only by a few Shorthorns and a bunch of 19 grade Hereford calves, 4 to 6 months old, the latter belonging to Al Chamberlin of Santa Rosa and being in nice uniform shape. Victor Piezzi had a big red aged Shorthorn bull which won 1st over a roan, while Jack London won 1st in Division 4, as well as several other prizes.

Dairy cattle at the Santa Rosa fair were mostly Jerseys and Ayrshires. T. B. Purvine of Petaluma made the biggest strongest showing of Jerseys, though M. A. Luce took several prizes. Mr. Purvine's Raleigh's Fairy Boy 4th and seven head, mostly of his blood, took most of the firsts. He will show two full herds at the State Fair including about 16 head. The LeBaron Estate of Valley Ford showed the aged Ayrshire bull Willowmoor Peter Pan 21st with four cows and three calves.

Goats were shown by L. A. Bridinger with Toggenbergs, D. H. Currier with American goats.



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Catalogs and Barn Plan Books Free.

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Duroc Jersey Pigs

Forty head of A No. 1 pigs, both sexes, January, February and March farrow, priced to sell, and to sell right now. All registered, well bred, well developed and guaranteed satisfactory, or money refunded. Conditions are such that we must materially reduce our herd. This is your opportunity. Details for a postal.

DIRK DAIRY FARM

Lemoore,

California.



San Ramon Shropshires WINNINGS P. P. I. E., 1915.

Aged Ram, First and Second. Yearling Ram, First. Ram Lamb, First, Second and Third. Champion Ram. Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of Sire, First. Pen of three Lambs, bred by Exhibitor, First and Fourth. Pen of Four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock, one year old, bred by Exhibitor, First. Flock under one year, First. Flock under one year, bred by Exhibitor, First. Produce of Ewe, First, Second and Third. Premier Championship for Breeder. Premier Championship for Exhibitor. A total, including American Shropshire Specials, of 15 Firsts, 9 Seconds, and 6 Championships.

Purebred Registered Rams and Ewes.
Individuals or Carload Lots.
BISHOP BROS., Agents. SAN RAMON.
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1300 YEARLING RAMS AND 1000 EWES.

These sheep are purebred, large and smooth, with heavy fleece of fine, long, staple, white wool. Individuals or carload lots.

Prices reasonable.

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DUROC JERSEYS

Headquarters for the best in Golden Model and Colonel breeding. These are the two leading families of the breed. Ranches as Holtville and Devore, San Bernardino County.

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San Francisco Cattle Loan Company

W. H. COFFINBERRY,

President and Manager.

South San Francisco, San Mateo

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We loan on Cattle and Sheep in

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Write for information.

RHOADES & RHOADES

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PUREBRED STOCK SALES A

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Sales Conducted in all parts of Calif.

Ben. A. Rhoades, Auctioneer.

1501-3-5 So. Main St., Los Angeles, Cal.

Raising Poultry for Profit

RAISING POULT FOR PROFIT.

[Written for Pacific Rural Press]

The feeding question bobs up serenely every once in a while and it is right that it should do so because the only way to solve any question is to discuss it with others and find out what they know about it.

Last week I attended the poultryman's meeting (by the way, we hold our meetings in the public library), and Mr. Schofield of Gardena spoke on the feeding problem, giving some valuable ideas. The High School at Gardena is now giving a series of poultry lectures; they have been experimenting a good deal along the line of feeding and Mr. Schofield gave us some of the results.

At present the poultrymen of Southern California are going through the ordeal of making changes; the association is trying to raise weight standard from 20 ounces to 22 ounces to the dozen, the same as the San Francisco market calls for. Heretofore, the Los Angeles market has accepted the 20-ounce eggs, but it has been decided to progress in both weight and quality. Now in order to increase the weight of eggs laid by the same flock of hens the feed must be studied from scientific experiments. Haphazard feeding will not do. A man must take time to watch his hens and time to prepare the right kind of feed.

Strictly speaking, I believe the poultrymen in the South do from necessity produce better quality eggs and more of them; but they have been too well satisfied as to size and weight, hence the Petaluma egg has been proving a thorn in the flesh, by getting a better price on our markets than the local egg. This state of things is to be changed and poultrymen must breed up flocks of hens that will lay larger eggs. Until that is done, the very best that can be done by feeding is to be the program.

"It has been proved", said Mr. Schofield, "that green barley makes a much heavier egg than any other green feed; not that I disparage lettuce, kale, or anything else, but that barley, being a dryer green feed, makes the heaviest egg."

Another point brought out was that 20 per cent protein is all that hens can stand as a regular diet and retain health and vigor. It was said that if a hen eats 2 ounces of a mixed mash, she can be fed 2 ounces of grain; but I do not agree with that—a hen needs more grain than mash or the gizzard will be idle too long.

Now here is a letter from one of our readers who wants to give his experience on the feeding question; this is a very useful and practical way of helping others. It comes from a man who is raising just a few chickens. I always say the fellow who is raising thousands has his own particular way of doing things and I let him alone, being satisfied to help the little man or the man with a small acreage and poultry plant.

Sprouted Grain on Cool Ground.—"Dear Madam: I take the Pacific Rural Press; and since wife and I

have been dabbling in poultry for some years, we are interested in your notes in the Press. We have too small a flock, and too little money at one time to buy feed in quantity and we can only get certain kinds of feed at this place. We have fed 'Sure Lay Mash,' but now are mixing our own mash. We have a little alfalfa patch and this we chop up and steam; our mash is equal parts bran and mids and one pound of fish meal to ten pounds of the mixture.

"It is so hot and dry here in summer that it is hard to keep poultry in condition, so I got on to a scheme. I wet a piece of ground, five or six feet in each yard, dug the ground up and put wheat in it. Every night I wet up the same place and put the wheat on it and dig it up in the morning, some of it sprouts, and you should see the stock, young and old, dig for that bit of green. They eat and roll in it doing just as they please.

Now for Results.—"January to July, 1915: About 25 hens laid 2076 eggs. Value here \$43.75. Average eggs per hen 83. Average value of eggs per hen, \$1.73. We expect our hens to drop in laying from June on. In June, 1915, the hens laid 231 eggs; in July 154 eggs." (My friend does not say but I infer that his hens in 1915 were fed just the ordinary dry feed with alfalfa for green, and that in July, 1916, the hens had the moistened ground and the wheat thrown in for them to scratch out and eat at their leisure.)

"January to July, 1916:—Average number of hens, 37. Number of eggs laid, 3707. Value here, \$74.94. Average per hen, 100. Value of eggs here, per hen \$2.02. In June, 1916, 29 hens and 549 eggs; in July 509. Most of the layers were pullets both years. I think that the wet ground and sprouted wheat, together with the cool moist mash at noon, has much to do with the increase in eggs and increase of profit.—C. E. S."

Now you see I am giving you these practical experiences hoping they will have the effect of hammering in what I have been preaching for the last eight years, namely, sprouted grain, no matter whether it is oats, barley, or wheat; and a cool moist place where the hens can enjoy life during the heat of the day.

Our friend's egg yield is not heavy; it is not even fair to what we should get; but the difference between an average of 83 eggs per hen, and 100 eggs per hen, is sufficient to prove that extra care is paid for by the hen in dollars and cents.

My friend says: "Besides eggs, we have sold over three hundred baby chicks. With our small flock, for seven months, we are ahead in cash receipts over all expenses, \$39.84 cents. The hens are now laying enough to pay their own feed bill and the feed bill for nearly a hundred young stock. I have wanted a greater variety of commercial feed, but they are too high and I have to content myself with the wheat and mash. Do you think it wise to use rolled barley and Egyptian corn?"

If I could not get any other feed than rolled barley I would, of course, feed it to chickens, but it would be soaked several hours to take the sting out of the beards. Gyp corn, if clean, is a splendid addition to the grain feed, but it is not nearly so strong in egg-making elements as is wheat; so in feeding it allow a little more; and then it is best to mix it for hens that have been used to wheat. Sudden changes are never safe. Make the change gradually. Unless the Gyp corn is cheaper I would not change at all, but just give a little in the scratch grain by way of variety. Hundreds of chickens die annually from eating rolled barley and when the barley is so much cheaper than other feed it really pays to feed it, loss or no loss. Soaking softens the beard and lessens the death rate, but at the price barley is now I say let the dealers keep it; and feed more wheat, Gyp corn, and oats.

The Petaluma Chamber of Commerce is reported as unanimously endorsing the proposed State association of poultrymen. They appointed a committee to get a promotion fund from the business men.

Poultry Breeders' Directory.

Rates in this directory, 5c per word each issue; or if carried weekly for one year, 2 1/2 c per word.

RAISING FALL CHICKS PAYS.—If you know how. Write for particulars and our circular and prices, for it will interest you. Barred Rocks, Rhode Island Reds, Black Minorcas, White, Brown Leghorns—any quantity. Our breeding stock is in fine condition, and our hatching and shipping facilities are the best. We quote express-paid prices on request. Rooster Poultry Ranch and Hatchery, Campbell, Cal.

BARRED PLYMOUTH ROCKS.—"The kind that Win and Lay." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for catalog showing winnings at California's leading shows. Chas. H. Volden, Box 396, Los Gatos, Cal.

MAKE AN EARLY START with your Fall chicks and get them right now. We have Baby chicks as well as chicks one and two weeks old with price same as baby chicks. No weak ones. All strong chicks—all varieties. Santa Clara Valley Hatchery, San Jose, Cal.

BABy CHICKS NOW READY.—Hatches every week. Write for special "Fall Chick" circular. See why Fall chicks pay. R. I. Reds, Barred Rocks, Black Minorcas, White and Brown Leghorns. Campbell Poultry Ranch, Campbell, Cal.

CLOSING OUT—FOR SALE CHEAP.—3 Electric Incubators, 576 egg capacity each. 16 Electric Brooders, 150 chick capacity each. Complete with circuit breakers, thermostats, connecting sockets, etc. Address T. R. Jacobs, P. O. Box 395, San Mateo, Cal.

CROLEY'S DRY MIXED INFANT CHICK FEEDS for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by GEO. H. CROLEY CO., Inc., Poultry Supplies, San Francisco.

SINGLE-COMB RHODE ISLAND RED EGGS for hatching from fine strain mature stock. Even, dark-red color. Good layers. Prices reasonable. Otto Schulz, Hollister, Cal.

DAY-OLD CHICKS.—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

BABy CHICKS.—Strong and healthy. From high-bred free-range White Leghorn stock. Prices on application. Western Hatchery, W. S. Waldorf, Petaluma.

EASTMAN'S BRED TO LAY Barred Plymouth Rocks, Choice cockerels. Fairmead Poultry Farm, Fairmead, Cal.

CHICKENS, DUCKS, GESE, GUINEAS, Pea Fowl, Pigeons, Wm. A. French, 545 W. Park St., Stockton, Cal.

SINGLE-COMB Rhode Island Reds, Eggs and stock for sale. Dirk Dairy Farm, Lemoore, Cal.

WHITE WYANDOTTES.—Blue-ribbon winners. Eggs \$2 to \$5. Chicks, pullets, cockerels. R. W. Strawetski, Route 2, San Jose, Cal.

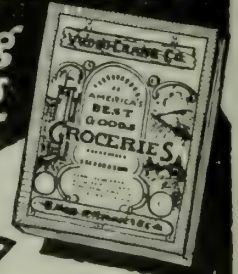
TURKEYS, DUCKS AND GESE.

HART'S BRONZE TURKEYS AND EGGS.—Large reduction in price of stock. Order now for fall delivery. Free Circulars. Albert M. Hart, Clements, Cal.

PEKIN DUCK EGGS for hatching, \$1.00 per dozen. L. D. Collins, R. F. D., 54G, Denair, Cal.

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25 Lbs. Pure Cane \$1³⁹

Write for this big book and learn how you can secure your sugar at from 3 to 4 cents less than the wholesale price. Every item in this catalog means a saving. Many women who buy their groceries from us dress themselves with what they save. You can do the same. Write today for this free book. A postal will do. We are the largest distributors of America's Best Goods on the Pacific Coast.

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Right Now use DEVIL'S DUST and Kill Lice and Mites. Sold Everywhere. Devil's Dust is a deadly poison to all insect life; harmless to poultry, stock, plants. **Globe Mills** Los Angeles, Cal.

Try the Coulson System of Feeding. Our free book "Chickens from shell to Market" gives full particulars. **Coulson Co. Petaluma Cal.**

Wanted 30,000 Men

FOR HARVEST WORK ON IMMENSE CROPS OF

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WAGES \$3.00 PER DAY AND BOARD

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Canadian Government Exhibit,

San Diego, Calif.

The Home Circle Page of the Pacific Rural Press

MRS. BEST'S LETTER.

My dear Friends:—

I know that some of you are in the midst of your warmest summer weather and yet to look at the shop windows, you would never think but that fall was near at hand.

With the exception of a few wash garments that are being closed out at reduced prices the windows are devoted exclusively to fall and winter garments. In suits, the early models are decidedly plain, many of them with quite snugly fitted coats with many seams are flaring skirts. The materials are broadcloth, serge and mixtures. Some of the dressier types are trimmed in fur, a style that is always attractive.

In the one-piece dresses, there are styles for all figures and at all prices—most of them are of serge, but do not conjure up in your mind, the simple little serge dress of several seasons ago, depending on a fancy collar and cuffs for its ornamentation, for these dresses are far removed from that simple style.

There are many new style features—wider skirts, draped tunics, gay braid trimmings, large white sailor or novelty collars of cloth or satin with touches of embroidery much in evidence. Practically all of these garments are partly composed of satin, and very smart, pretty dresses they are. They would make very serviceable dresses for school wear, if you have a daughter who will be away at school this year, and with a fur neck-piece would be good looking for street wear without a coat. Many hang from the shoulders, loosely belted in, fashioned like small girls' dresses, while others have snug-fitting bodices, with either full pleated skirt or draped tunic effect and all with long, tight-fitting sleeves.

I have seen a few white leather collars and cuffs, but the newest is the white felt, finished with a picot edge.

In blouses, the striped tub-silks are very popular for school and general utility wear, while the sheer Georgette crepe with large simple collar and frill is the latest dictate of Fashion. Large neckties, except for sport wear, are a thing of the past. These blouses are worn with either a simple pin or a small, flat bow of ribbon, harmonious to the costume.

ROSABELLA BEST.

SAVE KITCHEN WORK.

A woman who does the house work for an average family walks as far as the distance around the world every six years, but part of this 25,000 mile walk can be saved by having a more convenient arrangement of kitchen where a large share of a woman's walking is done.

The Missouri College of Agriculture at Columbia have recently sent out plans for the remodeling of kitchens to make them more convenient. These cover: (1) rearranging kitchen equipment already on hand, without any cost, (2) remodeling the present kitchen to make it more convenient, (3) the selection of equipment, and (4) planning a new kitchen. Copies of these circulars will be sent on application,

DILL PICKLES.

Select medium-sized cucumbers. Fill the jar one-quarter full of them, alternating the layers of cucumbers with a small amount of dill, about three branches with the seeds on them. Continue this until the jar is full. Then make a brine as follows: 1½ quarts water, a small cup vinegar, and 5 tablespoonfuls salt. Add just a dash of red pepper. Pour this over the cucumbers, put grape leaves on top and a weight over the whole. Set in a warm place for 3 days. They may then be removed to a cool place and are ready for use.

TO HOLD THREAD.

Women who do crocheting, knitting and other forms of needlework know how aggravating the yarn can tangle up and the spool or ball roll away. A bracelet spool has been designed that does away with all this. The spool is revolvably mounted on a bracelet, which is open at the bottom and can easily be clasped on the wrist. The thread feeds over the back of the hand and there is no possibility of tangling. The spool is held lightly in two spring clasps, so that it can easily be removed and a fresh spool put in its place.

USE OF BAKING SODA.

Baking soda is beneficial for many ailments, but it is not necessary for cooking any vegetable, green or dried. If string beans are so old and tough that they need soda, it is best not to cook them. Fresh, green vegetables never need it, but many women add it, because they are in a hurry and it softens the vegetables quickly. Dried beans properly prepared do not need it either.

CHEESE BALLS.

Use any cream cheese; cottage cheese will do but has not so much flavor. Combine with it chopped nuts, preferably walnuts or almonds, chopped green pepper or green olive; season to taste with salt and pepper. Add enough cream to make it easily molded into balls about like marbles. Roll these in cracker crumbs made as fine as flour. If you would like a brown covering, cut slices of white bread, dry it in the oven until brown; then grind very fine and use instead of cracker crumbs.

CRAB APPLE JELLY.

Wash apples, remove stems and blossom end and cut in halves. Put into granite preserving kettle and cover with cold water. Cook slowly until apples are soft, mash and drain through a sieve. Drain juice through jelly bag. Measure, boil about 20 minutes and add ¾ cup of sugar to each cup juice. Boil 5 minutes, skim and turn into glasses. For variety of flavor, add juice of strawberry, raspberry, or mint or rose geranium leaves.

FLOORS AND FLOOR COVERINGS.

Fortunately, the day of nailed-down carpets is almost gone. The sooner all carpets are replaced by rugs the better, for they are cleaned so much more easily. Even though a floor is of soft wood, the cracks can be filled and three or four coats of good paint applied. Then if rugs are used where there is the most traffic, the finish will last well. To keep painted floors in good condition, sweep with a soft, hair brush and dust with a dry mop.

Varnished floors are cleaned by sweeping with a soft brush and dusting with an oiled mop. An ordinary dry mop moistened with a few drops of linseed oil and allowed to stand several hours, is very satisfactory. The wearing quality of a varnished floor is much improved by waxing. The worn places can be rewaxed without applying fresh varnish if taken in time. A good hardwood floor should be waxed without varnishing.

FASHION NOTES.

A very attractive between-season hat is a toque of white breast feathers.

The new winter coats of velour are made with large cape collars, wide belts and big buttons.

Fancy neck-pieces of net, trimmed in ruchings of the same material and combined with ostrich bands, are very popular.

The coats of the new tailored suits are to be much more fitted than formerly and with a decided fullness below the waist line. They are longer also.

Italian silk sweaters seem to have had their day, for there are beautiful ones being offered at less than ten dollars.

One of the newest of the fall hats is a black velvet sailor trimmed with a long white breast around the crown.

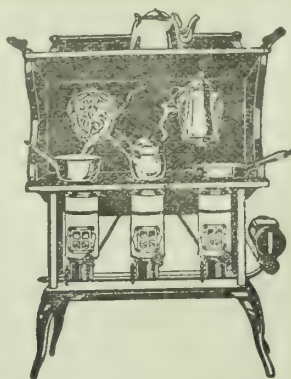
The large felt hats come in all the pretty shades and are most reasonable in price and attractive.

MINCE MEAT RECIPE.

To the Editor: There are numerous ways of making mince pies, but according to the writer, who is an expert pie sampler, those made by Mrs. N. H. Finmand of Eagleville, have just a little bit nicer taste than any sampled to date. Following are the ingredients and the amounts used of each: 5 pounds of apples, 1 pound currants, 1 pound raisins, 1 teaspoonful each of cloves, nutmeg and cinnamon, ½ pound of citron or 1 quart of preserved watermelon rind, 1 quart of cider or in the absence of cider, use vinegar, and 3 pounds of meat made from the lean of the head of a hog.—W. D. G.

TO CLEAN SILVER.

In the early summer, we printed a recipe for the use of the "Silver Clean" zinc pan. This called forth the following from a Denver subscriber: "Did you know that the best electrolytic to use is a piece of aluminum, free from grease, any size or shape. Beats zinc all hollow."



Like Gas
for comfort
and convenience

NEW PERFECTION OIL COOK-STOVE

No coal, wood or ashes to lug—no waiting for the fire to burn up. Better cooking because of the steady, evenly-distributed heat, under perfect control. All heat concentrated on the cooking and not radiated around the room. The long, blue chimneys prevent all smoke and smell.

Bakes, boils, roasts, toasts. More efficient than your wood or coal stove and costs less to operate.

Use it all the year 'round.

**STANDARD OIL
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For Best Results
Use Pearl Oil

Better cooking
and a cleaner,
cooler kitchen.
Now serving
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In 1, 2, 3 and 4-burner sizes, with or without oven. Also cabinet models with fireless cooking ovens.

THE WORK-BOX PEOPLE.

By Ella F. Mosby.

"We ko through all our work,"
The needles proudly cry;
"But not until you're pushed,"
Is the thimble's apt reply.

"Ours is a strong attachment,"
Whisper hook and eye together;
"Yet you need us to secure you"
Hum the threads, like windy
weather.

They all reproached the scissors.
But the scissors didn't care:
'Twas his trade to cut acquaintance,
And he did it with an air!

Gayly jesting thus, and boasting,
Work-box people all at play!
Silence, all! it is the mistress
Coming from across the way.

THE STORY OF THE LARGE STONE.

Once there was a king who took great delight in teaching his people good habits. "Bad luck comes only to the lazy and the careless," said he; "but to the busy workers God gives the good things of this life."

One night he put a large stone in the middle of the road near his palace and then watched to see what the people who passed that way would do.

Early in the morning a sturdy old farmer named Peter came along with his heavy ox-cart loaded with corn.

"Oh, these lazy people!" he said, driving his oxen to one side of the road. "Here is this big stone right in the middle of the road, and nobody will take the trouble to move it."

Then came a young soldier, singing a merry song as he walked along. A gay feather was stuck in his hat, and a big sword hung at his side, and he was fond of telling great stories of what he had done in the war. He held his head so high that he did not see the stone, but stumbled over it and fell flat into the dust.

"Silly drones!" he said. "To have no more sense than to leave a stone like that in the middle of the road!"

An hour later there came down the road six merchants, with their goods on pack-horses, going to the fair that was to be held near the village. When they reached the stone the road was so narrow that

they could hardly drive their horses between it and the wall.

"Did anyone ever see the like?" they said. "There is that big stone in the road, and not a man in all the country but that is too lazy to move it."

And so the stone lay there for three weeks; it was in everybody's way, and yet everybody left it for somebody else to move.

Then the king sent word to all his people to meet together on a certain day near his palace, as he had something to tell them.

The day came, and a great crowd of men and women gathered in the road. Old Peter, the farmer, was there; and so were the merchants and the young soldier.

"I hope that the king will not find out what a lazy set of people he has around him," said Peter.

And then the sound of a horn was heard, and the king was seen coming toward them. He rode up to the stone, got down from his horse, and said:—

"My friends, it was I who put this stone here, three weeks ago. It has been seen by every one of you; and yet every one has left it just where it was, and scolded his neighbor for not moving it out of the way."

Then he stooped down and rolled the stone over. Underneath the stone was a round, hollow place, in which was a small iron box. The king held up the box so that all the people might see what was written on a piece of paper fastened to it.

These were the words: "For him who lifts the stone."

He opened the box, turned it upside down, and out of it fell a beautiful gold ring and twenty bright gold coins.

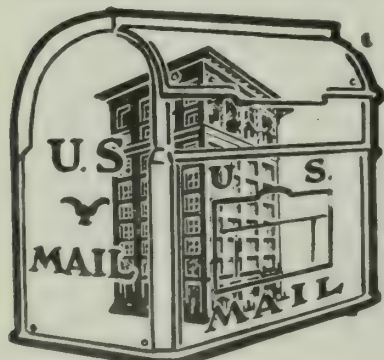
Then every one wished that he had only thought of moving the stone instead of going around it.—
Sacred Heart Review.

Is it any use to give the orchard good care and lose the crop by neglecting to spray in time?

A Watch-It-Get'-Em

ANTS Ant Destroyer—is slow acting—does not kill instantly, but gets the nest as well as the parent. Does not lose strength. Positively non-poisonous—no danger to children, house pets, or foodstuffs. Send 6c for trial can. Ask your neighbor. She uses it. At your dealer. Accept no substitute.

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The only simple, sure way to get the right tea.

Contains four parchment envelopes of Japan, English Breakfast, Ceylon, Oolong—enough for five or six cups of each.

Mailed promptly on receipt of 10 cents (stamps or coin).

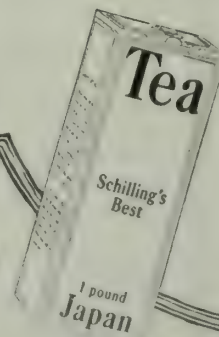
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Sold through grocers only

In standard
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Cut out the Middleman Buy direct from the Grower. All varieties of cut flowers in season direct from the plants, sent by parcel post or express. Also floral work of all kinds. Try a sample order. 40 varieties of ferns in 4-inch pots now ready, 25c each.

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Circular containing 100 mechanical
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TIRE PRICES

Goods shipped to all points C. O. D. Money refunded on goods returned intact within one week.

Size	Special Prices on Plain Tread	Gray Tubes	Red Tubes
28x3	\$ 6.55	\$1.75	\$1.95
30x3	6.95	1.85	2.10
30x3½	8.05	2.10	2.35
31x3½	9.45	2.15	2.40
32x3½	9.95	2.25	2.45
34x3½	10.95	2.30	2.55
36x3½	12.05	2.40	2.75
38x4	13.20	2.80	3.10
31x4	13.85	2.85	3.20
32x4	14.05	2.95	3.30
33x4	14.70	3.10	3.40
34x4	14.05	3.15	3.50
35x4	15.65	3.20	3.60
36x4	15.85	3.30	3.70
34x4½	20.25	3.85	4.30
35x4½	20.85	3.95	4.35
36x4½	21.25	4.10	4.50
37x4½	21.90	4.15	4.60
35x5	23.65	4.70	5.20
36x5	23.95	4.90	5.35
37x5	24.90	4.95	5.45

Non Skid Prices in Proportion

Prices subject to change without notice.

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F3738. H. A. Demarest, Bdw. 4049.
533 Van Ness Ave., San Francisco.
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Hotel Fresno Bldg., Fresno.
The Oldest Automobile Tire Jobbing Concern in the United States and the largest in the world.
Open Sundays and Evenings



Just as surely as the roof tops the house, does the question of what roofing to buy top all others when it comes to how best to protect property against wind and weather.

Wood-Crane Prepared Roofing

is so far and away above all others that it is in a class by itself. It is a roofing that you can put on your home, on your church, on the town hall. It will ornament the building and vie with the foundation stones in wearing qualities. It never fails to make good. Anyone who can use a hammer can lay it. Every roll is 36 in. wide and guaranteed to cover 100 sq. feet.

PRICES
\$1.35 to \$2.55 per Roll
Nails and Cement Free

Send for Free Samples. Test them for weight, strength flexibility, fire resistance qualities and compare them with any roofing costing from \$1.00 to \$1.50 per roll. We are the largest distributors of America's Best Goods on the Pacific Coast. We can save you money and guarantee to give you satisfaction. Write today for Roofing Samples and our big catalog—a postal will do.

Wood-Crane Company

141-149 Main Street
San Francisco, Cal.

SANITARY.

A small boy had a bad cold and snuffed abominably, to the great annoyance of the other passengers in the car in which he was riding. Finally, says the Manchester Guardian, one of the suffering men turned on the offending youngster and said, "Have you a handkerchief?"

"Yes, sir, said the boy, "but mother don't like me to lend it to strangers."

JOTTINGS.

Fly Spatter.—There is a new fly spatter on the market, made of perforated rubber. It is very flexible and will not scratch or injure furniture.

Dish Mops.—The five-cent dish mops are invaluable for cleaning out fruit jars and large-necked bottles.

Burned Kettles.—For badly burned kettles, use a teaspoonful of lye in a cup or two of cold water and let come to a boil. The result is very satisfactory.

DO YOU.

Repeat the Golden Rule and then Sneeze in somebody's face?

Go camping for your health and then place your toilet so that it drains into your water supply?

CUPID, TOO, WAS UP-TO-DATE.

"Engaged to four girls at once?" exclaimed the horrified uncle. "How do you explain such shameless conduct?"

"I don't know," said the graceless nephew. "I guess Cupid must have shot me with a machine gun."

The head of a big London business concern is exceptionally tall and slim. A visitor called to see him, and was asked to sit down. The visitor rose to go, his host rose also, and seemed to rise and rise. The visitor, letting his glance travel upward, as though inspecting a new species of skyscraper, with an expression of awed admiration ejaculated, "Great Scott, old man, your parents must have trained you on a trellis!"—Tit-Bits.

An Irishman was walking through a pasture when a bull rushed up and tossed him over the fence. Picking himself up quickly he faced the animal and said with suppressed wrath—"If it wasn't fer yer bowin' and yer scrapin' and yer apologizin' I'd o' thought you did that on purpose.—Exchange.

Mr. Harry Tate, seeing a number of small boys busily engaged in asking one another riddles, thought he would give them a poser. Going up to one of the lads, he asked, "What time is it when a clock strikes thirteen?" "Time it was taken to be mended," answered the urchin, promptly.

"I see they have just dug up a corner-stone of a library in Greece on which was inscribed '4000 B. C.," remarked a student to a Scotchman. "What do you suppose it means?" "It canna mean bu' one thing," answered the Scot, solemnly: "Before Carnegie."

There wasn't any money in dried peaches when there wasn't any co-operation.



Hop Aboard
with the
Marines and
Sailors of the
U. S. A.



Get your feet into the socks the marines and sailors wear—long-lasting, soft, well-knit, foot-comforting Durable Durham Hosiery.

Yes, the marines and sailors wear 'em, work in 'em, play in 'em, and, if need be, they'll fight in 'em, too. And the reason:

Durable Durham Hosiery stands the gaff of government inspection, the most rigid of examinations. Each separate thread of each separate sock must measure up. Durhams do. And this is the evidence:

404,416 pairs of Durable Durham Hosiery were recently shipped to the Navy Department. 100,000 pairs were for the marines, 16 pairs were rejected. 304,416 pairs for the sailors, only 5 pairs weren't up to snuff. And these only because they had been damaged in packing.

DURABLE DURHAM HOSIERY FOR MEN, WOMEN AND CHILDREN

There is a sock for you in the Durable Durham Line that's got every bit of the comfort and the durability that the government specifications demand for the wear of the sailors and marines—the identical strong, reinforced toe and heel—knit of the same yarn and with the same care—but it is a smarter sock, with uppers that are sheer and light.

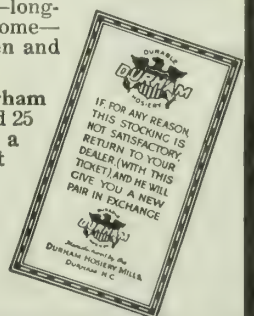
We have named this sock 1700 G. S. It is a regular number of the Durable Durham Line.

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And the wonderful part is that Durable Durham for men, women and children sell for 10, 15 and 25 cents the pair. Each pair is guaranteed with a guarantee so broad and strong that you might have written it yourself. This guarantee is made possible only by expert manufacture and rigid factory inspection.

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Durham, N. C.

This guarantee is on every pair of Durable Durham



Bumper Grain Crops Good Markets — High Prices

Prizes Awarded to Western Canada for Wheat, Oats, Barley, Alfalfa and Grasses

The winnings of Western Canada at the Soil Products Exposition at Denver were easily made. The list comprised Wheat, Oats, Barley and Grasses, the most important being the prizes for Wheat and Oats and sweep stake on Alfalfa.

No less important than the splendid quality of Western Canada's wheat and other grains, is the excellence of the cattle fed and fattened on the grasses of that country. A recent shipment of cattle to Chicago topped the market in that city for quality and price.

Western Canada produced in 1915 one-third as much wheat as all of the United States, or over 300,000,000 bushels.

Canada in proportion to population has a greater exportable surplus of wheat this year than any country in the world, and at present prices you can figure out the revenue for the producer. In Western Canada you will find good markets, splendid schools, exceptional social conditions, perfect climate, and other great attractions. There is no war tax on land and no conscription.

Send for illustrated pamphlet and ask for reduced railway rates, information as to best locations, etc. Address

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Canadian Government Agent.



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SCOTT SMITH CO.,
503 Pacific Bldg., S. F.

San Francisco, Aug. 16, 1916.

Wheat.

With further evidences of short crops in the principal producing areas, prices continue to jump, the local advance following changes in the Eastern and Northern markets.

[f. o. b. San Francisco.]

Sonora wheat\$1.90 @1.95
Northern club 1.92½ @1.97½
Calif. club, ctl. ... 1.95 @1.97½
Northern Bluestem. 2.00 @2.05
Northern Red 1.92½ @2.05

Barley.

The advance on wheat has a stiffening effect on all grains; and aside from that there has been quite an active buying movement in future barley, with enough spot demand to cause marked advance.

[f. o. b. San Francisco.]

Shipping, ctl.\$1.65 @1.70
Choice feed, ctl. 1.62½ @1.65

Oats.

A lively demand and moderate offerings, both red and white feed oats have advanced again, red seed also slightly higher, black and Texas seen holding firm.

[f. o. b. San Francisco.]

Red feed\$1.75 @1.80
Red seed 1.90 @2.00
White 1.65 @1.70
Black seed 3.00 @3.25
Texas Red seed 2.10 @2.25

Corn.

Eastern corn shows no further change, but the general advance is causing an upward movement in sorghum grains.

[f. o. b. San Francisco.]

Eastern Yellow, ctl.\$1.97½ @2.00
Milo Maize 1.75 @1.80
Egyptian 1.85 @1.90

Beans.

The bean market is uninteresting, as there is not much left in most varieties, prices are easy, with some recession from extreme figures which prevailed for a time. This week has brought a sharp drop in large whites and pinks, as some holders have been anxious to clean up, and little demand. The market is extremely quiet on nearly all varieties, the tendency of values is toward about normal level, notwithstanding the shortage.

[On wharf, San Francisco.]

Bayos, per ctl.\$5.50 @5.60
Blackeyes 3.25 @3.50
Cranberry beans 5.50 @5.60
Horse beans 3.25 @3.40
Small Whites (south) .. 7.00 @10.00
Large Whites 6.75 @7.25
Pinks 5.75 @5.90
Limas (south) 5.65 @5.75
Red Kidney 8.00
Mexican Reds 5.50 @5.60
Tepary beans 4.50 @4.75

Hay.

Arrivals have fallen off a little, owing to the fact that cars are hard to get on all the roads, most hay is coming by boat. Consequently local demands are rather meagerly supplied, and values are quite firm. Dealers say there is still a great deal of hay in the country, which the owners are anxious to ship, and predict a drop in local values when shipments increase. The light crop and prospect of large feeding requirements during the late fall and winter however, would seem to be in favor of a firm market. Fancy hay is scarce and firm. Local offerings of alfalfa are sufficient, with steady values.

(Wholesale prices per ton, carload lots, San Francisco.)

Wheat, No. 1\$13.00 @14.50
No. 2 10.00 @12.00
Tame oats 11.50 @15.50
Wild oats 10.50 @13.00
Barley 10.50 @13.00
Alfalfa 10.00 @14.50
Stock hay 8.50 @9.50
Straw, per bale35 @.50

Under date of Aug. 15th, these quotations are furnished by Nicholl-Loomis Co., Los Angeles:

Barley hay\$10.00 @14.00
Wheat hay 10.00 @14.00
Tame oat hay 12.00 @16.00
Northern alfalfa 11.00 @13.00

Local alfalfa 12.00 @15.00
Stock hay 6.00 @9.00
Straw 5.00

Feedstuffs.

Beet pulp is again offered in small lots, and larger supplies expected soon, about \$23 per ton asked. Alfalfa meal in good demand at slight advance, all lines are firm, in sympathy with grain market. Cracked corn and rolled barley have been marked up, and other advances are expected soon.

[Wholesale prices, per ton, carload lots, San Francisco.]

Beet pulp, per ton ..\$23.00 @23.50
Alfalfa meal, per ton. 17.00 @18.50
Bran, per ton 28.00 @29.00
Oil Cake Nominal
Cocoanut cake or meal 23.00 @25.00
Cracked corn 43.00 @44.00
Middlings 35.00 @38.00
Rolled barley 33.00 @34.00
Tankage 45.00
Rolled oats 34.00 @35.00

Vegetables.

There is considerable activity in the local garden truck market, values on most lines are well maintained, notwithstanding large offerings. Cucumbers are moving well at steady prices. String and lima beans and peas all higher, good stock is getting scarce and quickly disposed of. Supplies of summer squash excessive, causing a drop in top figure; values have also been shaded on cream squash and okra. Green peppers have been hard to move and good stock has sold as low as 25c. per lug. Eggplant steady. Tomatoes easy, but old range is still quoted; green corn occupies a similar position, with liberal supplies, though better lots clean up well.

[Wholesale prices, San Francisco.]

Cucumbers, 50-lb. lugs ...40 @60c
String beans, lb 3 @5c
Limas 3 @4c
Summer squash, lugs 50 @75c
Cream squash 80 @95c
Peppers, bell, lugs 25 @50c
Eggplant, lugs 40 @50c
Peas, lb 4 @5c
Tomatoes, lugs 50 @1.00
Green corn, sack 1.00 @1.75
Okra, box 50 @65c

Potatoes and Onions.

There has been quite a heavy shipping demand for potatoes for the last week, and more would be shipped if cars could be had. This is causing a shortage of choice Delta stock in local market, with a crop which was already light; prices have accordingly taken a sharp turn upward on both Salinas and Delta stock. No. 2 potatoes are only steady as last quoted, onions show a further decline on increased offerings.

[On wharf, San Francisco]

Potatoes, ctl., Delta ..\$1.75 @2.00
No. 250 @1.00
Salinas 2.40
Onions, yellow 1.00 @1.25
Garlic, new crop, per lb .. 4 @5c

Poultry.

A few live turkeys are now coming in and readily disposed of at 25 to 30c. Belgian hares plentiful and dull, with lower prices. There is a good demand for chickens in general, and fairly liberal offerings in most lines well taken up, a slight advance on broilers and fryers. Large colored hens find fair sale, small leghorns are a drug on market, mowing slowly at lower prices, apparently owing to the cleaning up of star boarders from egg ranches.

[Wholesale prices, San Francisco.]
Broilers, 18 lbs. to doz. and

less, lb 20 @22c
do, over 18 lbs. to doz. .20 @21c
Fryers 20 @22c
Hens, extra, per lb, colored 19 @20c
Small leghorn 15 @17c
Smooth Young Roosters, per
lb. (3 lbs. and over) ...23 @25c
Squabs, per doz 2.00 @3.50
Geese, per pair 2.25 @3.00
Ducks 13 @14c
Old 12 @13c
Belgian hares 9 @10c

Butter.

Arrivals are running rather heavy, keeping prices on all grades down to figures last quoted, notwithstanding a heavy movement. There has been a large shipping business for London, six cars having been sent within the last few days, and it is believed may continue for some time, though little shipping in other directions.

[S. F. Dairy Exchange prices.]

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	26½	26½	26½	26½	26½	26½
Prime 1sts	25½	25½	25½	25½	25½	25½
Firsts	25	25	25	25	25	25

Eggs.

Prices have reached a comparatively high level for this season, with a little drop on the outside demand; with fairly large receipts, it has been impossible to get any advance on extras since last report. The only change is a 1½c. rise on pullets since first of the week, as former advance of extras is giving lower grade more prominence.

[Los Angeles Dairy prices.]

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	33	33	33	33	33	33
Sel. Pul.	27	27	27	27	28	28½

Cheese.

Flats have dropped to 14c. Otherwise no change. Y. A.'s being firm, Monterey cheese in common with flats, is plentiful and easy.

[S. F. Dairy Exchange prices.]

Y. A.'s fancy17 c
Fancy Calif. Flats, per lb. .14 c
Monterey Cheese 14 @15c

[Los Angeles Dairy prices.]

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	26	26	26	26	26	27
Eggs	31	31	31	31	31	31

Deciduous Fruits.

The local market, in sympathy with outside conditions, shows firmness, especially in lines which are shipped extensively. Huckleberries are lower, with increasing supplies; all other berries stand at old level, with liberal supplies in most lines. Gravenstein apples higher, with strong demand, the crop will soon be cleaned up. Bellflower prices opened at 75 to 80c., Watsonville and some outside shipments are moving, though State rules will not permit shipment to this market until the end of week. Peaches are cleaning up well, and good stock is higher; pears and plums also are firm. This is due to unusually heavy Eastern shipping demand, shipments having been made from San Francisco market, which is exceptional; there is difficulty in getting cars enough to handle the business. Figs lower on liberal offerings, but demand is fair. Cantaloupes steady, moderate offerings; watermelons are higher. Casabas coming in, but not yet of a feature. Malaga and muscat grapes lower, with increasing supplies.

[Wholesale prices, San Francisco.]

Huckleberries, lb 8 @12c
Currants, chest \$3.00 @4.00
Loganberries, chest 6.00 @7.00
Blackberries, chest 2.00 @3.00
Raspberries, chest 12.00 @14.00
Strawberries, chest 2.50 @4.00
Apples, Gravenstein, 4-tier 1.15 @1.25
Alexander75 @.85
Crabapples, lug35 @.50
Pears, Bartlett, bx, No. 1 1.60 @1.85
No. 250 @1.00
Peaches, lugs75 @1.00
Peaches, basket 50 @60c
Figs, Cal. black, box double
layer75 @90c
Brunswick 35 @50c
Plums, crate 75 @1.00
lugs75 @1.00
Prunes, crate 85 @1.00
Nectarines, crate 75 @1.00
Cantaloupes, std. crate.... 75 @100
Casabas, crate 85c

Special Deciduous Market Report.

By J. L. Nagle.

Sacramento, Aug. 14, 1916.

The shipment of Malaga Grapes is at this time unusually heavy, the tonnage averaging 85 to 90 cars a day; in some instances this amount exceeds 100. The demand up to the present time has been able to take care of what shipments have arrived, but we look for a declined market very shortly on account of increased offerings. In our judgment it would be advisable to withhold shipments and better regulate the output to assure satisfactory prices throughout the season. We cannot see the necessity of unnecessarily rushing this fruit to Eastern markets and stifling demand. There is no particular reason why grapes at this time could not be held back. Tokays are ripening slowly. The first straight cars will leave the Florin district this week. We look for good demand, stiff markets and high prices for the first two weeks and satisfactory prices for balance of the season, with

demand active throughout. Cannery stock is now moving, averaging \$30 a ton for Phillips Salway peaches will be ready for shipping in about ten days and we believe they will be disposed of at good prices, provided the shipments are not heavy. The following prices have ruled for the week:

New York.—Bartlett Pears averaged \$2.89; Elberta Peaches, 98c.; Gross, \$1.63; Giant plums, \$1.36; Kelsey, \$1.66; Thompson grapes, \$1.65; Tokay, \$2.38, and Malaga, \$2.21.

Chicago.—Bartlett Pears, \$3.02; Elberta peaches, \$1.00; Lovell, 90c.; Gross plums, \$2.06; Dukes, \$2.21; Hungarian, \$2.07; Kelsey \$1.93; Giant, \$2.03, Malaga grapes, 1.88; Thompson Seedless, \$1.44; Tokay, 2.52.

Total shipments to Aug. 15, 7908 cars. Total shipments same date 1915, 6046 cars.

Special Livestock Market Report.

San Francisco, Aug. 16, 1916.

Hogs are on high level in spite of the rush of stubble hogs of very light weight. We saw the day's receipts at one packing house and none weighed 200 pounds, nearly half of them ranged between 120 and 140 pounds. This is business suicide for the farmer. Stubble hogs, however, are not "grain fed" hogs. Rooting over fields of scant feed does not make the same kind of pork that feedlots produce.

Cattle.—A good run has come from Humboldt and Mendocino grass. Not many grass cattle left in California.

Sheep and lambs are mostly coming from Oregon, North California, and Nevada. Lambs are of good quality but sheep mostly require feeding. Many of them are shipped to stub-

ble fields or to sugar beet sections to fatten on the beet tops.

Wool.—There is no material change. Where holders need money and must sell, only lower prices attract buyers. Eastern mills stocked up at lower prices and while English mills are buying on a high market, ships for export are not available. Foodstuffs and munitions must be carried in British boats. The government has taken over the wool of the Isles at a price lower than market prices, but their supply is equal to the absolute necessities. Defective and short wools are practically unsalable and will probably continue so until after the war. Good grades will probably pick up in January after the mills have taken inventory and are ready for steady weaving again.

Watermelons, doz. . . . 2.00 @ 3.00
 Grapes, Malaga, small box. .75 @ 90c
 Muscat, small box 75 @ 90c
 Grapes, Thompson, crate .90 @ 1.00

Dried Fruits.

The dried fruit business continues in the same lethargic condition as for some weeks past, with no sign of improvement for near future. The car shortage and prospects of a railroad strike have probably been deterrent features in regard to local buying operations: the East, with export outlets curtailed, is delaying purchases as long as possible. Apricots have been entirely neglected for some weeks, and notwithstanding admitted scarcity of stock, packers have been able to pick up some at concessionary prices, bringing a sharp drop in current quotations. Old prunes are easy, holders anxious to clean up, but there is little left. In new prunes buying continues slow; there is no prospect of better prices until demand revives.

[Net to growers, f. o. b. shipping point.]

Apples, new crop 5 @ 6 c
 Apricots, per lb. 1916 . . 9 @ 10 c
 Figs, white, 1916 6 1/2 @ 6 3/4 c
 Figs, blk, 1916 4 @ 4 1/2 c
 Calimyrna, 1916 9 @ 10 c
 Prunes, 4-size basis, '15 4 1/2 @ 4 3/4 c
 1916 5 c
 Peaches, old 5 @ 5 1/2 c
 1916 6 @ 6 1/2 c
 Pears 6 1/2 @ 7 c
 [Associated Raisin Co. prices]
 Fancy Seeded, 16 oz. . . . 7 c
 London Layers, 3-crown, 20-lb. box, 1916 1.30
 Imperial Clusters, 6-crown, 20-lb. box, 1916 2.50
 20-lb. box, 1916 1.30
 cases, per lb 8 3/4 c
 Sultanas, 50-lb. cases, per lb. . 8 c

Citrus Fruits.

Oranges are commanding very high prices on the Eastern auctions, while lemons are lower. At the New York auction, Monday, Aug. 14, Valencia averaged from \$3.25 to 5.35 per box, and lemons \$7.20 to \$7.60. At Boston the same day Valencia averaged \$3.90 to \$5.40 and lemons 6.80 to 7.25 per box. Other auction points were about the same. Fancy oranges a little firmer in local market, but otherwise values are unchanged. The local demand in San Francisco is moderate at present, but heavy outside demand is setting the pace for values, preventing any excessive offerings.

[Wholesale prices, San Francisco.]

Oranges, Valencia, fancy box \$3.50 @ 3.75
 choice 3.15 @ 3.35
 Grapefruit, fancy 3.25 @ 3.50
 choice 2.50 @ 2.75
 Lemons, fancy 6.50 @ 7.00
 choice 5.75 @ 6.25
 standard 4.00 @ 4.50
 Lemonettes 3.75 @ 4.25

Honey.

Arrivals in San Francisco are still light, and trade scantily supplied. While some shipments are going forward from the country, Eastern buyers are offering some competition, and values are quite firm.

[Wholesale prices, San Francisco]

Water white, comb 13 @ 15 c
 Amber 10 @ 12 c
 Water white, extracted . . 8 @ 9 c
 Light amber, new 6 @ 7 c
 Dark 3 1/2 @ 4 c

Nuts.

New walnut figures are not expected for some time, and it is still early to get definite figures on new almonds, though harvest is under way. Rosenberg Bros. report late advances from Spain, stating that the Tarragona crop is very short; and they state that prices for California crop should be high.

Almonds, 1916:
 Nonpareils, lb. 17 1/2 c
 I. X. L. 15 c
 Drakes 13 c

Hops.

Picking is getting under way this week in several districts, but there is no business as yet. Prices on California hops are off about 1/2 c. from old figures. Quotations nominal.
 Sacramento, 1915 7 1/2 @ 8 1/2 c
 Mendocino, 1915 8 @ 10 1/2 c
 Oregon, 1915 8 @ 10 1/2 c

Groceries.

The feature of the week is the sharp decline in sugar, which fell off 25 points at one drop, and is now quoted at a granulated basis of \$7.20. The big jump in wheat has forced flour prices up another notch, present figures being \$6.80 to \$7.20.

Petroleum Products.

[f. o. b. San Francisco.]
 Gasoline, Red Crown, in 100-110 gal. drums, or 50-55 gal. steel barrels, per gal. 19c
 Engine distillate, similar pkgs, 9 1/2 c
 Pearl oil, similar pkgs 9 c
 Zerolene, light, medium and heavy, in bbls., per gal . . . 40c
 in cases (2-5 gal. cans) . . . 60c
 Zerolene heavy duty oil, in bbls., per gal. 50c
 cases, per gal. 60c
 Arctic Cup Grease, No. 0 to No. 5, 10-lb can, per lb. 9c
 Zerolene transmission lubricant, "A," "BB," "BBB," No. 10, case \$1.35

Livestock.

[Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.]
 Steers, No. 1 6 3/4 @ 7 1/4 c
 No. 2 6 1/2 @ 6 3/4 c
 Cows and Heifers 5 3/4 @ 6 c
 No. 2 4 1/2 @ 5 c
 Bulls and Stags 4 @ 4 1/2 c
 Calves, light 8 @ 8 1/2 c
 Medium 7 @ 7 1/2 c
 Heavy 6 @ 6 1/2 c
 Hogs, grain-fed:
 100 to 150 lbs 8 c
 150 to 250 lbs 8 3/4 c
 250 to 325 lbs 8 1/2 c
 Prime Wethers 7 @ 7 1/2 c
 Spring Lambs, f. o. b. country points \$5.00 @ 5.50

Horses.

There has not been much stock offered in the local market this week, and apparently none needed, as recent arrivals have been slow of sale, even the more attractive animals being hard to dispose of at satisfactory prices. Local buyers show little interest, though there is some buying for outside. Prices unchanged.

Classified Advertisements

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2 1/2 c per word

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GAS ENGINES—I can furnish rebuilt Fairbanks, Morse, Otto, Peerless, Samson, Union and other good makes in all sizes. All investigators buy and all buyers are delighted. Pay when satisfied. J. J. Pottinger, 189 2nd St., San Francisco

SECOND HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHEETER PIPE WORKS, 306-8 Howard St., San Francisco.

FOR SALE—A 5-12 H. P. Farm Tractor, new, never been used. Owner selling ranch, pulls 2 12-inch plows or 5 inch centrifugal pump. \$400 cash for immediate acceptance. Box 227, Pacific Rural Press.

SLIGHTLY USED LITTLE BULL TRACTOR taken in trade for Big Bull will be sold for \$350 cash, fully guaranteed. Hughson & Merton, S. F.

LIVING EXPENSES REDUCED THROUGH CO-OPERATIVE BUYING—Write for catalogue and particulars. Pacific Co-operative League, D236 Commercial St., S. F.

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WANTED.

WANTED—ABOUT SIXTY YOUNG MEN and women to enter WESTERN NORMAL on August 28, 1916, to prepare for teaching. Western Normal graduates secure and hold good positions. We assist graduates to secure good positions and promotion. We also give a two-year high school course. For information, address WESTERN NORMAL, J. R. Humphreys, Principal, Record Bldg., Stockton, Cal.

EXPERIENCED FARMER, with capital, desires to lease either a good Deciduous Fruit Orchard, or Stock and Alfalfa Ranch, or a combination of both. There must be plenty of water available and be situated in a healthy part of the State. Box 225, Pacific Rural Press.

AGRICULTURAL COLLEGE GRADUATE—three years' experience, two as foreman in large deciduous fruit orchard, open for engagement after Nov. 1, 1916. Box 228, Pacific Rural Press.

WANTED—Reliable solicitors for country paper. Must furnish bond. 217 Underwood Building, San Francisco.

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FOR SALE—140 acres hill land, 10 acres grapes, 80 prune and peach trees 9 years old; 4-room house, large barn, cement reservoir; water piped from a spring. Creek with water

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WANTED—Farms, large and small, in all parts of the State. Our system of placing owners in direct communication with buyers has brought us hundreds of applications for farms. What have you to offer? Write for our listing blanks. Western Farms Bureau, 660 Market St., San Francisco.

TENANT WANTED—Share basis on small dairy ranch. Also take care adjoining orchards; wage basis. Beautiful location. New buildings. Excellent opportunity. References required. Give full particulars, experience, family, equipment, etc. George S. Henry, Oakdale, Stanislaus Co., Cal.

TO LEASE—Fine dairy property of 1600 acres in Northern San Joaquin County. 500 acres in alfalfa, plenty of feed. Will carry 250 to 300 cows. Fine opportunity for dairyman owning a herd. Address Owner, A. H. McHuron, 149 New Montgomery St., San Francisco.

STATE SCHOOL LAND MAP, \$2.50—County Sectional Map showing Government land, any county, \$2.50. Free New August Booklet. Write Joseph Clark, Experienced Record Seacher, Sacramento.

HAVE 50 ACRES fine irrigated fruit land Will make very attractive sale offer to practical orchardist with some capital. Address R. T. Romie, Soledad, Monterey country.

FOR EXCHANGE—80 acres of fine alfalfa land for Holstein dairy cows or young stuff. Sturgeon Bros., Route A, Box 61, Lemoore, Cal.

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Don't let this troublesome weed sap your soil and ruin your crop.

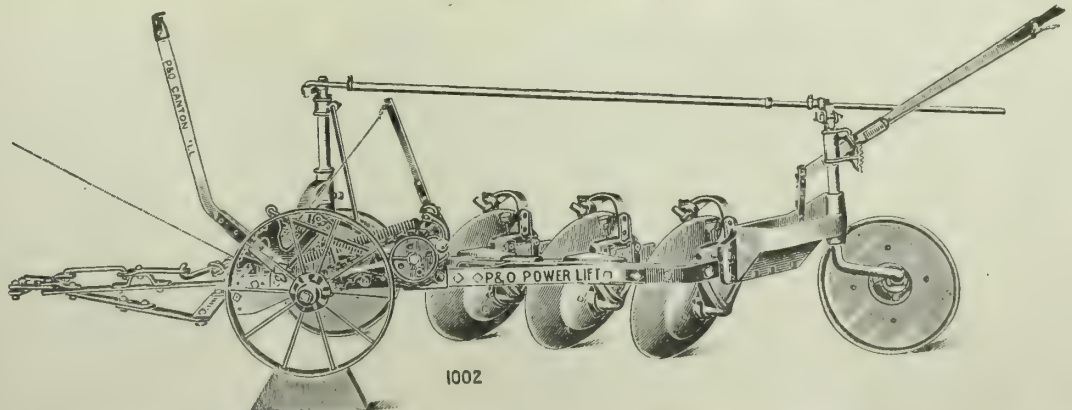
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Wheeler Reynolds & Stauffer
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 San Francisco, California

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Having been subjected to the most rigorous tests under actual working conditions in the field, it is not an experiment, but a demonstrated success, and owes its success in a measure to the incorporation in its construction of many of the essential features previously found only in the P. & O. LITTLE GENIUS Mold-Board Plow, the first and most successful power lift ever sold in California.

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 P. & O. Little Genius Power Lift Engine Moldboard Plows (2, 3 and 4 bottoms—12 and 14 inch).
 P. & O. Little Genius Orchard Pattern Plows (3 and 4 Bottoms—10 and 12 inch).
 P. & O. Junior Engine Plows (3 and 4 Bottoms—12 and 14 inch).
 P. & O. Senior Engine Plows (4, 5 and 6 Bottoms—12 inch only).
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is the **BIG BULL** way

HERE IS REAL PROOF---ALL WE CAN GET ON THIS PAGE

You can write or talk to any of the California owners whose names are printed on this page. You can ask them about any special feature of the construction or operation of the Big Bull. Make special inquiry regarding these points, many of them exclusive with the Big Bull Tractor. Self-guiding; Bull wheel in the furrow; Subsoiling; Speed and number of acres plowed per day; Powerful dependable motor; Accessibility to motor; Ease of operation; Simplicity of design; Service given by manufacturers. If there has been at any time the least doubt in your mind regarding the value of a Big Bull Tractor to your farm, let the facts, as you can obtain them from the following men who have farmed with Big Bull Tractors, convince you that the thing to do is to buy a Big Bull Tractor, and buy it now before there is a shortage due to the scarcity of raw materials. (In writing to these men please enclose stamp for reply.) **SPECIAL NOTICE**—We want to offer an apology to the Bull Tractor owners whose letters do not appear—Space did not permit of printing more than a fraction of the many received.

Elmira, Solano Co.
I find my Big Bull Tractor will take the place of eight horses and do the work much cheaper. When not at work it is no expense. When horses are not at work, it will cost 25c a day to feed them hay. That is putting it low. When at work they need hay and grain, and the least it will cost will be 75c a span to feed them. That is, if you raise your own feed. I can run my Big Bull one-third less time, and plow from 2 to 2½ acres more than I can with an eight-horse team. So you see it is a great saving in expense and also in time. I can pull two 14-inch gang plows, or three 10-inch gang plows with ease, or a four-section harrow, that was built for an eight-horse team.

I am satisfied the cost is one-third less than with teams. For sawing wood, the Big Bull is a dandy, and in pumping water, the Big Bull can not be beat by any engine made. It will pull a six or seven-inch pump with ease, and run as steady as a clock. I am very much pleased with my tractor and I think all my neighbors will soon use them.
L. C. NORTHUTT
Lock Box 125.

Dixon, Solano Co.
I have had no trouble with the tractor in any way.

Mr. Shafer asked me for some kind of a testimonial. He didn't say what kind he wanted, but guess he was absolutely sure of the brand he'd get. I'll do that for him and express a lot in mighty few words.

The Big Bull Tractor is all there, and its batting average is 1000. I might go on with a letter in letting you know what I have done with it, but what's the use? You know and I know, they can't be beat.
N. P. & H. M. WILLIAMS.

Rio Linda, Sacramento Co.
I have graded roads with the Big Bull and I have plowed with it, disked with it. I have run a 5-inch pump for irrigation, and I am leveling land for irrigation at this writing.

I have not had any trouble but what we could solve, that is, my son and I. I am very much pleased with the Big Bull so far and others that previously knocked the Bull Tractor if they were in the market for a small tractor now, they would get a Big Bull. Well, this is all I have to say about the tractor at this time.
A. GENTRY.

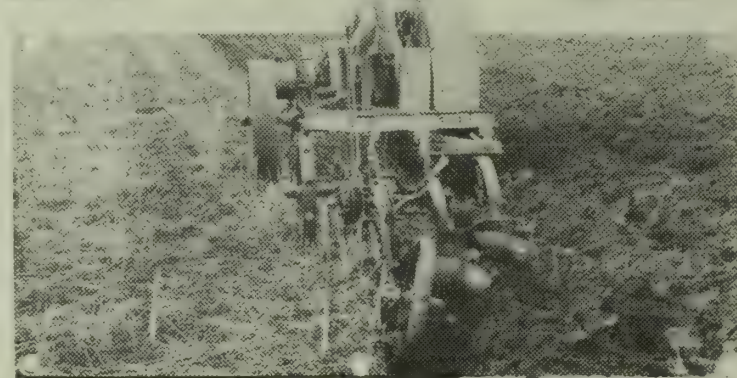
Elmira, Solano Co.
The Big Bull is doing good work and am not having any trouble so far. If your service man happens in this part of the country would like to have him call as there are a few things I would like explained that I do not understand very well. I can do anything on the ranch with it that they can do with horses and a lot of things that horses can't do. I have plowed, harrowed and disked, sawed wood and this summer I am pumping with it. It has fine belt power and runs all day without any bother, and only costs \$1.50 for distillate and oil, that is for 12 hours. I have given it a good try-out and will say that I wouldn't do without one on a small farm. It is the handiest thing a man can get.

I pull two 12-inch plows and go three miles per hour, and I make 4 miles per hour on the road with hay, where with horses I can only make 2½ miles per hour.

Some people think that I like to show off, but I bought it for all kinds of work, and work it will have to do as we only have two horses.

As soon as pumping is done with I am going to grade land, as it pays to fill up the low places. I would like to see all the big places cut down to 80 or 100 acres, and a Big Bull on every place. I had a 10 H. P. engine to pump with, and all my neighbors could hear it for miles, but now with the Big Bull they don't know when I start or stop.

SERVICE



We invite comparison with tractors costing from \$500 to \$700 higher.

\$645.00 F. O. B. Minneapolis

If you have not received new literature on the Big Bull, write us, and also send for a three months' trial subscription to the monthly Bull Tractor Bulletin, Dept. AS.

HUGHSON & MERTON, INC.

530 GOLDEN GATE AVE.,
SAN FRANCISCO.

1229 S. OLIVE ST.,
LOS ANGELES.

Since I have had the tractor it has made more money for me than 8 horses. It is the handiest tractor made for all kinds of work.

SANFORD MCMAHILL
Maxwell, Colusa Co.
Enclosed find check for distillate burner. It is great. We started on a twenty-acre field at 6 p. m., ran until 3 a. m., started up again at 9:30 a. m., and finished the 20 acres at 3 p. m., making 14½ hours.
WILLIAM HAGAN

Courtland, Sacramento Co.
The tractor works fine. Plowed 150 acres, placed a Chink (Chinaman) on the tractor, and he did the rest with a little directing now and then. He expressed it by saying, "Heap good."

CHAS. E. HUSTLER.

Sheridan, Placer Co.
In regard to the success with my Tractor No. 7837 will state that I am very well pleased. Have been working right along without much trouble. In regard to the work I have been doing: I have plowed 260 acres, pulling a two-gang Columbia 40-bottom and one section of harrow, plowing on an average of 8 acres a day, burning about 20 gallons of distillate and one gallon of oil. Pulled a 12-foot disc harrow in river bottom land, which is very loose; pulled a 9-foot spring-tooth harrow in very hard ground. Will say that the Bull-with-the-Pull has done very satisfactory work for me.
J. RUFFINELLI.

Willows, Glenn Co.
In regard to the work my Bull Tractor is doing, it gives us great pleasure to write you of the excellent work it did this spring while we were sowing rice by means of Gorams. At the beginning of rice planting, we had four 14-inch Goram Seeders, two being hauled by six (6) mules each and two by one Bull Tractor to each seeder.

The seeding was being done between contours which necessitated numerous turns, in making which the six-mule teams lost considerable time at each turn, but the Bull would make the complete turn in a much shorter length of time. Due to the greater speed at which the Bulls traveled and their quickness in turning each Goram pulled by a Big Bull would do about twice the acreage that the Gorams pulled by the six mules would do: as the stock cost 90c per day a head, besides the cost of feed, the seeding done by the Big Bulls was much the cheapest and the most satisfactory.

THE SPALDING CO.

SIMPLICITY

Brockman, Lassen Co.
I have had a Big Bull Tractor since last summer. I had to work him hard, as we have the worst kind of "dobe" in this country. It is just like rocks when dry. I had many farmers tell me that I could not plow now, while I was doing it every day. I have run the Bull with 20c gasoline and made money by it. (Freight up here costs more than gasoline and more than most anywhere in California.)

I don't know how much gasoline it takes per day, but think the average was about 12 gallons for a ten-hour day. I am sure it has taken more some days than it did others, and I blame this all to my inexperience, as I did not know anything about tractors, and very little about gasoline engines. Had no repairs, except a few bolts, which I lost.

Would not exchange Bull for any other tractor now, nor for an eight-horse team, if I should keep them on the farm, as the Big Bull will work them to death in less than one season.
WILLIAM KEMPER

Newbury Park, Ventura Co.
I purchased a Bull Tractor from Hughson & Merton nearly one year ago, started it out pulling a Steel King Hay Press which, when equipped with self-feeder, dropper, etc., required a large engine. The Big Bull did the work easier, than any 20 H. P. engine I ever used, giving a perfect steady running power from morning till night.

I used it two months at this, then plowed some in Oxnard vicinity; then ran it to Newbury Park, and plowed 200 acres for myself, 35 for Mr. Heckman, 100 on the Frederick Ranch, and 60 on the Petranos; then gave it a good overhauling and began running the Steel King Roller again. It went nearly all the time and lots of the time day and night.

I plowed more land with a four 10-inch Stockton gang in six hours than eight horses could with the same kind of a plow in ten hours; the eight horses cost me \$5.50 per day for feed, the Bull cost me barely \$3.00, and the first cost of the horses was more than the Big Bull. In answering some questions asked me by the Farming Department, Washington, D. C., about the tractor, I said it was the most powerful for the money that had ever come west of the Rockies. If you all know them you would all buy them.
S. L. MARTIN.

Corcoran, King's Co.
Just a few lines in regard to the Big Bull which I purchased from your agent, Mr. E. J. Cutting, last fall. I wish to say that we did eight-horse work in he field with it, pulling two double discs on the alfalfa, and plowing with a four-disc plow for grain, plowing from five to seven inches deep. Had no trouble to speak of at all, and, by the way, when we hooked the Big Bull to the 7-inch pump, the way he made the water roll was a sight.
MELVIN WORKMAN

Compton, Los Angeles Co.
We own Big Bull Tractor No. 7904, and will say we are well pleased with it. We have exceedingly heavy ground to work. Plowed 70 acres, pulling one 14-inch bottom on an average of 14 inches deep; the same plow we have been using five good horses on, and the Big Bull did the work easier and faster by about one-third and about one-half the cost.

We also pulled a ten-foot disk harrow over the ground this spring to prepare our seed bed. In fact, we did about all our farm work, except planting, with the Big Bull.

We are now using the Big Bull to run a No. 5 American Centrifugal Pump, discharging 80 inches of water for twelve hours a day, using pure engine distillate at two gallons an hour with your standard carburetor on distillate attachment, and believe me, Big Bull does the work and does it easy.
F. M. LEE & SONS.

Sunnyvale, Santa Clara Co.
I own a Big Bull Tractor and have used it about a year in my 90-acre prune and cherry orchard, and am well pleased with same. It consumes between 14 and 15 gallons of engine distillate per day at a cost of 8 cents per gallon.

The Big Bull tractor will do the work of seven good horses at a cost of \$2 per day, and when standing your expense stops, while the expense of horsepower goes on 365 days of the year, which is much greater than the running expense and the up-keep of the tractor. The up-keep of the tractor is very small on account of the simplicity of its construction. There are but four driving gears which make the cost very light and also give more power than the tractor with its many complicated gears.
H. G. STELLING.

San Jose, Santa Clara Co.
In regard to the use of the Big Bull, I plowed ground this year as hard as the county road, and had some lumps as large as a bushel basket, but succeeded in getting my places nearly as fine as dust by using P. & O. Gang Plows, double disc and clod masher, pulled by the Big Bull Tractor.
TARRANT PUTNAM.

156 N. 5th St.

Felix, Calaveras Co.
Our Big Bull has answered every purpose and it is beyond a doubt one of the best little tractors on the market for the money.

J. H. COCHRAN.

Greenfield, Monterey Co.
I have been using a Big Bull Tractor the past two months and am highly pleased with it. It pulls a 4-bottom, 10-inch Stockton gang about five inches deep in stubble land for sowing barley. With this outfit I plow about an acre an hour or about 10 acres a day and burn about 20 gallons of distillate and 1½ gallons of oil in doing the work.

I have plowed about 550 acres with this engine and have never had to adjust or take up any bearings yet and feel certain that with reasonable care and attention the matter of upkeep need not cause any worry to the owner.

HORACE L. CLARKE
(Mr. Clarke has used his tractor for 64 hours straight without a stop on an 8-inch centrifugal pump, and is now running a thresher with it.)

Tractors are cheaper to work than horses---it doesn't matter which make you buy you will save money---only with a **BIG BULL**, you save more.

THE PACIFIC RURAL PRESS

SAN FRANCISCO

AUGUST 26, 1916.

LOS ANGELES

Six Decades of California Fairs.

Twelfth of a Series of Sketches in Which the Editor Presents Suggestions, Drawn From Long Experience, of What Californians Have Done and May Do for the Advancement of California Agriculture.

WITHIN two years after the first rush of the gold-seekers, that is "in '49 and the spring of '50," there was held in San Francisco, a mushroom town of miners and their promoters and pillagers, an agricultural fair for the exhibition of the products of the new State, which, at the time, was generally believed to be of no agricultural account. We have no record of the time of it except that it was in the fall of 1851, nor the place of it except that the orator, of whose address we have a copy before us, say, "Let us cast our eyes around this hall;" but whether it was a gambling hall or a church we do not know. Teamsters of both the Lord and the devil are known to have been early on the ground, intent on hauling, either from the pit or into it. But it was an agricultural fair, for the orator alludes to products arriving from Sonoma and Sacramento valleys on the north and from Los Angeles on the south; products of great diversity and of dimensions incredible to those who did not see them. And there was a silver cup awarded to John M. Horner, who, in the Alvarado region of Alameda county, produced, as the orator says, "at a cost of about \$50,000, a crop of field vegetables and grains worth at present prices, some \$200,000." Thus the first California fair recognized and rewarded the man who struck the keynote of the large in California farming by making a profit of 300 per cent. But lest this brilliant instance of the success of frenzied farming be overworked by promoters we hasten to add that another historian says: "The onion and potato fields of 1851-2 made their owners rich; the same fields in 1853-4, with excellent crops, ruined their owners"—for the production was beyond all local powers of consumption. What, then, can a farmer do in a country where things grow so big and people eat so little?

Getting Together. — To help each other answer the puzzling questions of what

will the local conditions of soil, moisture and temperature grow successfully and what can be profitably done with it when grown—the pioneers, who took to farming, began at the very first to get together, like the Athenians of old, "to tell and to hear some new thing"; and above all they desired to see also. And so there came to be farming assemblies very early; and exhibitions also, other than the first of record, to which we have referred. The chief immediate result, was an appeal to the State legislature of 1854 for the establishment of a "State Agricultural Society." Much quiet pressure was exerted upon the law makers of a

State whose eyes were naturally largely occupied with the gleam of gold and much rural eloquence was poured upon them. From such a stream set free by Dr. C. V. Winslow, we catch these glistening drops:

From the broad declivities of the Sierra Nevada to the rock-bound shores of the neighboring ocean and from the icy summits of the Siskiyou to the sunny vales of the south, the geni of rural wealth lift their smiling faces from the soil and proclaim that law-giver the greatest benefactor to the commonwealth who advocates the most liberal enactment for founding agricultural institutions to stimulate agricultural enterprise.

Whether this broadly geographical metaphor, so ancient in political oratory, was ever invoked in behalf of farming, before Dr. Winslow flashed it before the legislature of 1854, we do not know, but "it worked fine" in its way. The society was created by a law passed nearly unanimously by the assembly, by a vote of 18 to 8 in the senate, and approved May 14, 1854. The society was given an appropriation of \$5,000 annually for four years, "to be used only for the paying of premiums." It was also provided that if the society should fail to hold a meeting for two years, all its real and other property should be sold under execution and the proceeds placed in the State treasury, whence only an act of the legislature could educe it. Thus the State prevented its own money from being used to acquire property and arranged to grab all the property which the society might otherwise acquire.

Fairs of the First Decade. — But the pioneers seemed not to be depressed by their hard bargain with the State, though they might have been otherwise discouraged if they had been less hopeful and determined. The (Continued on page 204.)



Livestock Will Be the Feature at the State Fair.

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EDITORIALS

OUR STATE FAIR.

WE HAVE been giving many days to continued research and thought about what California has been doing, ever since her birth, for industrial development through an organized agency, whose chief manifestation in the public eye is the State Fair. Of this organism the State Fair is the blossoming; the roots and stem are in popular appreciation and support; the fruit is to be found in public prosperity, which is, of course, the sum of individual prosperities. As we have been looking into this matter carefully in the light of the experience of the last sixty years, and as we try to project something permanently valuable to the State upon the foundation of this experience, it becomes very clear to us that the State government should, at the first possible moment, take up and liberally provide for reorganization and extension of the work of the State Board of Agriculture, so that it can adequately discharge functions which are now almost essential to the future development of the State in all industrial lines. It may be claimed that such intimation of scope is too broad and that it should be restricted to the agricultural line, but we doubt if such objection is well taken. The term "State Fair" has nothing distinctly agricultural in it, although agriculture predominates in the popular understanding of it, because, for half a century, agriculture has been our greatest industrial attainment and our greatest hope. But agriculture was attended by mining, mechanics, manufactures and trade in the very first movement of the State for its own development, and they have never been lost sight of. The first appropriation of public money ever made, that of 1854, was for "an exhibition of agricultural, mechanical, domestic manufactures and productions, and for no other purposes." And the broad symmetrical development of her industrial resources, which the California pioneers conceived and provided for, is the everlastingly true view, and therefore we contend that the State should broadly provide for it.

THE PRODUCERS' POINT OF VIEW.

THE fundamental reason why we contend for a potent and distinct effort of the State for industrial development, as an executive function of the State government, is because we discern the need of maintaining a producers' point of view in public discussions and transactions. To secure symmetry in development and real equity toward all who are interested, it is necessary that the point of view of those who are doing things should not be merged in the point of view of those who are investigating, thinking, and teaching about things which they do not themselves do. The latter is the academic point of view, and for the former point of view we can think at this moment of no single descriptive word. It is sometimes called "practical," but that word we dislike, because we very well know that views which are put forth under that guise are often less true, and therefore really less practical than opposing views which are of academic origin. If we could limit

the word practical to its source in practice, it might serve our present purpose, for then it would not beg the question of truth or error, with which we are not concerned at all in this connection. Let us say, then, that in the present, rapid building-up of sources of academic points of view, we are shooting the public eye so full of academic gleams that it can discern no other source of light, and this is not wise nor just to the academic interests nor to any other. Non-academic achievement, even though it be reached through light of academic research and instruction, is entitled to its own point of view and to appreciation of its non-academic contribution of experience of its understanding of environment and of its "coming through"—every item of which enters finally the academic treasury and is joyfully receipted for. It is all different from academic achievement, though finally merged in it, and it is therefore entitled to its existence and influence as a producer's point of view.

THE STATE SHOULD PROVIDE FOR IT.

THE State is providing most generously for the installation and equipment of the academic point of view in agriculture, the national government is supplementing the gifts of the State and the counties and individuals are helping to make all these provisions operative. A splendid system of academic operation is being built up, and its influence upon general prosperity and individual advancement will be almost incalculably great. It will now be wise for the State to provide lenses through which producers' points of view can be concentrated upon problems which should be held non-academic and called executive, protective, promotive, legislative—or, if you like, the "practical" aspects of things to be done—with the reservation about the word already noted. And this work should be centered on the basis now occupied by the State Board of Agriculture, and its great blossoming event in the public eye should be the State Fair. Its operator, either an individual or a board, should be constituted the industrial branch of the State government. It should be at work all the time upon problems which must be approached from the producers' point of view, and, upon such issues, should be the competent advisor to the governor and to the legislature. It is sadly confusing and exceedingly expensive to have a host of State officials messing away at concerns which are mixedly academic and executive, and perhaps the worst of it is that, in the present ascendancy of the academic motive, proper executive functions are not appreciated nor discharged, and even legislation itself is unduly influenced by the academic point of view, and the producers' point of view minimized or wholly ignored. The State now has a fine property and improvements for the equipment of a great promotive and regulative institution which shall serve producers' needs and opportunities, and contribute grandly to the development of the State in ways the pioneers dimly discerned, but which now lie in clear sunlight. Go to the State Fair, then, and while you are enjoying what you can of what it now is, think earnestly of what it ought to be.

RETURNING TO WHEAT.

BUT lest readers weary of our kind of statesmanship added to the other kind, which they are now getting in copious doses from presidential campaigners, we turn to something more concrete, and that is wheat. It seems very timely that the announcement should now come that Solano farmers propose to make their county again famous for wheat. Their attention has been awakened by the request for more home-grown wheat from the superintendent of the Sperry Flour Mills at South Vallejo. The Sperry mills have been forced to secure wheat from Washington, Oregon, Idaho and Kansas during the past few years, as California has come to produce less than half the wheat needed by our mills for local consumption and for their export trade. We have exhorted our readers previously on the desirability of more wheat-growing, and the coming year certainly seems a good time to start in, for European wheat-growing is considerably upset, and this year's world product is estimated by the International Institute of Agriculture to be 25 per cent less than

last year's crop or than the normal—we are not sure which, for we have both statements cabled. At any rate it is a quarter less than something, and that is a good deal. And so we shall be glad to ride through stretches of wheat again in Solano county rather than through stretches of idle land we have recently traversed. It is well also to remember that not only do we need wheat to eat, but we need as great an increase of the milling industry as we can get, because, while we are saving money by eating our own flour, the mills give us great volumes of mill feeds which we need to make milk and meat, and thus by eating our own flour and selling flour to others, we get plenty of things to eat with the wheat and by feeding the by-products of wheat we also get more manure for the land, and thus go farther in rational farming.

OH, THE POOR MIDDLEMAN!

THE poor middleman must feel lonely; no one seems to want him. Farmers became tired of him long ago, and have been making more or less frantic efforts to pry him loose from his absorbing job, and some of these efforts are succeeding quite well. But all the time farmers have been trying they have been told by commercial mentors and tormentors that if the middleman were torn off the pipe he has made the whole business would run away through the hole. And we have sometimes been scared into admission that, after all, the middleman may, perhaps, be necessary, and, if so, then he ought to be regulated as to the size of the hole he bored for his own benefit. But now we seem to be impelled to the conclusion that the best way to cuddle the middleman must be to knock him in the head. And we surely could not reach that dreadful conclusion by our own bravery. When, however, the conclusion is offered us by those who are recognized as masters of high finance and high commerce, how can we longer admit that the middleman may be necessary? The great canners' merger, of which we gave a hint last week, seems to be going ahead finely, and has heaped up a fund of, perhaps, twenty-five million dollars, with which it proposes to swallow all its component parts at more than 50 per cent above their par value. And what are they doing it for? We do not know of ourselves, but Charles Remington, who knows the wild beasts of finance very well, says this:

The question has frequently been asked as to what economies would be effected by the merger of fruit canneries, pineapple canneries, salmon packing establishments, etc., none of which is engaged in the same kind of business. It is pointed out that the chief economy would come through the elimination of duplicate distributing organizations. At present, the cost of getting these wares into the hands of retailers is a large part of the aggregate cost of conducting the business. This has led to the conclusion that the combined properties are being assembled in the interest of some concern already having an organization for the distribution of food products.

We take it that the words "elimination of duplicate distributing organizations" is high commercial language, which means "fire a lot of middlemen." It cannot mean to get rid of bunches of hard-worked and under-paid clerks and roustabouts, for that would not be worth twenty-five millions, or any part of it, because about the same number of such functionaries will be required to handle the same volume of products under any system. Therefore, we conclude that there are only two excuses for such costly re-arrangement: one is to cheapen the buying of materials for canning by ruling out competition for it; the other is the sloughing off of a lot of distribution pipes, each riddled with suck-holes for middlemen. For the

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., August 22, 1916.

STATIONS	Part Week	Rainfall Data		Temperature Data	
		Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka	0	1.46	.14	81	48
Red Bluff	0	.63	0	102	50
Sacramento	0	.07	0	93	54
San Francisco	0	.25	.01	84	62
San Jose	0	0	.02	92	71
Independence	0	0	0	90	48
Fresno	0	0	0	100	54
San Luis Obispo	0	0	.03	80	46
Los Angeles	0	0	0	76	56
San Diego	0	.02	0	70	58



present we accept Mr. Remington's statement that the latter is the real reason, because we do not care for the other at this time. And our conclusion is that we have the dictate of high commerce that the middleman is not necessary to the "getting of wares into the hands of retailers," and therefore the ends sought by million-dollar growers' corporations and twenty-five-million canners' mergers are the same, and both of them good commercial procedures. Henceforth we hope to hear less of the divine rights and indispensability of middlemen.

THE FARM LABOR OUTLOOK.

HERE seems to be a general anticipation that the farm labor supply for the coming year is likely to be short. It was authoritatively stated recently that the number of Japanese in California is decreasing, and those still here are becoming less available because of their disposition to get into business for themselves. Last week, H. P. Stabler, horticultural commissioner of Sutter county, received word from A. Caminetti, United States Immigration Commissioner, that farmers can no longer depend upon Hindu and other imported labor in any quantities. He declares few Hindus are coming into this country, and the few other foreigners now arriving are going to the cities instead of to the country. Mr. Caminetti suggests the opening of farm labor registering bureaus in the interior towns, and such an agency has been opened at the Marysville Chamber of Commerce. There seem to be two reasons for knowing what can be done with men who are available. One is that if it is known that men can be used now or soon, those who are set free by the close of harvesting may be placed and kept in the rural communities instead of making their autumn rush for the cities as they are apt to do when no jobs are in sight. Another reason for making known future need for men is that they may be sent out from the cities continually, and thus part of the winter accumulation be prevented. If we are to be in short supply next season, it is none too soon to begin planning to make the best use of all that is available, and the community which holds on to its present supply will be advantaged. It seems to be a matter which all local agricultural organizations should take into consideration.

Siloing Corn Stalks.

To the Editor: Can you furnish me with reliable information of the feeding value of corn fodder ensilage? I have read it makes very good feed for milk cows, if properly cut and shocked. I have 40 acres, and intend going in the dairy business, but did not plant any corn this year, but can get all the fodder I want for the cutting and shocking. Will it pay me? I would like to know soon, so I can commence building my silos.—C. A., Santa Rosa.

A few reports of satisfactory experience in siloing dry corn stalks have come from the Central West, but we are not aware that success has been fully demonstrated or measured. As for available nutritives, analyses show that the mature corn plant (as a whole plant) has its maximum when the corn is ripe, and this is a sound foundation for the practice of cutting the plant for the silo considerably later than was at first thought desirable. It is also shown that corn stover (that is the ripe stalks with ears removed) is a better feed than was at first supposed, and that a "corn shredder" may add nearly a quarter to the benefit the animal will get from the same weight of whole stalks. It would, therefore, be a question in your case whether you should try siloing or shredding the stalks which you mention. With the assurance that they would be good roughage in either case—to be fed, of course, with milk-making concentrates. As, however, you wisely propose to build silos for future use, you assume little risk if you build one now and use it for siloing the stalks and make your own demonstration of the value of the practice. You will remember, of course, that in siloing dry stuff considerable water must be used, and this must be thoroughly mixed with the finely cut stuff, and not simply run into the silo to go to the bottom. The best way probably is to run a small stream into the blower pipe and blow it into the

silo with the cut stalks. Unless there is water enough and skillfully applied, you stand a good chance to get a silo full of manure.

Protecting Potatoes.

To the Editor: How can we keep our potatoes through the fall and winter till the new potatoes come, without sprouting? Will fumigating with carbon bisulphide kill the worms already in the potatoes and prevent others from working in? This is the treatment we employ for bean weevil.—C. D. H., Santa Cruz.

We know nothing but cold storage which will keep potatoes dormant. Keeping in a cool, dry place will retard but not prevent sprouting. Bisulphide, if the fumes are held on the potatoes for 24 hours, will kill all worms, and 48 hours will kill all eggs present at the time. It will not prevent the moth from starting others later, if she can get access to the potatoes. If you can cover or screen her out that will settle the business. The moth likes the California climate well enough to be active most of the year!

Pollination of Prunes.

To the Editor: Will French prunes pollinize Imperials, and will Imperials pollinize Robes, and vice versa? If they will, how should they be planted—in blocks, each variety to itself, or by alternating the varieties in rows? What other variety would be well to mix in?—W. G., Yuba City.

We understand that the University pomologists have been trying some experiments this year to show the attitudes of the different prunes to each other in pollination, but results are not yet available. It has been the current belief among growers that the French prune is self-fertile; that the Robe is helped by association with other varieties, and that the Imperial is undetermined—for its shyness is apparently due to other causes, such as thrips, etc., to which it seems to be particularly subject. It needs definite demonstrations to settle your questions. We should plant prunes in blocks of, perhaps, five rows, and alternate the blocks. In that way one might get all the advantage there is in pollination and lessen the danger of mixing varieties in gathering. What variety is entitled to rank as best cross-pollinator is not determined.

Blasting in Vineyards.

To the Editor: Might blasting near four-year-old Thompson vines prove of value? In some spots of my vineyards vines have not grown well. I have applied manure without great results. I attribute the trouble to hardpan near the surface. Is there any danger of killing the vines by blasting too close to them?—G. W., Yuba City.

Blasting between vines was satisfactorily and beneficially done by the late James Rutter of Florin about forty years ago. He was careful to make the holes midway between each four vines and succeeded in shattering the hardpan without injuring the vines; in fact, he notably improved their growth and bearing. That was a case in which a definite plate of hard pan lay near the surface and over a free subsoil to which roots were enabled to penetrate and surplus water to escape by the blasting. Of course, one has to be wise as to the amount and character of powder used. It is now the time to do it, so that coming rains may resettle the ground enough.

Surety of Kind in Grafting.

To the Editor: In grafting young prune trees, is it necessary to have wood from bearing trees?—Beginner, Marysville.

It is not necessary from the point of view of getting a grafted tree, but exactly what kind of fruit the tree will bear depends upon taking scions from a tree which is seen to be bearing the kind of fruit you desire. Of course, an experienced grower may recognize the characteristic wood and leaf growth of a variety, but this will not show whether the fruit is a good type of its kind. Therefore, in taking scions one should know whether the parent tree is bearing the right type and is prolific at it, and only the observation of the tree in bearing gives that knowledge. This test is not widely insisted upon, perhaps, but it ought to be. Propagation should be only from the best trees.

Dodder and Frost.

To the Editor: Will dodder in alfalfa be killed by frost? If so, how cold would it have to be, provided the alfalfa was cut down as close as possible late in the fall? I have kept the alfalfa cut close at frequent intervals, and do not think the dodder has had, nor will have, a chance to go to seed.—J. M. H., San Francisco.

Frost will not kill dodder. It thrives wherever alfalfa grows—in Europe, the Eastern States, etc. Frost cannot kill out dodder because this year's dodder will probably be dead before the frost comes. The plant has no perennial root; each generation has to come from the seed, and seed that ripens late will remain dormant over the winter. The danger that you may not kill it out by cutting lies in the fact that it may make a bloom or two below the cutting point, and the bloom is so small and inconspicuous that you may not notice it. But the chances are that you may exclude it by close cutting.

Failing Raspberry Hybrids.

To the Editor: I send living tips and dead canes of some of my raspberry bushes which seem to be failing. For the last eight years the bushes have grown higher than my head. This, the ninth year, they are not more than two or three feet tall and many of them began to die almost as soon as the berries began to ripen. What is the matter with them?—Grower, Marin county.

We do not find anything on the specimens you send to account for the failing, thrift of the plants which you describe. There is no sign of parasites on these parts of the plants. It is likely that the trouble is in the soil or in the roots. You should look at the roots for swellings or other signs of root-pests. If you do not find them it is possible that you have been using the same ground too long for berries. If you have not manured the ground it is probably worn out for berries, which like to be fed well. Whether you find root troubles or not, it would be desirable to take the best of the healthy young plants and re-set them on new ground and use the berry patch for growing vegetables for a few years, using plenty of manure and after that it can be planted with berries again, if you desire.

Collapse of Eggplants.

To the Editor: Please tell me if eggplants are thirsty or better handled with an amount of moisture that satisfies tomatoes. My eggplants are inclined to go pale and rusty and succumb—a nuisance when selling fruit.—E. E., Yountville.

Our observation is that eggplants can be given water liberally with less danger than tomatoes. The fact seems to be, not that the tomato plant does not like water but likes it too well and therefore gets so riotously drunk that it kicks off its blossoms so that it can give all its energy to imperial expansion, as it were. The eggplant does not seem to be so hotheaded and is better inclined to turn more water into larger fruit. But from what you say of the aspect of the plant we apprehend that it is not a question of more or less water. The eggplant is subject to fungous invasion and to other organisms which are little understood which cause collapse. So far as is now known the best treatment is avoidance—by planting each year on soil not recently occupied by the plant.

Farm Loan Associations.

To the Editor: We are taking steps to form a Farm Loan Association and would like to know exact rules and probable interest rate for California.—E. A. G., Merced.

As we have already said, the farm loan business under government auspices cannot actually begin until the Farm Loan Board organizes the machinery and issues certain regulations which the law provides for. Much can be learned toward organization by the careful study of the law itself and applications for copies of that can be addressed "Farm Loan Board, U. S. Treasury, Washington, D. C." Such an application will probably bring subsequent publications concerning regulations, etc. The interest rate is still to be definitely established through the district bank for this district when it shall be established.

Six Decades of California Fairs.

(Continued from first page.)

first State Fair was held in San Francisco in October, 1854, with a cattle show at the Mission and an indoor exhibit in Musical Hall. The fair of 1855 held its display of farm products in the Assembly Chamber in Sacramento and its cattle show at the Louisiana Race Track. There were no publications by the society about the fairs of 1854 and 1855, and it is impossible to discern the exact truth about either of them, but it is probable that the displays were smaller than expected. It is on record that premiums amounting to \$4,660 were paid in 1854 and \$6,650 in 1855, but as some awards were as high as \$75 and \$100, and the common run of first premiums was \$50 and seconds \$25, it would not take many exhibits to get away with that much money.

As nearly as we can judge, the first really good exhibition was the third State Fair held in San Jose in 1856. The fourth, in 1857, was held in Stockton, the fifth, in 1858, in Marysville; the sixth, in 1859 in Sacramento, and a contemporary record says, "the State Fair returns to Sacramento never more to travel." The real fact is that in that year a most fierce fight arose as to whether the State Fair should be permanently located at the state capital or should continue to be peripatetic. The question was overwhelmingly foreshadowed by a mail-vote of all members in 1860, Sacramento receiving 431 votes against a scattering of 4 for other places in the State. This result was predestined by the fact that Sacramento had raised by special tax \$30,000 for the erection of a pavilion, and provided also land for races and stock shows which the State appropriated \$15,000 to improve; also by the fact that Sacramento had a vast majority of the voting membership. The question of permanent location thus decided, arose occasionally afterwards in seasons of discontent over various issues, but never assumed very acute form. All the regular State Fairs since 1859 have been held in Sacramento, though special exhibitions, such as a run of "citrus fairs," have been held under the auspices of the central society in other parts of the State, as provided in various appropriation bills passed by the legislature.

It will be obviously impossible to look into the details of about 60 regular State Fairs, to say nothing of special exhibitions, nor would readers generally have patience to pursue the results of such an undertaking. We have about 50 volumes of the "reports," which are a treasury to be drawn upon when one needs special facts or points of view belonging to the agricultural development of the State. The State Agricultural Society has, in fact, written much history of which we have no other record, and its service, in this respect, will grow in value as the years run on. In this connection we shall only discuss a few points which are either unique or formative in the character of the society, as it has thus far advanced on its career.

The Visiting Committees.—From a historical point of view the most important work which the State So-

ciety has ever accomplished is to be found in the reports of its "Visiting Committees" which traversed the State, noting the achievements of the pioneer fruit-growers and farmers. This research began in 1856 and continued until 1861. Naturally, looking backward in the case of each achievement, efforts were traced to their very beginning. This was an original undertaking, and recognized to be such, for it is stated in 1859: "We are not aware of another instance in which a society, through visiting committees, has undertaken to explore and examine the mining, agricultural, mechanical and manufacturing interests of a vast State, and place on permanent record full details of its extensive and varied resources. This novel work was brought into being by the peculiarity of our circumstances." When one remembers that travel in those days was wholly by private or stage teams, except now and then with a lift on a river boat, it is easier to appreciate the effort to thread the State from sea to mountains through its entire length, seek-

and "heal all differences, unjust rivalries and petty jealousies that have grown up between us and every part of the State." At the fair of 1860 the president, T. G. Phelps, said: "This society has offered premiums for a multitude of neglected products to put a stop to importation. It is humiliating that we are receiving from New York and Boston large supplies of cured meats, while carcass beef is worth hardly half as much here as there. We are shipping barley to New York, a distance of 17,000 miles by sea, and receiving in return, pork, hams, bacon, and lard made from grain of the same grade, while it has been demonstrated that they can be cured in this climate as well as in any other." And the president would surely have felt humiliated if he had known that the same sort of thing would prevail, to too great an extent, even half a century later, and that we would stand today, hoping the same old hope, but fortunately far less hopelessly, for great production and export have been attained as the result of the pioneer efforts.

A Great Drive for Home Production.—Probably no state has ever made a greater effort for home production than the California legislature of 1862 authorized the State

quadrupled for greater quantities produced. We do not find that any such premiums were either claimed or awarded. The State therefore had its great run of publicity for less than one-tenth of its money. Agriculturally, nothing but the stimulation of hop growing can be connected with the offer in any way. The present rice, cotton and tobacco growing, arising more than a third of a century later, rest upon other foundations entirely. It is clear to see now that the great awards of 1862 were either for achievements then economically impossible, or for other achievements which will always be physically impossible in this state. Even our great sugar production of today is entirely disconnected, because the State offer was projected upon the basis of tropical sugar-cane—the growth of which in this state was a dream, like that of coffee and indigo.

The fairs of the second decade went through quite as well as one could expect from the distraction due to the civil war, which gave Eastern people something else to think of than of California. The society received four or five thousand dollars a year for premiums, except in two years. In 1861 it lost all its books, manuscripts, etc., through a flood which submerged the first floor of the pavilion. During the first part of the decade it accumulated a debt of nearly twenty thousand dollars, which it cleared away before 1869.

Supremacy of the Horse Race.—During the third decade considerable improvements were made in the pavilion and the stock grounds and debt was again incurred. The impression began widely to prevail that too much attention was being paid to speed of horses and to the games of chance attendant upon it. Other games of chance also seemed to have sway and gambling of all kinds were almost riotously indulged in during the fair. When shell-games beset their pathways and roulette wheels were running under the grand stand and when "260 stables were built for horses and 191 for cattle on the grounds," the farmers held that the fairs were agricultural only in name. This attitude maintained for several years led to the reduction of appropriations by the legislature, to the reduction of state printing to little more than statement of premiums awarded and to unpopularity with all but the sporting classes and those who were directly interested in bringing people together to get trade from them. It was truly stated that no state money was expended for horse racing; that, in fact, the income from racing helped to pay for the rest of the shows, but this did not satisfy the complainants and it was satisfactory to them that the new constitution of 1879 forbade the expenditure of any state money except by authorized state officers—thus apparently cutting off supplies from the State Agricultural Society because it had private memberships and election of its own officers.

The State Board of Agriculture.—Although the laws, from 1854 onward, speak of the officers of the State Agricultural Society as a "Board of Agriculture," there was really no "State Board of Agriculture" until such a body was created by the act of 1880.

(Continued on page 224.)



P. F. L. E. Shire Mare Winners, Owned and Exhibited at State Fair by Black Hawk Stock Ranch. Left to Right: Flawford Daisy, Horton Felicity, Horton Bounce, Black Hawk Beauty, Black Hawk Cherrie.

ing the scattered pioneers, seeing their work and noting their conclusions concerning the experimental work which they were all doing, and awarding premiums to those who seemed to be reaching significant results. In 1856, seven men reached farms and gardens through the whole country from Chico southward through the Sacramento valley and the valleys around the bay; eastward into the foothills, and southward again to Los Angeles and vicinity. They served without compensation, but were amply sustained by patriotic joy in knowing and making known what Californians could do to demonstrate the capabilities of the State.

Fairs of the Second Decade.—The chief effort of the society in premiums and publications was apparently the promotion of cultures and manufactures to meet California's needs and to establish expert trade. The fairs were regularly held and were usually creditable notwithstanding the fact, as noted, that permanent establishment in Sacramento led to the holding of district and county fairs, "not as aids to the State, society, but as rivals to it." But promotion of cultures seemed the chief line of effort, which it was hoped would not only serve well the State

Agricultural Society to undertake. Premiums of \$114,400 were offered for specified commercial quantities of agricultural and mechanical productions. Some of the former were as follows: For cotton plantations and products \$15,500; for hemp and flax \$7,200; for sugar and molasses \$3,700; for tobacco \$3,600; for rice \$4,700; for hops \$2,200; for tea and coffee \$12,000; for silk \$2,000; for linseed and cotton and oil \$2,000; for indigo \$1,000. The balance of large sum first mentioned, was offered in similar large lumps for manufactures of linen, cotton and woolen fabrics, carpets, blankets, knit goods, forest products, shoes, etc., etc., . The bounty offer attracted wide attention. Payments to the amount of \$12,950 were made after the fairs of 1863 and 1864. Of this total, \$4,000 were paid for cotton growing, \$300 for tobacco, \$250 for hops, \$1,000 for tar, rosin and turpentine and about \$7,000 for manufactures having no agricultural basis. From 1865 to 1868 attention was prominently called to these great state premiums with the announcement in 1868 that fractional amounts of the money would be given for fractional parts of the quantities specified and that the awards would be doubled or

What You Will See at the State Fair.

The best State Fair ever held will delight you September 2-9. Several new buildings are completed, and about \$7,000 more offered in premiums than in 1914 when they totaled \$37,712. Over 100,000 people attended in 1914, the last State Fair.

[Written for Pacific Rural Press.]

All hail yourselves, to the State Fair and make a joyful noise! If you haven't had a vacation, take it here with the boys—and girls—and mothers—and babies. The week will be so full of events that you will have to watch or you will lose sight of the grand chance to get acquainted with the state's leading livestock breeders and to see their best stock with just a little walking around. Don't fail to see also the County, State, and University agricultural exhibits, and the tractors and machinery, also the poultry in its enlarged quarters. Livestock and poultry are discussed more fully in their departments of this issue. Treat yourselves to the sight of a horse race, too. It won't cost you anything extra. In many respects, the 1916

clean as a creamery. A cross-aisle, cutting the center of all the hog sheds, leads to an informal judging ring provided with seats for spectators.

It is to be a lively fair from the standpoint of events, too. Among other meetings will be that of the Western American Berkshire Congress, who will also hold a sale. Rucker & Coppin will hold a sale of Durocs, and Walter H. Dupee will sell some of his Guernseys at auction. State Fair sales have heretofore proved good places to get good stock cheap. The opening day will witness the dedication of the new Women's Building with the Governor speaking. Monday is Labor Day and Tractor Demonstration day. Saturday is Admission Day. All

cents. Family tickets for the entire Fair can be obtained for \$5. There will be side shows, merry-go-rounds, and restaurants on the grounds, and be sure to use the new Women's Building. McKinley Park and five acres of extra space will be available for parking automobiles, free under the eyes of an official attendant.

Machinery and Tractors.—Tractor interest is greatly awakened. At least seven manufacturers will have machines there, and the tractor demonstrations will draw great crowds. Interest among machinery exhibitors seems low. One pump company asked an engine company for use of an engine to run its pump through the Fair, but nothing doing. There are no premiums for machinery because it is unsatisfactory to judge. Part of machinery hall will be taken up by exhibits of automobile accessories.

However, the following people will have all the space they need and will make a show worth going a long way to see if you are going to be interested in their products:

ramento; Miller-Coffing Co.; Studebaker Co.; J. E. White; J. D. Lauppe; Arnold Bros.; Cuyler Lee; Peterson; Sellenger, Sacramento; Skinner & Elliott, Stockton; and Don Lee, California.

They will show not only models of their cars and chassis, but also the latest accessories such as oil, vaporizers, springs, headlight dimmers, etc., etc.

WHO WAS THE FOOL?

[Written for Pacific Rural Press.]

We recently met a man who has been weighing and testing his milk for a number of years. Also he has been using purebred bulls. At first, he says, he was the laughing stock of the community. Other dairymen called him a fool for paying a hundred dollars for a bull when they could get bull calves from their neighbors at veal prices.

As the years went by, our friend with the registered bulls kept increasing his average net income per cow. But nobody knew this because



Manufacturers, Horticultural, and Machinery Buildings, California State Fair. New Women's Building Just Beyond the Manufacturers at the Left. Livestock Both at Right and Left of Horticultural Building with a Great Distance Between.

State Fair at Sacramento, September 2-9, will be the greatest ever. In many classes all space had been allotted before mid-August and late applications were causing much extra activity on the part of the management. Most if not practically all of the exhibitors who are named in other columns of this issue, have the added advantage of having seen or exhibited at the Panama-Pacific last year. Dairy cattle, horses, hogs, and poultry will be especially strong. The hog capacity has been nearly doubled by construction of six new sheds, each as long as the old ones and covering two lines of pens. The poultry capacity has been about doubled by an addition to the poultry building, surrounding an open court. The new women's building, of plain architecture outside, is fitted with all the conveniences to make tired sight-seers comfortable; and a nursery will be provided so mothers may leave their children safely under official care.

All the old buildings have been most thoroughly cleaned, and those not painted are whitewashed outside. The insides of the stock sheds and barns have also been whitewashed, even the floors, so that the cattle sheds and hog pens smell sweet and

through the Fair Joe Boquel will fly every afternoon and evening, looping the loop within the loop in afternoons and carrying fireworks in the evenings. A head-on collision of two 50-ton steam locomotives will give a thrill on one day. At the last Fair the receipts on the day of the collision were $2\frac{1}{2}$ times any other day and amounted to \$17,000. There will be horse races as usual.

For accommodation of visitors a man will be placed at each railway station to direct them to the Chamber of Commerce, where a register of available rooms and prices will be kept for free and ready reference. Large signs over the highways will direct automobilists and others. The Accommodation Committee of the Chamber of Commerce is using its influence as well as the advertising value of their register to prevent any hotels, restaurants, or rooming houses charging more than usual. There are many places in Sacramento where clean rooms and good beds can be obtained for 50 cents and good meals at 25 cents.

All railroads and steamboats give reduced rates to Sacramento. Transportation from the city to Fair Grounds will cost 5 cents and entrance for all over 15 years old, 50

Bean Spray Pump Co., San Jose; Baker & Hamilton, San Francisco; Byron Jackson Pump Co., Berkeley; T. G. Schmeiser, Davis; Victory Motor Co., Niles; Yuba Construction Co., Marysville; Harris Mfg. Co., Stockton; Edw. P. Bacon Co., San Francisco, Cal.; Junior Monarch Hay Press Co., San Leandro; A. L. Young Machinery Co., San Francisco, Cal.; Samson Iron Works, Stockton; and several makers of dairy supplies whose names will be found in the article on Livestock at the State Fair.

A miniature rice mill will be shown.

Exhibitors of tractors were named at length in last week's issue. They are, up to this writing, as follows:

Yuba Construction Co., San Francisco; Holt Mfg. Co., Stockton; Samson Iron Works, Stockton; Dauch Mfg. Co., Los Angeles; Best Gas Traction Co., San Leandro; Bates Steel Mule Co., Los Angeles; and Hughson & Merton with the Big Bulls.

Automobiles.—A feature is to be made of the automobile and motor truck show, the people named below having entered up to date:

J. F. Pieper Co.; Lincoln Highway Garage; Graham & Lamus Co., Sac-

ramento; Miller-Coffing Co.; Studebaker Co.; J. E. White; J. D. Lauppe; Arnold Bros.; Cuyler Lee; Peterson; Sellenger, Sacramento; Skinner & Elliott, Stockton; and Don Lee, California.

They will show not only models of their cars and chassis, but also the latest accessories such as oil, vaporizers, springs, headlight dimmers, etc., etc.

Not a few of them have got to the point where they buy registered bulls; and strange enough, they buy them of that crazy neighbor of theirs who has been adding a few registered cows to his herd from time to time. Needless to say he is considered a good business man now, but what a difference a few years have made!

Spanish Grapes and Almonds.

[Written for Pacific Rural Press.]

As one of our greatest nut and fruit competitors is Spain, a few notes from consular and other reports will help forecast and interpret our own market.

Grapes.—The Malaga district produced about 22,000,000 pounds of raisins in 1915. All of their 1914 holdover and about 19,800,000 pounds of the 1915 crop had been disposed of by Jan. 31, 1916. Growers received high prices, partly due to non-exportation of Turkish raisins and partial loss of the Denia crop. Of the Denias, U. S. received only 788 cases of 110 pounds each last season as against 2,041 in 1914-15 and 8456 in 1913-14. The British embargo will make them seek another outlet this season. The British Isles took 96,000 cases last year.

Almeria exports most of her grapes fresh, and these compete with our Emperors. Last year the growers had a short crop because

they had no money with which to buy fertilizers and spray materials. This year they are taking better care of vines and crops due to high prices received last year. United States took 327,402 barrels of 45 to 50 pounds net last year, which was about half of our imports from Almeria in each of the two preceding years.

Almonds.—In 1915, U. S. imported 8,782,784 pounds of shelled and unshelled almonds from Spain, 6,549,132 pounds from Italy, and 1,239,678 from France.

Our own crop was estimated at 7,600,000 pounds. The consular report has it that at the beginning of 1916 Spanish Jordans were almost exhausted, but supplies of medium and large almonds still remained in the hands of speculators.

As previously reported in our market columns, the Spanish Tarragonas are nearly a normal crop.

What Should He Have Done?

[Written for Pacific Rural Press.]

We found John Soto, one of the fresh-fruit inspectors at Newcastle, on his knees surrounded by half a dozen half-unpacked crates of plums from a wagonload just brought to one house.

The law specifies that fruit in the common "grape baskets" having sloping sides (almost all plums are packed in them) "shall not vary more than 10 per cent in size, and no layer below the top layer shall contain a greater numerical count than the top layer." These baskets are packed four per crate.

All of the half-unpacked crates around Mr. Soto had been packed beautifully though not very tight, with 4 plums square on the top layer of each basket, and the crates marked 4x4 pack. Mr. Soto repacked one, to show that they should have been a certain kind of 4x5 pack which brings slightly lower prices. The middle layers were all of a loose 4x5 pack that should have been 5x5, and the bottom layers were all of smaller misshapen unevenly sized green plums just rolled in. Some of the plums were much riper than others, some were badly cracked and even oozing juice, some had big scabbed-over depressions. Mr. Soto was in a quandary.

"This man's wife used to pack his fruit; and she put up a good reliable pack. She is sick now, and in a hospital. The poor fellow is out there alone, trying to do the ranch work and housework; and he hasn't enough money to get along on. Hold one crate to show him and call me

when he comes in, this afternoon. Mark the rest '4x5' and let them go this time. Plums must go forward without delay or they are likely to spoil before they can be sold. I hate to be hard on a man. But he will have to come up to the mark after this."

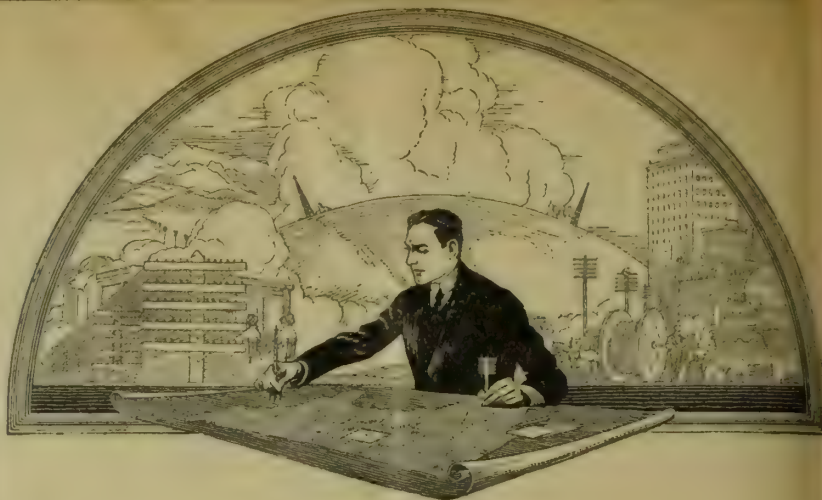
MUST REDLANDS CITRUS GROWERS FIGHT FROST?

[Written for Pacific Rural Press.]

We printed a picture Mar. 18, of the snow-capped mountains around Redlands and Highlands. The legend suggested that "the cold air currents from these mountains make frost fighting preparedness a good investment." R. O. Bonnell of the Redlands Chamber of Commerce writes that this is all wrong; that these districts, being close to the mountains are freer from frost than other citrus districts; that "not more than 1 per cent of the groves in Redlands have smudge pots"; that in the past four years "we have had but four days which were cold enough to make frost fighting worth while"; that two of these were during the freak freeze of 1913; that even this did not hurt the trees materially in this district, though even "those who had smudge pots did not save their fruit. This year found the temperature down to 27 once but then only for a short time"; and that frost fighting preparedness does not pay in the Redlands-Highlands district.

We are glad to correct the possible impression that Redlands is worse endangered by frost than other districts and to give her credit for being relatively safe.

But we do not agree with his conclusions regarding the desirability of unpreparedness. In many districts which may have been colder than Redlands in 1913, even lemon fruits were saved by frost pots, so if the Redlands growers with pots did not save their fruit it must have been due to poor manipulation. How many frost pots and years of their maintenance could be balanced against the loss of that one crop in



Engineering the Telephone

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1913—to say nothing of the fruit-wood-bearing branches that were killed?

The temperatures and damage admitted in Mr. Bonnell's protest are rare to be sure, but they show the chance that at any time the damage may far overbalance the cost of maintaining frost protection. His figures, too, are from government records taken at less frosty points than many of the orange orchards. Even these show lowest monthly temperatures of 30 or below, 12 times in the years 1908 to 1914 inclusive. So we still believe that those Redlands growers who have used frost-fighting equipment consistently are ahead of the game even if they don't need it as much as some other districts.

NORTHERN AVOCADO VARIETIES.

[By C. R. Benedict, Marysville.]

Butte county has the most northerly semi-tropical nurseries and gardens in this country, if not in the world. These are the Butte County Foothill Nurseries and Gardens, located at Sunny Slope, in the already famous orange and olive section,—the warm foothill belt of southeastern Butte county.

And it is now an accepted fact that the avocado will not only grow in Butte county's northern latitude, but that it will thrive and produce there: that it will thrive under the same conditions as the orange; that it will both live and bear fruit longer; that it will grow faster; that it will stand even a greater degree of cold than will a citrus tree of the same age; that it requires less attention than a citrus tree, and is so far practically free from pests.

Among the ahuate varieties found, by the Butte County Foothill Nurseries, to be so far well adapted to conditions in northern and central California, are the "Harmon," originally imported from South America,—a very early producer of thin-skinned oval fruit, free from "rag" or fibre, and of a very rich, oily flavor; the "Northrup," a thin-skinned variety from Mexico, hardy and vigorous and fine for a home garden, being especially valued for its lack of fibre and its rich flavor, and yielding a crop both spring and fall. The "Chappelow" is one of the early varieties in California. Like the Northrup, the Chappelow is also a Mexican type, the parent tree at Monrovia having been sent the Department about 1896 from some high and frosty elevation in northern Mexico. Its slender, long-necked fruit is very attractive, being dark purple in color, and of exceptionally fine flavor.

GRAPES DIDN'T SET.

To the Editor: We have Thompson Seedless grapes planted on sandy soil. They are thrifty and six years old but bear no grapes.—Sub., Martinez.

[A reduced sap flow at blooming season is necessary to set grapes. Delay the plowing until blooming time; then plow deep to cut surface roots and reduce sap flow. By the time new rootlets have formed, the fruit will be set, and ready to use the sap they send. Avoid all irrigation until June at the earliest; then if

you have water, give it to develop berries and support the leaves so there will be no sunburn. This is recommended by Frank Henry of Fresno and practiced by A. B. Cate and Chas. Westrup of Clovis; W. W. Phillips and J. W. Dawson of Fresno; J. A. Schlueter, F. H. Booth, B. H. Fisher, W. H. Wilson, and C. K. Hays of Kerman; S. G. Wilkinson, Peterson Bros., De Lano Bros., and J. Zalian of Sanger; and O. D. Smith of Monmouth.

The Nutrition Laboratory of the University of California has recently analyzed a number of grain sorghums, including kaoliangs, white, brown and buff durras, and feterita. The average of these, so far as chemical analyses indicate, is a close agreement with that of Indian corn. When the price of grain sorghums is considerably below that of Indian corn, it is advisable for the feeder to use them, particularly for poultry.

10,850 MILES WITHOUT STOPPING THE MOTOR KING EIGHT CYLINDER

A registered STOCK car (everything stock—gear ratio, ignition, tires, wheels, etc.) made this unparalleled record in a Car Owners' Service Test conducted under OFFICIAL A. A. A. sanction and supervision.

Sheepshead Bay Speedway and Long Island, New York roads were the scenes of this sensational trial which began at 12:14 P. M. June 15th and finished at 12:14 P. M. June 29th. Officials of the American Automobile Association maintained a daily 24 hour vigil during the entire two weeks. Many newspaper and motor journal representatives and parts manufacturers were in constant attendance.

The sturdy KING ran day and night through rain, fog and boiling sun without requiring a single replacement or adjustment.

10,850 miles equals about two years' travel in the hands of the average owner, yet in this entire mileage the car was stopped (with the motor running) for a total of but 15 hours, 25 min. 41 sec. On this basis the test demonstrated that a KING EIGHT, even with the motor running continuously for two years, requires only *nine minutes per week* of an owner's attention for *all* service—gasoline, water and oil fillings, tire changes, battery care, etc.

And most astounding of all, the KING made this 10,850 miles with a total labor expense of considerably less than *ten dollars*.

During the entire 10,850 miles a weight equal to five passengers was carried and the car maintained an average speed of 34 miles per hour, excluding stops.

An examination made after the test proved the car to be in perfect running condition and ready for another trial of the same or greater length.

This great KING achievement tops off the series of remarkable road tests recently conducted on the Pacific and Atlantic seaboard. Climbing tortuous Mt. Wilson in Southern California sealed in high gear; traveling 987 miles in high gear from Los Angeles to San Francisco and return, and driving 544 miles in high gear from Providence to Providence via Albany and New York City, are three remarkable accomplishments of the eight cylinder KING all within a fortnight.

The accuracy of every statement in this advertisement can be proved by impartial, official documents. These gruelling trials have raised still higher the proud estate of KING ownership, and to prospective car purchasers this pioneer eight cylinder car now offers a record which can mean nothing less than ABSOLUTE SATISFACTION IN PERFORMANCE, SERVICE and OPERATION ECONOMY.

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Works: West Berkeley, Cal.

Available Nitrogen---400 Lbs. for \$6.

[By C. A. Beinhorn, Field Manager for Balaam & Beinhorn, Naranja.]

On Sept. 15, 1915, I commenced planting cover crop in the Balaam and Beinhorn orchard, broadcasting 18 pounds of melilotus seed and five pounds of bur clover seed to the acre, inoculated with "Westrobac." The planting took about 11 days. The ground had been irrigated and cultivated just afterward, to a depth of about two inches. In ten weeks from the time the seed appeared in plant form above the soil, some of this clover had grown to be 31 inches high. In the latter part of February, I dug up several root systems of the melilotus clover and carefully washed the earth away from the nodules on the roots. Some counts went as low as 52 nodules to the root, while the highest went 182 nodules to the root. These nodules to the naked eye would seem to be about three times as large as the seed of a bur clover plant, while some were as large as a vetch seed, and very reddish brown in color.

Nitrogen Figured.—The weight of each nodule would be about the same as that of an individual seed, and as the average number of nodules to each root was 117, it would appear that the weight of the nodules collectively would be 117 times the weight of the seed that actually sprouted and grew. In view of the fact 5 pounds of bur clover seed was planted, on which I did not take the count, I will estimate that 12 pounds of the melilotus clover seed grew. As the nodules appeared to be 117 times as heavy as the seeds, 12x117, or 1404 pounds of nodules to the acre. If 20 per cent of this were

available nitrogen, we would have 20x1404, or 280 pounds of available nitrogen to the acre from these nodules alone, from the melilotus clover, not counting the bur clover.

Again: the melilotus and bur clover, if it had been cut in hay form, was estimated by three men, one of whom is a professor of agriculture at Riverside, to run three tons of hay to the acre. Prof. Vaile of the Riverside Experiment Station estimates that 2 per cent of the net weight of this clover top is available nitrogen. Thus we would have .02x6000 pounds, or 120 pounds of nitrogen from this source, making a total of 400 pounds of available nitrogen per acre from this cover crop. In addition to this, we have the full benefit of all this cover crop foliage, in the form of mulch. This is absolutely essential for good cultivation and proper irrigation.

In order to obtain nitrogen from sulphates of ammonia to the same extent as from the melilotus cover crop, it would cost at least \$45 per acre, not including the cost of application. The entire cost of the melilotus crop runs about \$6 per acre, figured as follows: Westrobac, per acre, \$2; seed, 18 pounds at 7 cents, \$1.26; bur clover, 5 pounds at 10 cents, 50c; preparing seed and sowing, \$1.25; extra harrowing, \$1.00.

I will say that a cover crop of this nature adds greatly to the moisture-retaining properties of the soil, and I will be glad to give the results of my experience on this point next November.

GROW SEED POTATOES.

[Written for Pacific Rural Press by T. O. Morrison, Washington State Division of Horticulture.]

Replying to your letter of August 5, I am of the opinion that the value of seed depends more upon the care exercised in growing and selection of the strain than the locality where it is grown. We may soon realize that careful selection and proper storage will be more important than the exchanging of seed from one district to another. This, however, is a point on which many growers as well as potato specialists do not agree. I am just in receipt of a report from one of our field men saying:

"The majority of the potato men in this locality are either beginning to or will soon use outside seed. Most of the Minnesota seed shows 20 to 100 per cent better yield than seed grown at home."

In other instances, the reverse is true; and I believe one reason for the poor results from so much of the home-grown seed is that it was not really grown for a seed crop and consequently received little of the attention that should be given the crop when grown for seed purposes. The growers in this State are just beginning to wake up to the necessity and actual importance of clean seed of strong vitality.

In order to encourage and demonstrate the practical value of seed potato selection we are co-operating with two large growers in the vicinity of Outlook, Wash., hoping that we may be able to assist them in

producing at least a very nearly clean crop that would be desirable for seed purposes. If the results are satisfactory, I believe a number of other growers will try to duplicate it next year.

FALL ALFALFA SEEDING.

[Written for Pacific Rural Press.]

While there is much difference in opinion as to the best time of year to plant alfalfa, F. Stenzel, a large Holstein breeder of Alameda county, has had best results on heavy black soil in the late fall and early winter.

The right time to plant alfalfa, according to Mr. Stenzel, is when the soil can be gotten into a fine seed-bed condition. That is, he has no special calendar date but waits till the ground is in as good condition as would be required for good germination of garden seed.

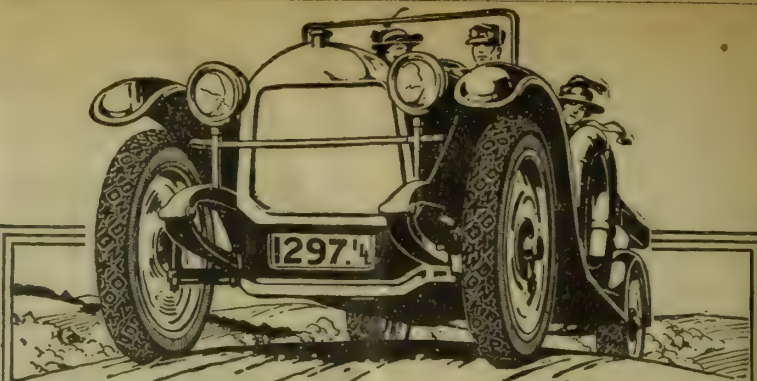
When planted at such times he has never failed to get a good stand, regardless of later frosts, but he has found that under his conditions he gets a better stand and more vigorous plants if the ground is summer fallowed the season previous to seeding.

BEARDLESS BARLEY.

To the Editor: Is there a beardless barley, and where can I get some?—M. T., Moraga.

[Answered by John Cook of Moore Ferguson Co.]

[Beardless barley is grown in a limited way throughout the State, and is used chiefly for hay seed. At present none is available but likely will be later in the season, after harvest.]



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SAN FRANCISCO

Seed Potatoes for Southern California.

[Written for Pacific Rural Press.]

The idea of growing strictly high grade potatoes in Southern California solely for seed is enthusing E. D. McSweeney, of El Monte, Los Angeles county, who has grown two crops a year several seasons with great success on 30 to 50 acres.

The trouble of getting well selected seed with well selected ancestors, gave him the idea, and he hopes to find a grower of such, in a different climate from his own, with whom he can exchange seed potatoes. He believes, in common with many others, that seed potatoes should be planted in a different climate from where they were grown.

Fall Crop.—Early this August, Mr. McSweeney was planting his "fall crop" of White Rose, which is the only variety grown. He would plant 100 acres if pedigreed seed could be obtained. He rents run-down alfalfa for potatoes, and does not like to raise two crops in succession on the same ground, but likes at least two crops of potatoes from each field. To work this, he follows potatoes with beans or other cultivated crops and follows them with potatoes. The yield this spring was 5500 sacks or 110 sacks per acre.

For the fall crop, Mr. McSweeney picks the best potatoes of the spring crop for seed. It is better for them to be dug a month or so before planting, to season up; but many plant them at once. Mr. McSweeney held them two weeks before planting, this summer. They are dipped in corrosive sublimate to kill scab, regardless of cost. He cuts two eyes per piece, emphasizing the need of "plenty of meat" to sustain the sprouts until they get some growth above ground. The seed end is thrown away because it produces too many sprouts for the small amount of "meat" on it.

The ground is checked and flooded, then plowed as soon as possible, and planted. Many do not irrigate again until the potatoes are up, but Mr. McSweeney saturates the ground about two weeks after planting.

The rows are ridged up by cultivation and irrigated three or four times more. Water is not allowed to cover the ridges because it hardens the ground and spoils the shape of potatoes. They are dug in December; and they keep much better than the spring crop which must be disposed of in a very short period.

Last season Mr. McSweeney sold the fall crop for seed without storage, buyers having come even from Imperial Valley.

The spring crop is planted about Feb. 10. It is seldom irrigated more than once. The ground should be kept from cracking enough to expose tubers, and they should not be exposed out of doors all night, as the greatest pest of potatoes in Los Angeles county is said to be these insects, whose eggs are laid mostly at night and on tubers, and whose larvae burrow all through the potatoes.

The spring crop is harvested in June or July and sold locally, mostly to eat. Many of the southern California potatoes are shipped to Texas and the Southwestern States.

The work of W. V. Shear, inspector under the seed potato certifica-

tion law of 1915, indicated a way of finding the pedigreed seed desired if such is grown in the State.

HYDRATED LIME ALL RIGHT.

To the Editor: You have recommended hydrated lime for ground sweetening, lightening, etc., but I find that it burns tender plants just under the surface of the ground.—Subscriber.

[Answered by Prof. Chas. B. Lipman, University of California.]

[The caustic properties of hy-

drated lime may perhaps be injurious to tender plant tissue, but they certainly are not injurious to the soil. There is some slight evidence that hydrated lime, but more particularly caustic or burnt lime, unslaked, may hasten the decomposition and loss of organic matter from soil. The evidence, however, is not such as would justify a complete condemnation of the use of burnt lime, much less of hydrated lime.

I think, therefore, that you are perfectly safe in going ahead with the recommendation for the use of

can be purchased very cheaply and where heavy soils are to be lightened. In the case of other soils and other circumstances, I see no necessity for using anything else than the ground lime.]

AGRICULTURAL NOTES.

Disking before plowing helps prevent turning big clods under.

Select seed potatoes while they are growing.

An eastern farmer pays his son 25 per cent of the net profits.

Do you read our Power on the Farm department?

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Records Prove Power and Endurance

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THE HUDSON SUPER-SIX is a light car, as a modern fine car must be. In ordinary driving, 40 horsepower would be ample. That's what motors of this size heretofore developed.

But the Super-Six—our patented motor—delivers 76 h. p. Yet we add no size, no cylinders. We don't increase fuel consumption. We have simply lessened vibration, reducing friction to almost nil. And we thus save the power that was wasted.

That extra reserve power means much on hills. It means much in flexibility and in quick response. It saves much changing of gears. Would you want an engine of equal size which lacked it?

What Speed is Wanted?

The Super-Six speed records—quoted below—have never been matched by a stock car. You perhaps don't want such speed. We made those records to prove the motor's supremacy. Also to prove its endurance.

But they mean that in ordinary driving you will run the Super-Six at half load. And that means a long-lived motor.

What Endurance is Wanted?

Nobody knows how long a high-grade modern car will last. All we can do is to compare the endurance by extreme and prodigious tests.

A Super-Six stock chassis was driven 1819 miles in 24 hours, at an average speed of 75.8 miles per hour. The same car previously had been driven 2000 miles

at average speed exceeding 80 miles an hour. No other car ever has matched that endurance test. It would take five years of pretty hard driving to equal those top-pace strains.

But this Super-Six motor, after all those tests, showed no appreciable wear whatever. So the Super-Six is likely to last years longer than any man expects.

What Luxury is Wanted?

You find in the Super-Six all the beauty and luxury that we know how to put in a car. You find a luxury of motion—due to lack of vibration—which you never before have experienced.

You will find fine engineering, with all the satisfaction that comes of it. For this is the crowning effort of our great engineering staff, headed by Howard E. Coffin.

You will find pride of ownership which comes from owning a car of the Hudson repute. A car which outrivals other cars in performance. A motor which by every test holds unquestioned supremacy.

Where else can you find what you find in the Super-Six? Or anywhere near what you find here?

You will find fine cars and great cars, according to former standards. But the Super-Six invention has set some new standards. And Hudson controls that by patent.

Think of these things when you buy a new car. Prove up the differences by road comparison. If you are buying a fine car, and buying to keep, you don't want a second-place car.

Some Hudson Records

All made under American Automobile Association supervision by a certified stock car or stock chassis, and excelling all former stock cars in these tests.

100 miles in 80 min., 21.4 sec., averaging 74.67 miles per hour for a 7-passenger touring car with driver and passenger.

75.69 miles in one hour with driver and passenger in a 7-passenger touring car.

Standing start to 50 miles an hour in 16.2 sec.

One mile at the rate of 102.53 miles per hour.

1819 miles in 24 hours at average speed of 75.8 miles per hour.

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General Agricultural Review.

CITRUS, NUTS, OLIVES.

Permission has been granted for California to ship oranges to England on English vessels.

San Dimas lemons shipped the three weeks preceding Aug. 14 are reported to have sold at \$158,000 f. o. b.

The Durham almond crop is estimated at 70 tons. Last year it was 450 tons. Smudging is in the minds of growers.

A Corning olive grower has thinned his Queen Olives and on that basis has sold them at \$225 per ton on a five-year contract with the Maywood Packing Co.

J. B. Wrantham of the California Almond Growers has been selected by Market Director Weinstock as the State's representative on the Board of Directors of the California Associated Olive Growers. They hope to handle this season's crop.

Plano citrus growers recently organized the Sunland Packing House Co. and affiliated with the Tulare County Citrus Fruit Exchange which markets through the California Fruit Growers' Exchange.

Dean H. J. Webber of the Riverside Experiment Station has recently visited the canker-infected Texan citrus districts, and returns with fresh warnings to watch for it and stamp it out at every appearance.

Spain exported to the United States in 1914, \$1,443,376 worth of olives, \$84,453 raisins, \$541,553 almonds, and \$342,584 olive oil, according to the government daily consular reports. The United States is the largest buyer of Spanish olives and olive oil.

Excavation for the administration building of the new Citrus Experiment Station, Riverside, is about complete and construction will soon proceed. Irrigation pipe has been delivered, a deep well recently completed and a big irrigation reservoir dug.

Final settlement by the Cal. Walnut Growers' Ass'n Aug. 14 for the 1915 Santa Ana Valley walnut crop shows that 85 cents per hundred pounds covered all expenses of marketing, running packing houses, insurance, brokerage, etc.; \$358,608 were distributed to growers.

GRAPES.

Fifteen cars of Tokays were shipped from Lodi Aug. 17.

Practically all of the 1915 raisin crop has been sold. Raisin sales for July exceeded those of a year ago by 1800 tons.

Colusa Sultana and Thompson growers started picking for raisins last week. Some crops promise 1½ to 2 tons per acre. There are about 800 acres around College City.

MISCELLANEOUS.

One-fifth more freshmen applied for admission to the State University than ever before.

Hilgard Hall, a \$350,000 University Building, has been begun at Berkeley for the College of Agriculture.

Stormy weather for three days was succeeded by frost in Western Nevada on the night of Aug. 18. Little damage was done to crops.

The Napa county Mt. George Farm Center is to hold formal dedication exercises for its commodious new hall at 2 p. m., Sept. 3. Attractive invitations are being sent out.

Terra Bella farmers voted Aug. 12 to issue \$1,000,000 bonds for an irrigation system. Part of the proposed area is already planted to citrus and olives under pump irrigation.

Secretary Nell G. Thayer of the Mariposa County Farm Club writes: "The Fourth and Fifth Supervisor Districts of Mariposa county will hold annual fair at Jerseydale fairgrounds Sept. 8, 9 and 10. Dean Thomas F. Hunt will conduct a Farmers' Institute in connection with the fair on the 9th. The grounds are beautiful for camping. Bring blankets; can buy 'eats' on the grounds. Mariposa county has a Farm Club that is not a Farm Bureau. We meet the second Saturday of each month at Chowchilla school house. On Sept. 9th we hold our meeting and Farmers' Institute at Jerseydale Fair Grounds. The club considers this a fitting celebration of Admission Day.

GRAINS AND FIELD CROPS.

Several Arbuckle farmers are raising alfalfa seed.

Lima bean harvest will begin at Oxnard about Sept. 1.

The Butte County Rice Mill at Biggs is near completion.

A Butte county barley grower has sold 22,000 sacks at \$1.42½.

The Oakdale Milling Co. is to put up a new warehouse for this season's rice.

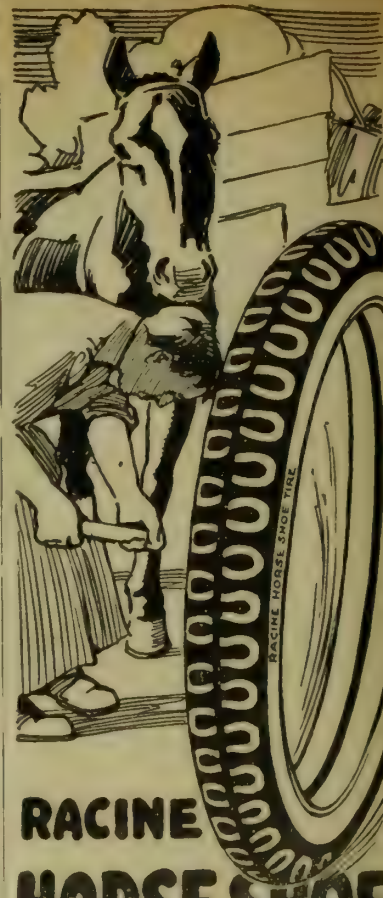
Two Salinas Valley potato fields are on the way to produce certified seed potatoes.

Hop crop promises 110,000 to 115,000 bales, but there is very little buying or selling.

The Goleta Lima Bean Growers' Ass'n has signed up about 18,000 sacks of this year's crop.

Lima bean prices are to be set by the new association at their Oxnard meeting early in September.

A car of 270 bags of potatoes was condemned at Klamath Falls, Ore., for containing tuber moths which had escaped notice of California inspectors.



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Send for Premium List.

CHAS. W. PAINE, Secretary.

JOHN M. PERRY, President.

To. Aug. 14, Turlock shipped 2312 cars of watermelons and cantaloupes. Shipments are fast decreasing.

Forty cars of green tomatoes were shipped from Marysville to Northwestern and Eastern States this season.

Livingston expects to ship 15,000 sacks of grain. One grower substituted beans and corn on 3000 acres of grain land.

Miller and Lux have leased 10,000 acres of Kern county land to representatives of Belgian and Japanese beet growers.

Four-year contracts were signed for nearly 1800 acres of sugar beets around Fallon, Nev., where 4000 acres had been set by the Sugar Co. as a minimum.

Four hundred sacks of onions per acre were reported from San Joaquin county last spring from land which was to grow pink beans for September harvest this same season.

The American Beet Sugar Co. will run the beets from about 38,000 acres through their factory at Oxnard this year. A large acreage of these are planted in the San Fernando Valley of Los Angeles county. Both the yield and quality are usually good this year.

The continued cool, foggy weather is materially strengthening the prospects for good bean crops in Ventura county as well as in other bean-growing regions along the coast. It is thought that the bean crop in the Santa Barbara district will be a trifle short of last year.

The recently elected directors of the Pacific Rice Growers' Ass'n are to represent districts as follows: Geo. E. Harvey, W. E. Barnard and R. E. Fields, Biggs; C. B. Harris and A. J. Lofgren, Richvale; H. O. Jacobson, Butte City and Chico; C. L. Donohue and Ernest Behr, Willows; W. K. Brown, J. S. Campbell and F. G. Burrows, Yolo; C. M. Farris, Gridley; H. C. Gingg, Marysville; L. J. Lavers and Jno. Irish, Jr., San Joaquin Valley.

DECIDUOUS FRUITS.

The Banning Cannery closed Aug. 17.

Prune price offers are reported to be improving again.

The weekly payroll at the Porterville Cannery is over \$2000.

Placer county canning peach growers now want to ship East.

Colfax fruit shipments are expected to exceed 100 cars, mostly pears.

"HEADQUARTERS" FOR WOOD PIPE AND TANKS

TANKS

WINE TANKS

FERMENTING
TANKS

WATER TANKS

OIL TANKS

PIPE

WOOD STAVE
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SEWER PIPE

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WRITE FOR ILLUSTRATED CATALOG



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PACIFIC TANK and PIPE CO.

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918 Trust and Savings Bldg.,
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Armco Iron

Corrugated Pipe

Lateral Headgates

Watering Troughs

Lennon Type Flume

Irrigation Gates

Hog Troughs

Calco

Slide Headgates

Automatic Drainage Gates

Reservoir Outlets

Hinge Headgates

A courteous attendant in charge to answer any question or demonstrate the operation of such gates as may be of interest to visitors. Literature on request.

California Corrugated Culvert Co.

417 LEROY ST.,
Los Angeles.

406 PARKER ST.,
Berkeley.

The California Peach Growers Inc. are reported to be designating regular packing companies' packing houses for receipt of fruit.

The California Fruit Distributors recently reported one day's Eastern auction sales of California grapes at 42 cars bringing about \$60,000.

The Selma warehouse of the California Peach Growers Inc. is to have its machinery installed before the building is completed, so great is the rush of incoming fruit.

The Earl Fruit Co. of Sacramento has contracted a large number of Oregon Italian prunes for shipment East. People back there are sure

hungry for fruit and able to buy it this season.

A merger to include the C. F. C. A., Central California Canneries and others, not including Libby, is being negotiated in San Francisco. Capital is to be \$25,000,000.

Dried peach growers were recently asked to keep their fruit a

week or two because the association didn't have enough warehouse facilities. They hope soon to handle all receipts promptly.

"We are taking steps to form a farm loan association under the National Rural Credits Law," writes E. E. Greenough of the Merced Grange No. 366.

MELILOTUS INDICA

(Yellow Sweet Clover)

The best and cheapest seed
for COVER-CROP.

Plant early for maximum
benefit.

The seed we offer is scarified,
insuring high germination.

WRITE FOR PRICE AND SAMPLE.

Alfalfa Seed

NEW CROP.

EXTRA FANCY.

DODDER FREE.

Send for Samples and Prices.

VALLEY SEED COMPANY

506-508 J Street,

Sacramento, Cal.

Mechanical Power on the Farm.

HYDRAULIC RAM BALKS.

To the Editor: I have just put in a second-hand hydraulic ram—two-inch drive pipe 32 feet long with 8½ feet fall—¾ inch outlet pipe 350 feet to the tank with a lift of 25 feet. The ram would not work, so I put a weight on top of the plunger pin, and it works all right. Why will it not work without the weight?—H. R. D., Santa Cruz.

[If you had to put a weight on the plunger pin where the waste water runs out of your ram, it would seem to indicate that you were trying to lift the water against too great a friction head. We take it that the outlet remained closed constantly until you put the weight on.

Since the exit of a certain amount of water into the air chamber of the ram depends on a stream flowing out of the waste valve with considerable force before the valve is closed by that same force, it would seem that the weight and friction of water in the pipe above the air chamber was so great that the water running out of the waste valve was not allowed to accumulate enough speed and force before the valve closed, to force any water into the air chamber. The weight you put on holds the valve open until more force has accumulated in the waste stream. The ram would probably work without the weight if your outlet pipe were of larger diameter or shorter, to avoid so much friction.]

ELIMINATING DITCH WATER.

[Written for Pacific Rural Press.]

Ditch water has not proved entirely satisfactory in the Redlands orange district, and many growers

Motor oil made from asphalt-base crude gives best lubrication with least carbon. Such is the testimony of motorists and experts alike. As Lieut. Bryan, U.S. N., puts it: "Oil made from the asphalt-base crudes have shown themselves to be much better adapted to motor cylinders, as far as their carbon-forming proclivities are concerned, than are paraffine-base Pennsylvania oils." Zerolene is scientifically refined from selected California crude—asphalt-base—not only made from the right crude but made right. Dealers everywhere and at service stations and agencies of the Standard Oil Company.

ZEROLENE
the Standard Oil for Motor Cars

are putting in pumps and wells. Among these is an association of farmers known as the Mascart Water Co. controlling 110 acres of orchard. They have a 13 h.p. motor which runs a pump and distributes 68 inches of water through the various orchards as agreed upon. The lift is 20 to 35 feet according to rainfall the previous winter, and it costs 79 cents an inch for the water delivered at the outlet pipes. Advantages besides cheapness, are independence, warmer water in spring, use it when you want to, no distant ditches to maintain and no near ones from which water may seep to be lost or to injure nearby trees. Cold mountain water applied to the trees while in bloom shocks them so that they do not set their fruit as well, according to M. C. Mascart.

DECIDE THESE TRACTOR QUESTIONS AT THE STATE FAIR.

1. Is it desirable to work out a system by which all manufacturers so desiring may have their product tested and rated by the Office of Public Roads and Rural Engineering?

2. Should the draw-bar ratings be in terms of horse-power or merely in terms of pull exerted?

(a) In the former case the result will be determined by the following equation:

$$H. P. = \frac{\text{Draft in pounds} \times \text{Distance in feet}}{\text{Time in minutes} \times 33,000}$$

(b) In the latter case the element of time is neglected and an engine of slow speed and a given draw-bar pull would get an equal rating with one of the same draw-bar pull, but possibly twice the speed.

3. Which one of the following methods should be followed in determining the horse-power?

(a) Start the engine and take the horse-power for a short run immediately after the engine is warmed up.

(b) Take the horse-power as above, then operate the tractor continuously for 6 to 8 hours and again take the horse-power at the end of that time.

(c) Take the horse-power continuously for 6 or 8 hours and use the average results.

PUMPS DRAIN IRRIGATION DISTRICT.

[Written for Pacific Rural Press.]

Work is in progress in the district north of Ripon to organize a drainage association to lower the water level. Since the South San Joaquin Irrigation district has been furnishing water, the moisture has risen close to the surface, and in some low spots has formed miniature lakes, causing the loss of parts of fruit orchards. Some pumps have been placed and are now lifting the water into ditches to lower the water table.

Each fruit packer for Jas. Elliot of Courtland puts his letter initial on each box or crate so that improper packs may be traced to the guilty one, and perhaps a better record of the quantity packed by each.

Do you know how much cash your crops cost and returned?

Do It Electrically



ELECTRIC APPLIANCES in the household, not only add to the convenience of all members of the family, but they are economical and time-savers.

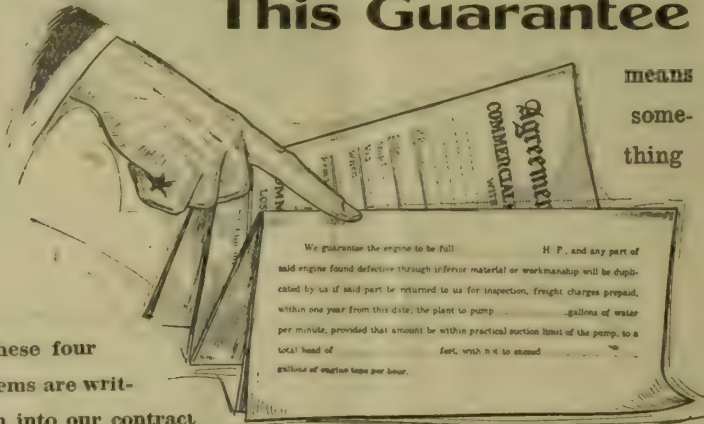
ELECTRIC APPLIANCES include CHAFING DISHES, COFFEE PERCOLATORS, VACUUM CLEANERS, ELECTRIC IRONS and every other appliance that is needed in the modern home, not forgetting **ELECTRIC FANS.**

We carry these appliances in many of our branch offices, and will be glad to have you call and inspect them. Where we do not carry them we will be just as glad to give you our expert advice.

"PACIFIC SERVICE" is always "At Your Service."

Pacific Gas and Electric Company
HEAD OFFICE, 445 SUTTER ST., SAN FRANCISCO.
Branches in all principal cities and towns of North Central California.

This Guarantee



These four

Items are writ-

ten into our contract

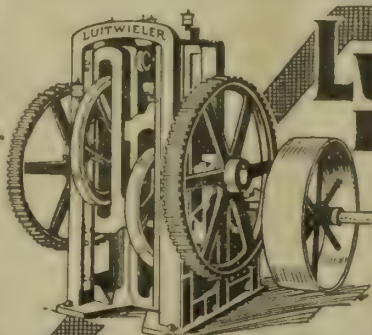
AN IRONCLAD WRITTEN GUARANTEE PROTECTS THE PURCHASER OF EVERY COMMERCIAL ENGINE

You don't have to depend on oral statements. We write in the contract a definite guarantee stating exactly what the installed equipment will do in volume, power and cost. Write for our handsome new Catalog; explaining the superior features and economies of **COMMERCIAL ENGINES.**

Commercial Engine Co.

PORTER STREET, LOS ANGELES, CAL.

Branch: 1228 "H" St., Fresno, Cal.



LUITWIELER PUMP

HOW CHEAPEST WATER IS PRODUCED.

It costs less to lift and deliver a steady stream of water than a jerky, uneven stream—everyone will agree to that. But the Luitwieler (non-pulsating) pump is the only pump on the market that delivers an absolutely even stream, consuming the least power. That's why it proves the most inexpensive pump on the market. Every Luitwieler owner will confirm our claim. Write at once for our free irrigation booklets that contain valuable and interesting information.

LUITWIELER PUMPING ENGINE CO.,

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San Francisco Agts.,

Simonds Mach. Co., 117 New Montgomery St.



P I P E
For Every Purpose NEW
Threads & Couplings Hot Asphaltum Dipped
Second Hand and NEW
Fittings and Screw Casings Valves Guaranteed for Pressure
Pacific Pipe Co.

Main and Howard Streets,

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Belting

That Must
Make Good



When you buy a rubber belt you should know what service it will give you or have the belt service guaranteed by a responsible firm who will make good in case the belt falls down. Every belt-buyer should know how to judge a rubber belt, and we would like to send you a free sample of Test Special together with our folder that will tell you just how to judge a rubber belt so that you may know just what service you will get from any belt you buy.

Fill out the coupon and mail it to us and we will recommend a belt that we will unqualifiedly guarantee to do your work satisfactorily. We have had seventy years' manufacturing and selling experience.

NEW YORK BELTING & PACKING CO.

519 Mission St., San Francisco

Established 1846

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Send me samples of Belting that you will guarantee to give satisfactory service on my work and quote prices delivered at

Cal. _____

Kind of Drive { Gasoline Engine _____
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Driving Pulley _____
Driven Pulley _____
Cross _____
Straight _____
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Distance Between _____
Centers of Pulleys _____
Revolutions per Min. _____
of Driving Pulley _____
Kind of Machinery _____
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My Dealer's Name _____
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A pocket memo booklet giving speed and power tables will be sent FREE to all who mail this coupon.

REDWOOD TANKS—SILOS.
Thirty-five years in this business in Stockton.—A 500-gallon tank, \$8.00. A tank 6 ft x 2 1/2 ft., \$7.50. Other tanks equally cheap. I deal direct with the consumer, saving 10% to 25%. All sizes in stock. Clear dry redwood direct from the mill. Write for price today. Best improved machinery. Doors, Windows, frames, Millings.
F. WILSON,
STOCKTON, CAL.

GRADING DRIED PRUNES.

[Written for Pacific Rural Press.]

"Is it worth while to grade your dried prunes before selling them?" we asked F. R. Shafter of San Jose who has a 5 h. p. steam engine to run a grader able to separate 20 tons a day into seven grades. The steam is furnished from a 50 h. p. boiler which runs a big steam engine to pump for irrigation. Besides running the dried prune grader, the little engine has a belt running the other way to run the Anderson-Dargrover grader, which separates prunes into different sizes as they come from the dip, so they will dry more evenly on each tray. The exhaust from the engine opens into the kettle and helps to keep the water boiling. Mr. Shafter dries for many of his neighbors, which might make a difference in the profitability of a dried prune grader.

"I happened to have 17 boxes of prunes here once, and time to look for the answer to your question," said Mr. Shafter. "I tested the lot by weighing a pound and counting the prunes in it as the packers have based their prices. I graded the lot, took out the little ones, and figuring the same basis price, the balance was worth \$2.50 more than the entire original lot had been. That was good pay for the grading, and I had the little ones besides. But the largest six grades in bulk were worth no more than the same prune after grading them. So I now grade only to get out the smallest size. The work is done quickly, so I never grade all day at a time; but it is no trouble to start and stop the engine whenever there is a small lot to be graded."

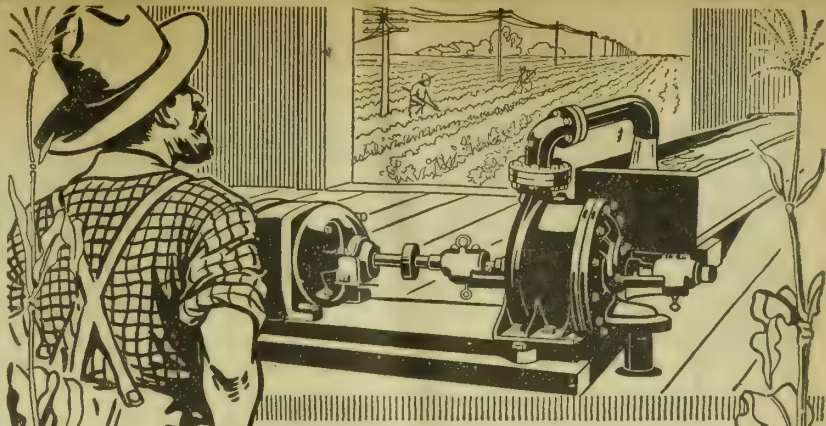
Publisher's Department

B. F. Stroup, of Anderson, in remitting pay for his subscription, says: "I like your paper very well. I like the cheaper paper better than the glazed." We are very glad to learn that Mr. Stroup likes the new print we are now using, though we fear many others, ourselves among the number, do not. The white paper situation is becoming very acute in the east as well as the west. Many papers have suspended publication, others have cut down in size and some have consolidated.

The Western Empire of Los Angeles points at the head of its columns the statement that it is the only farm paper in the Southwest that belongs to the Audit Bureau of Circulations. As that paper claims to have offices in Los Angeles and San Francisco and as the Rural Press has offices in both these cities, we must demur to the foregoing statement. As far as we know the Rural Press is the only weekly farm journal on this Coast having membership in the A. B. C.

In a letter to us recently, T. S. Glide of Davis, says: "Regarding results received through advertising in your paper, will state they have been more than satisfactory. I have received more inquiries not only from stockmen in this State but other States as well and have made numerous sales through advertising in your valued paper."

A little over two years ago F. O. Popenoe of Altadena issued a 300-page, handsomely gotten up book on Date Growing. The book has met with a flattering reception, and to aid in its sale the Rural Press is to receive a consignment of them this week. The price of the book is \$2 postpaid. Send us your orders.



Two Ears of Corn Where One Grew Before

The farmer who can make two ears of corn or two blades of wheat grow where but one grew before, is well on the way to prosperity for he is solving the problem of intensive farming.

Irrigation with G-E Motors

has made many a dry, unproductive district into profitable farming country—a garden spot of bountiful crops.

This is not empty boasting or mere theory—it is *fact*. Ask anyone who has used G-E motors on his farm—he will tell you that they save money every day in the year. The first cost is low, too. Write our nearest office—it costs nothing to find out and places you under no obligation.

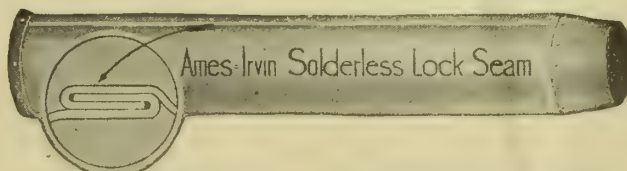
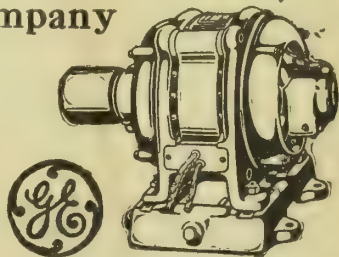
General Electric Company

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The General Electric Company will gladly answer all questions relating to the use of electric power for ranch and market garden irrigation.

Address nearest office. 6056



Nothing But the Sheet of Metal Itself is Used to Make

AMES-IRVIN Irrigation Pipe

Neither solder or rivets are used in its construction. Each sheet is edged, locked together and then set down under 3500 pounds pressure. Such a seam will not break or leak. It is simple, solid and strong, with no holes in the steel.

Ames-Irvin Lock-Seamed irrigation pipe was the first prize-winner against all competitors at the Sacramento State Fair in 1913 and the Fresno and San Jose County Fairs in 1912.

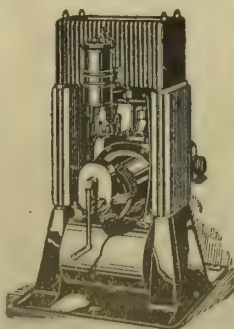
SEND FOR BOOKLET.

It gives full information about irrigation pipe and its construction. Get it—today.

Ames-Irvin Company

8TH AND IRVIN STREETS,

SAN FRANCISCO, CAL.



Uni-Lectric
ELECTRIC LIGHTING SYSTEM

Electricity for Farm Homes

At one-third cost of juice from Power Company, (thus includes interest on cost of plant). It is the simplest and most economical plant on the market.

No Batteries - No Switchboard - No Rheostat.

Will operate 50 lights 7 1/2 hours for 11c. Will also operate electric fans, irons, small motors, etc.

If your buildings are not wired, send us plans and we will give you full instructions so that you can wire them yourselves. Material furnished at lowest cost.

Karl A. Hedberg Co., Inc.

Electrical Engineers.

104 Clay St.,

San Francisco, Cal.

Livestock at the State Fair.

[Written for Pacific Rural Press.]

Do you want to know what you will see at the State Fair? Well, in the livestock line you will see the leading breeders of the State most of whom have some of their best stock for you to see. The rest are there for the same reason you are; to talk with other breeders and compare their stock without traveling all over the State to see it. You will select a few breeders probably, whose herds you will want to see at home.

You will see some animals you will want to improve your herd. If your herd sire has been used to the time limit, the State Fair is the place to get a new and better one, either by outright purchase or by finding other breeders who are in the same situation and will be glad to trade.

The breeding stock you see at the Fair is all certified pure-bred. All competing for premiums must have furnished specific evidence of breeding ability. Many of the animals will have a number of their offspring and relatives to show their performance ability. All animals shown must have a certificate showing them free from infectious or contagious diseases, and transmissible blemishes, signed by the State or the State Fair veterinarian.

You will find them in stalls and barns, freshly, thoroughly cleaned and whitewashed to the roof and floors. Grooms caring for stalls in the best shape will win \$195 in eight prizes. You will enjoy looking at the erstwhile hideous red horse barns which are now cream colored outside and white inside with colored decorations. You will find the dairy barns not far from the dairy machinery, dairy products and cows on the five-day milking contest. Don't fail to see the way they handle the contest.

Entries.—Of the hog breeders, at least 78 have entered 640 head for \$3589 prizes, four champion gold medals for each breed and 500 pounds Economy Stock Powder. These include Berkshires, Durocs, Poland Chinas, Yorkshires, Tamworths, Hampshires, and others. Three hundred new pens have been furnished for them.

Of dairy cattle breeders, 36 have entered 303 Holsteins, Jerseys, Guernseys, Ayrshires, Dutch Belted, and Dairy Shorthorns for \$5382, besides an Ayrshire cup and \$330 for a 5-day milking contest for fat production and \$150 to grade cows with Testing Association records for fat production. Only three cows are entered in the 5-day contest so far as the State Fair people informed us, but entries do not close until September 1, and there is likely to be interesting competition.

Of draft horse breeders, 20 have entered 145 Percherons, Belgians, Clydesdales, Shires, Jack stock, and grades for \$4089 cash, 8 gold medals, 8 trophies, 28 silver and bronze medals, and some ribbons.

Jacks and Jennets are entered by three breeders, 11 being shown for the \$316 prize money and two gold medals.

Coach and saddle horses and ponies will be interesting to everybody, for these animals touch the admiration of the greatest and least of us.

There will be a small show of Thoroughbreds which have been left out several years; and of Arabians which have never before been classified.

Beef Cattle of the Shorthorn, Hereford, Red Polled, and Aberdeen Angus breeds are entered. There are 54 Shorthorns, 7 Herefords, 15 Red Polled, 2 Angus and one grade. The University Farm shows all but the Shorthorns and Red Polled.

Sheep are represented by Rambouillet, Shropshire, Hampshire, Southdown, and Oxford breeds to the number of 76 exhibited by 8 breeders, 78 range sheep by three breeders and 4 fat sheep by one.

Five goats are entered by University Farm.

Dairy Machinery.—A model working creamery will be making butter at the Fair and separators, Babcock testers, pasteurizers, milk coolers, etc., will be shown by Sharples Separator Co., San Francisco; Daniels & Son, Berkeley; Empire Separator Co., Sacramento; De Laval Dairy Machinery Co., San Francisco and Santa Fe Lumber Co., San Francisco.

Events.—Watch the stock judging in every class you care about, and listen to what the judges say afterwards. Ask them why they placed the animals as they did, to help you in selecting suitable stock for breeding, or showing at future fairs.

Two stock parades will include all stock exhibited. Premiums will not be paid unless the stock is paraded. Winning horses will be shown also at the Night Horse Show.

There will be a livestock judging contest for farmers' boys under 21, beginning at 8 a. m., September 4. The prizes will be five scholarships at University Farm. Three dairy products scoring prizes will also apply on \$150 worth of University Farm scholarships.

Several livestock sales will take place as advertised.

It is reported that there will be a sheepmen's meeting and a Holstein breeders' meeting besides the Western American Berkshire Congress.

The Duroc Jersey and Poland China futurity contests are bringing out at least 20 entries each or they will not run.

Boys' pig club pigs will compete for \$60 in six prizes, and the winner of first prizes will receive a purebred pig valued at \$50 from Murphy Bros., Perkins.

Swine: Berkshires.—Oak Grove Dairy Farm, Woodland, 8 head; D. D. Warnock, Dayton, 14; G. E. Metcalf, 5; F. R. Steel, Grants Pass, Ore., 10; A. L. Stephenson, Los Molinos, 1; Perkins and Co., Perkins, 1; A. B. Humphrey, Escalon, 16; W. M. Carruthers, Mayfield, 16; R. C. Hannan, Corning, 5; Arlington M. Smith, 1; G. A. Murphy, Perkins, 8; H. L. and E. H. Murphy, Perkins, 13; Markhofer and Latta, 11; J. T. Peterson, Lassen, 2; Hollow Hill Farm, 7; E. S. Tuck, Santa Rosa, 1; C. E. Barrows, Santa Rosa, 1; Clark Bros., Prosser, Wash., 2; D. C. Berman, Woodland, 10; H. J. Hammond, Sacramento, 6; G. M. York & Son, Modesto, 6; J. L. Thatcher, Riverside, 3; S. S. Day, Sacramento, 13; University Farm, Davis, 2; F. A. Brush, Santa Rosa, 14; Jas. Mills Orchard Corporation, Hamilton, 7; and Hopland Stock Farm, Hopland, 7.

Durocs.—J. P. Walker, Visalia, 10 head; J. P. Daggs, Modesto, 14; R. Q. Wickham, Glen Ellen, 5; W.

AUCTION SALE

OF

40 PURE BRED 40 POLAND CHINAS

AT

Modesto Livestock Show and Exposition

SEPTEMBER 20th.

CONDUCTED BY

POLAND-CHINA BREEDERS' ASSOCIATION
of North San Joaquin Valley.

Consigned by Members:

A. M. Henry, W. A. Young, T. J. Spalding, A. J. Robinson, H. I. Marsh, R. J. Miller, J. A. Clark, Geo. V. Beckman, C. A. Stowe, T. H. Beckman, O. L. Linn and others.

SOLD WITHOUT RESERVE.

T. J. GILKERSON, EMORY BONE, Auctioneers.

For catalog write

O. L. LINN, Sec'y,

Route A, Modesto, Cal.

Knob Hill Stock Farm Registered Big Type Poland Chinas : : :



SOME TYPICAL KNOB HILL BROOD SOWS.
(Large type, combined with high quality.)

Our herd is nominated in the California Poland China Futurity to be held in connection with the State Fair this fall. We have just imported and added to the herd some of the best blood of the East, including boars from W. J. Hather, Ord, Neb., and Peter Mouw, Orange City, Iowa. We are offering pigs of both sexes from prize-winning stock. Litters coming at all seasons and stock usually on hand to suit customers.

Come and see them, or write for what you want.
ALL STOCK REGISTERED. ALL BREEDING GUARANTEED.
A. M. HENRY, Prop. Farmington, Cal.

San Ramon Shropshires

WINNINGS P. P. I. E., 1915.



Aged Ram, First and Second. Yearling Ram, First. Ram Lamb, First, Second and Third. Champion Ram, Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of Sire, First. Pen of three Lambs bred by Exhibitor, First and Fourth. Pen of four Rams, bred by Exhibitor, First and Fourth. Flock any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock, one year old, bred by Exhibitor, First. Flock under one year, bred by Exhibitor, First. Product of Ewe, First, Second and Third. Premier Championship for Breeder. Premier Championship for Exhibitor. A total, including American Shropshire Specials, of 15 Firsts, 9 Seconds, and 6 Championships.

Purebred Registered Rams and Ewes.
Individuals or Carload Lots.

BISHOP BROS., Agents. SAN RAMON.
Contra Costa County, California.

Champion Ram P. P. I. E.

BE SURE TO SEE OUR SHEEP AT THE STATE FAIR.

Hopland Stock Farm

HOPLAND, CALIF.

BREEDERS OF

Registered Shorthorn Cattle and Berkshire Swine

HERD BOOK—ROYAL POINTER 2nd, 197092.
First Prize Senior Yearling, P. P. I. E.

We are offering for sale
Shorthorn Bulls and Berkshire Boars, Bred Sows and Glits.
See our Shorthorns and Berkshires at the State Fair.

SAN FRANCISCO OFFICE,

1210 FLOOD BLDG.

Good Enough for Any Herd



AGGIE GRACE PONTIAC CREAMELLE
Half Brother of Marie Clothilde
Pontiac Creamelle, California
Champion 2-year-old.

This youngster's dam, Aggie Grace Brookside Princess, grand-daughter of Pontiac Korndyke, the greatest Holstein sire in the world, has an official record of

28.17 lbs. BUTTER - 456 lbs. MILK
TEST 4.9%

This record was an increase of 6 lbs. butter over her previous record and I expect her to make at least 30 lbs. on her next test.

His sire is Dutchland Pietertje Creamelle, one of whose daughters at 2 yrs. 1 month has just made a record of 22.52 lbs. butter, 391.7 lbs. milk, test 4.72%, making her California's champion 2-year-old.

This young bull is perfect in type, is 50% white and just ready for service. Born Apr. 22, 1915.

My showing at the State Fair will include the Champion 2-year-old, her dam, her full sister, and a few choice young bulls for sale.

BREEDER OF HIGH-TEST
HOLSTEINS.

F. STENZEL

SAN LORENZO, CALIFORNIA

Breeder of high-test Holsteins.

Be Sure and Attend THE STANISLAUS LIVESTOCK SHOW AND EXPOSITION MODESTO, Sept. 18 to 23

This will be one of the largest Stock Shows in California.

Premiums Most Liberal in State.

Excursion Rates on All Railroads.

For Premium List
Write Secretary,

**STANISLAUS LIVESTOCK
SHOW AND EXPOSITION,**
Modesto, Cal.

W. Everett, St. Helena, 10; E. Lamb, Ceres, 18; F. S. Grange, Yountville, 6; L. D. Collins, Denair, 19; J. M. DeVilbiss, 2; Mossdale Farms, Stockton, 14; H. P. Slocum & Son, Willows, 5; H. H. Smith, Chowchilla, 1; Hayden Smith, Woodland, 4; Rucker & Coppin, Fair Oaks, 6; M. Rucker, Fair Oaks, 30; H. P. Eckle Jr., Woodland, 7; J. K. Frazier, Denair, 24; W. J. Hackett, Ceres, 5; Henderson Co., Sacramento, 8; University Farm, 4; Perkins & Co., Perkins, 1.

Poland Chinas.—A. M. Henry, Farmington, 32; J. W. Wakefield, Acampo, 5; W. A. Young, Lodi, 29; L. L. McCracken, Ripon, 1; J. A. Clark, Lodi, 4; G. V. Beckman, Lodi, 9; N. Hauck, Alton, 7; J. McKindley, Acampo, 6; M. Bassett, Hanford, 24; H. W. Ekholm, Escalon, 1; T. D. Ross, Hanford, 12; S. F. Williams, Chico, 9; Walter Williams, Chico, 2; J. W. Howard, Chico, 2; Harry Huffman, Chico, 1; J. A. Crawshaw, Hanford, 5; H. I. Marsh, Modesto, 18; Deacon Ranch, Davis, 11; University Farm, 3; W. H. Browning, Woodland, 14.

Chester Whites.—R. L. Robinson, Fair Oaks, 4; Henry Bruno, Metropolitan, 6; C. B. Cunningham, Mills, 26; W. W. Doddington, Porterville, 2; University Farm, 2; N. H. Locke Co., Lockeford, 9; Henderson Co., Sacramento, 6.

Yorkshires.—A. D. McCarty, Modesto, 26; A. L. Tubbs Co., San Francisco, 10; University Farm, 1.

Tanworths.—University Farm, 1.
Hampshires.—H. E. Richardson, Chico, 8; J. W. Henderson, Berkeley, 18.

Other Distinct Breeds.—Beckman Bailey Dairy Farm, 8.

Dairy Cattle: Holsteins.—J. W. Benoit, Modesto, 6; F. Stenzel, San Lorenzo, 11; Napa State Hospital, 10; S. F. Kounias, Modesto, 1; Markhofer & Latta, 5; H. E. Cornwell, Modesto, 7; Frank Hatch, Modesto, 3; J. McKindley, Acampo, 5; A. A. Meraley, Sacramento, 6; J. A. Pelanda, Modesto, 1; J. K. Fraser, Denair, 1; Jas. McGillivray, Sacramento, 29; Bridgford Co., 10; Henderson Co., Sacramento, 13; University Farm, Davis, 4; A. W. Morris and Sons, 40.

Jerseys.—Guy H. Miller, Modesto, 12; T. B. Purvine, Petaluma, 19; Jersey Queen Farm, San Jose, 4; J. B. and J. E. Thorp, Stockton, 13; S. P. Kelly, Ferndale, 25; S. F. Williams, Chico, 11; W. J. Hackett, Ceres, 12; N. H. Locke Co., Lockeford, 23; University Farm, 5; J. B. Stump & Son, 8; C. F. Hempre, Monmouth, 16.

Guernseys.—A. B. Humphrey, Escalon, 12; Walter H. Dupee, Santee, 29; Calla Grove Farm, Manteca, 5; J. W. Henderson, Berkeley, 8; B. E. Nixon, Napa, 12.

Ayrshires.—E. B. McFarland, San Mateo, 24; H. A. Johnson, Woodland, 14.

Dutch Belted.—U. C. Strader, Ceres, 13; Jennie Strader, Ceres, 13.
Dairy Shorthorns.—Alexander and Kellogg, Suisun, 15.

Five Day Butterfat Contest.—T. A. Pelanda, Modesto, 1; F. Stenzel, San Lorenzo, 2. (Entries close September 1.)

Beef Cattle: Shorthorns.—Hopland Stock Farm, San Francisco, 16; H. L. and E. H. Murphy, Perkins, 10; Barco Ranch, Hollister, 4; Jack London, Glen Ellen, 1; T. B. Gibson Estate, Woodland, 11; Pacheco Cattle Co., Hollister, 9; W. M. Caruthers, Mayfield, 5; G. A. Murphy, Perkins, 8.

Hereford.—University Farm, Davis, 5.

Red Polled.—R. R. Cartwright, 15.

Fat Cattle.—University Farm: 2 Hereford, 2 Angus, 1 Grade.

Draft Horses: Percherons.—M. Bassett, Hanford, 7; Whitehall Estates, Tracy, 27; J. W. Wakefield, Acampo, 1; N. W. Thompson, Oakland, 1; H. M. Jerome, Stockton, 1; H. E. Learned, Stockton, 12; G. J. Albrecht, Oakland, 5; Ruby & Bowers, Davis, 3; J. K. McComber, Tipton, 3; California Polytechnic School, San Luis Obispo, 2.

Belgians.—Ruby & Bowers, Davis, (Continued on page 219.)

The Ideal Green Feed Silo

BECAUSE OF ITS
PROPER DESIGN
BEST MATERIAL and
GOOD WORKMANSHIP

will serve you better than any other. It will give you longer service, a better quality of silage and more profit on the investment than any "cheap" silo. This has been proven by the experience of many farmers who have tried both. In the better silage it will produce the Ideal will save the difference between its cost and that of any inferior silo the first season you use it



Refrigerator Type Doors **Self-Supporting Roof**
Air and Water Tight Foundation Joint **Reinforced Top**
Extra Heavy Hoops **Galvanized Ventilator**
No Hinges or Metal Contraptions to Rust and Get out of Order.
The Light Running

Acme Feed Cutter and Silo Filler
Built in seven sizes.

All Steel Frame
Low Feed Table
Malleable Knife Head.
Positive Safety Device



Triple Frame Construction
Accurate Knife Adjustment
Automatic Feeding Device
Reversible Feed Rollers

Independent Control of Blower and Cutter Head Speed.

THE ACME ALFALFA MEAL ATTACHMENT

can be fitted to all sizes of Acme Feed Cutters. This attachment will enable the making of an excellent grade of alfalfa meal from alfalfa hay at a cost not exceeding that for baling.

CUT OUT THE MILL FEED EXPENSE BILL

By feeding Silage and Alfalfa Meal made with an Acme Cutter, Alpha Engines. **James Barn Equipment.**

DE LAVAL DAIRY SUPPLY CO.

Everything for the Dairy.

San Francisco

Seattle

You are cordially invited to visit our complete Exhibit at the State Fair, Sept. 2-9, Near the Dairy Building.



SANTA ANITA RANCHO
ANOAKIA BREEDING FARM



First Annual Sale, October 23rd and 24th

THOROUGHBREDS: A few mares and some two and three-year-olds, sired by the famous Derby Winner, **Rey El Santa Anita**, and the noted stallions, **Palo Alto** and **Jake Argent**, out of famous thoroughbred mares.

ARABIAN THOROUGHBREDS: Two-year-olds, sired by Imported Stallion **Ibn Mahruss**, head of our Arabian Stud. Dams are the choicest thoroughbred mares of Santa Anita Rancho.

SADDLE HORSES: Fourteen of them, some of which are sired by **Ibn Mahruss**, world renowned imported desert saddle stallion, and **Don Costano**, a five-gaited Kentucky saddle stallion. These horses are mostly three-year-olds.

POLAND CHINA AND BERKSHIRE BOARS: Four to nine months old. Sired by famous Poland China herd boars—**Banker's Boy** and **Glenview Wonder**. And Berkshire Boars—**Kintyre Laird**, **Grandson's Duke** and **Fashion's Longfellow 5th**.

The dams are from the very best blood lines. Most all these animals have winnings at World's Fair. Write for catalogue.

HOLSTEINS: We will sell a number of young bulls. Some sons and grandsons of the noted **Prince Gelsche Walker**, and bulls from one World-Record cow and two California State-Record cows. Sixty females of the highest class will be consigned. Write for catalogue.

WORK HORSES AND MULES will also be offered for sale.

WRITE FOR PARTICULARS.

Anita M. Baldwin,

W. H. TAYLOR, Superintendent.
Santa Anita, Cal.

PREPARE! PREPARE! PREPARE!

Healthy, Sound Hogs for the Market

Digester Tankage

FOR FEEDING HOGS

Is now universally recognized as the most desirable hog food.

Write for the valuable
DIGESTER TANKAGE FOLDER.

Western Meat Co.

704 Townsend Street,

San Francisco, Calif.

Fine Sows With Cheap Equipment.

[Written for Pacific Rural Press]

There are almost as many methods of swine raising as there are swine raisers in California; and to say that any one is perfect and the others imperfect would be untrue, for our variety of feeds and climate make any one of a number of systems profitable and practicable.

Under certain conditions capital invested in fine buildings and surroundings may be necessary and economical; but in the majority of cases the doctrine of the veteran hog raiser, M. Bassett of Kings county, is perfectly sound, in which he says, "A hog doesn't require a palace to grow in if he gets plenty of exercise and feed."

Except for a few farrowing pens near the barn for winter farrowing Mr. Bassett's entire equipment consists of temporary fencing, a few home-made feed-troughs and home-made shelters constructed of rough lumber and thatched straw or hay roofs.

It is under such conditions that one finds what is probably one of the most valuable herds of purebred Poland China swine in the West; and it is under such conditions also that Mr. Bassett runs his market hogs.

Brood Sows. — Primarily, the handling of the brood sows on this ranch are of interest to all hog raisers, whether breeders of purebred or market hogs; for success or failure with hogs is largely due to the success one has with his brood sows.

On the Bassett ranch the first step with the brood sows is in selecting them for individuality and prolificacy. Among the specifications of the young brood sow are, rather short but heavy boned legs, strong pasterns, good hams, well arched back, small head, deep body, and well sprung ribs.

Sows to become members of the reserve herd must be from prolific ancestors, not necessarily from sows with a habit of farrowing extraordinarily large litters, but who regularly farrow uniform litters in both size and quality. Mr. Bassett believes a sow that will raise seven or eight pigs of uniform size is the most desirable.

Exercise. — Being once selected, exercise is probably the next most important consideration. Mr. Bassett believes that the worst thing you can do with the brood sow is to shut her up in a small pen. As a result of this belief he not only gives

his sows ample room but goes even further and sees that they avail themselves of it to the greatest degree.

These pens are made with temporary fencing so that they may be moved at small expense and always they are located on alfalfa in such a manner that the sow has access to an irrigating ditch. This latter may be criticised as being dangerous; but without it Mr. Bassett says he would be lost.

Close to the ditch is located the cheaply constructed shelter above referred to, under which the sows spend most of their time in warm weather, bathing in the ditch principally in the early morning.

At the other end of the pens are located the feed troughs where soaked ground wheat and barley are fed in the summer and corn in the winter, the latter being too heating in the warm summer. Feeding is done principally in the early morning and late evening in order that the sows may do their walking from shelter to feed in the cool parts of the day. By having exceptionally long pens and feeding in this manner each sow is compelled to make several long trips a day and thus develop bone and vigor which has a telling effort upon the young pigs when born.

And by securing this needed exercise, it has been Mr. Bassett's experience that a sow which is naturally an easy feeder, will keep in heavy flesh without harmful results to the litter she is carrying.

In good weather, farrowing is done in these same pens but in wet weather more protection is afforded by a specially built farrowing house.

Mostly the young sows and frequently the bred sows are allowed the run of orchards or other fields where they pick up waste fruit, are few pumpkins, corn, alfalfa pasture, etc., but never do they know anything about expensive equipment or the extreme intensiveness so frequently seen elsewhere. Good common sense in hog raising is Mr. Bassett's favorite advice to inexperienced raisers, for that is what he practices himself.

Some wool is still being held in the San Joaquin valley by the growers, one large sheep man stating that he has two clips on hand which he will send to the National Warehouse company next month unless local buyers raise their prices.



INKA CANARY MERCEDES 2ND.
To Be Sold at Frank M. Helm's First Annual Holstein Auction Sale,
Fresno, Sept. 12.

Choice Holsteins

Consigned From

A. W. Morris & Sons' Herd COWS - HEIFERS - BULLS

In the California Holstein Breeders' Sale at Hanford, Cal., October 18th, and at the big Sacramento Sale, October 26th and 27th, under the auspices of the California Breeders' Sale and Pedigree Co., the quality of our consignments will be unsurpassed by any previous Pacific Coast Sale.

THERE WILL BE—

Choicely bred A. R. O. cows in calf to 30-pound sires.

Heifers out of A. R. O. cows and 30-pound sires and bred to 30-pound bulls.

Young bulls from 30-pound dams and with such yearly record backing as has never before been included in a California sale.

A son of Prince Gelsche Walker (the \$12,500 sire) from a 27-pound three-year-old that made 20 lbs. as a junior 2-year-old.

A son of King Mead of Riverside from a State record daughter of Prince Gelsche Walker.

A son of SEGIS PONTIAC DE KOL BURKE from Dottie Clyde Korn-dyke, 31.88 lbs., 113 lbs. milk in a day, a daughter of Korndyke Queen De Kol's Prince.

Two sons of Aralia De Kol Pontiac Segis out of 31 and 32-lb. daughters of De Kol Burke.

A son of a 33.50-lb. cow.

Two sons of 29-lb. cows.

A son of a 27.50-lb. daughter of Riverside Sadie De Kol Burke.

A son of a 27.58-lb. 4-year-old daughter of a 33-lb. cow.

Others from 25 to 30-pound dams, all with large yearly records.

The three nearest dams of a number of these have yearly records from 800 to 1100 lbs. butter, and along with this they have an abundance of individuality and breeding.

Further information on request.

A. W. Morris & Sons WOODLAND, CAL.

Don't Overlook This!

California Holstein Breeders' THIRD ANNUAL SALE

Hanford, Cal., October 18, '16

100 Head Registered Holsteins

Consignments from reliable and well-established herds.
Select type. Choice breeding.

A sale of good, sound, dependable cattle, good enough for any herd. There will be no better opportunity this fall for the beginner to select foundation cattle at conservative prices. They will undoubtedly sell well worth the money. No extreme prices expected.

Good young A. R. O. cows in calf to some of the best 30-pound sires in the State. Many with records of 20 to 26 lbs.

Heifers from high record cows in calf to highly bred sires.

Young bulls with the type and breeding that qualify them to head the best herds.

For information and catalog address,

F. L. MORRIS, Sale Mgr.,
Woodland, Cal.

COL. B. A. RHOADES,
Auctioneer.

VALUABLE COWS ARE MILKED The Hinman Way



Grosvenor & Finen, Lebanon, N. Y., say:

We have used your milking machine since March, 1911, and we are very much pleased with the results obtained by machine milking.

Our herd has 30 head of registered Holsteins, and we always milk all of them, all of the time with the Hinman Milker. We have never had any udder trouble caused by the machines; if we were to buy a milker today it would be the Hinman, as we know it is the best mechanical milker made.

Among other registered herds milked by the Hinman are:

Edw. G. Patterson, Bismark, N. Dak., Registered Jerseys.
Ex-Governor A. E. Lee, Vermillion, S. Dak., Reg. Holsteins.
McKay Bros., Waterloo, Iowa, (Tilly Alcartra came from this herd).

Kvendalen Farm, So. Wayne, Wis., Reg. Holsteins.

W. H. Sidney, Central Bridge, N. Y., Reg. Holsteins.

R. E. Farrand, Sumner, Iowa, Reg. Holsteins.

S. E. BORAH, Hinman Distributor for Wisconsin, says: "We have in the vicinity of Green County considerably over 500 units and practically no kickers."

The new Hinman Auto Milker is just out. Be sure to see it at the State Fair.

C. F. Daniells & Son

2511 Prince St.,
Berkeley, Cal.

Just a Tilt of the Pail

Women don't mind filling the knee-high supply can of the new Suction-feed. Only a few inches to lift. No straining of back or arms.



THE NEW SHARPLES SUCTION-FEED

Separator gets all the cream all the time. Any other separator will lose cream when the speed slackens. You can't always turn at exactly the right speed. No one can. It's impossible. The Suction-feed skims clean, fast or slow, and delivers even cream. Capacity increases with the speed. Come in and let us show you how it works.

See these Separators on exhibit at the State Fair.

SHARPLES
SEPARATOR CO.,
San Francisco, Cal.

GET STARTED RIGHT.

Registered DUROC JERSEYS

Service Boars from Prize-Winning Stock are money makers.

They grow faster. Send today.
NEW ENGLAND CALIFORNIA
CORPORATION,
California

BALDWIN RANCH STOCK SALE.

[Written for Pacific Rural Press]

Breeders of purebred livestock will be more than ordinarily interested in the announcement that the Santa Anita Rancho, owned by Mrs. Anita M. Baldwin, is to hold its first annual sale of purebred livestock on the home grounds October 23 and 24 including registered Holstein cattle, thoroughbred and Arabian horses, and Berkshire and Poland China swine.

Included in the Holsteins, according to Superintendent W. H. Taylor, will be a son of Alba Sadie who made a record early this year of 34.16 pounds of butter in seven days; a son of Miss Valley Mead De Kol Walker; a son of Prince Gelsche Walker out of a 23-pound three-year-old; and a son of the world's official record cow for six months, Mosetta Mutual Paul Johanna, whose six-month record was 16,842.2 pounds of milk and 706.267 pounds butter. This wonderful cow is still on test and is expected to break the yearly record for this class.

Altogether there will be 15 bulls offered; and except one or two head, all will be out of A. R. O. dams.

The hog offering will be equally high in quality as the Holsteins, the 25 head to be sold being sired by such boars as Bankers Boy, Kintyre Laird, and Longfellow Duke and out of champion and prize-winning sows at the P. P. I. E.

To lovers of good horses the sale will offer special inducements, as there will be two mares and three geldings sired by the derby winner Rey El Santa Anita. Besides these there will be a number of Mrs. Baldwin's fancy gaited saddlers sired by such outstanding stallions as Ibu Makruss and Don Castana. Most of these latter will be two and three years old and fully in keeping with the high quality horses for which Santa Anita Rancho is noted.

The greatest crowd of livestock breeders ever assembled at a public sale in the West is expected to be present when Col. Ben Rhoades begins calling for bids, as breeders from far and near will doubtless avail themselves of this opportunity to accept the hospitality of one of the West's greatest breeding establishments.

STOCK TESTED BEFORE SALE.

The best way to keep the purebred business in California on a paying basis is to play the game "square" and earnestly endeavor to give the buyer every protection possible. The various registry Associations guarantee the purity of blood in the animals registered in their books, but aside from this the California buyers have never received as strong a guarantee as to the health of the animal they purchase as is being given by Mr. Frank M. Helm at his sale at Fresno on Sept. 12th.

Mr. Helm has arranged with Dr. Chas. Keane, State Vet., to test his cattle going into the sale and to also make a rigid physical examination of each individual. This is the first sale ever held in California where the Live Stock Sanitary Department has taken full charge and will issue individual certificates showing the animal to be right.

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Pure Bred Registered Holstein Heifers

"THE BEST IN THE WEST"

will be sold at the

Rio Vista Holstein Farm Dispersion Sale

Including the choice McAlister & Sons Consignment.

Tuesday and Wednesday, Sept. 19th & 20th

RIVERA, CALIFORNIA.

There will be heifers from such great sires as

**KING OF THE PONTIACS
SPRING FARM KING PONTIAC
COUNT SEGIS
SPRING FARM KING PONTIAC 6th
TIDY ABBEKERK PRINCE
ARCULA ALCARTRA SIR KORNDYKE
KING HENGERVELD**

and they are bred to the greatest herd sires in the West, and all out of high record dams. These are just a few of the good ones to be sold in the line of heifers. And remember everything in this sale will be tuberculin tested within 10 days of the sale and individual certificates furnished with each animal.

Write for catalog to

COL. BEN A. RHOADES
AUCTIONEER.

1505 South Main St.,

Los Angeles, Calif.

FOR YOUR PROTECTION

THE

75 HIGH CLASS HOLSTEINS

AT

FRANK M. HELM'S

First Annual Sale

Fresno, California

Tuesday, September 12th, 1916

will be sold under the direct supervision of the

Live Stock Sanitary Department

of the State of California and individual certificates signed by the STATE VETERINARIAN will be issued with each animal, showing that the animal has passed the Tuberculin Test and also a rigid physical examination. Therefore, if you are looking for the highest type of purebred Holsteins, attend this sale. Write for a catalog to

COL. BEN A. RHOADES,
Auctioneer.

FRANK M. HELM,
Fresno, Cal., Box 15B.

HILLCREST STOCK FARM

DAVIS, CALIF.

T. S. GLIDE, Prop.

Breeder of

Shorthorn Cattle

and the Famous Blacow—Roberts—Glide

FRENCH MERINOS & Purebred SHROPSHIRE SHEEP.

Ram Lambs and Shorthorn Bulls for Sale

KING LANCASTER,
Son of King Edward—Grand Champion
Bull, California State Fair, 1909-1910-1911.

SEE MY STOCK AT THE CALIF. STATE FAIR SEPT. 2-9



HILLCREST LAD,
Champion Shropshire Ram California
State Fair, 1911.

Recording Hog Weights, Gains, Feeds.

[Written for Pacific Rural Press]

There is only one way of knowing whether you are putting economical gains on your hogs and that is by weighing the feed and hogs at regular intervals.

Usually this is not done because of the supposed trouble it requires to weigh each feeding and keep track of it for a number of pens.

On the Peters, Lamson, and Walker ranch at Devore, San Bernardino county, a simple system of hog book-keeping has been worked out by the introduction of daily feeding sheets, like the one shown below:

Date	Feeds	Pen Number		Pen Number		Pen Number	
		A. M.	P. M.	A. M.	P. M.	A. M.	P. M.
Jan. 1, 1916	Barley						
	Brans						
	Tankage						
	Oil meal						
	Middlings						

Instead of ruling off just one day's record as is shown above, several days are included on each sheet of paper and these sheets are tacked to the wall close to the feed-mixing floor.

Measures are used, the capacity of each in pounds being already ascertained, which data is also posted on the wall. When feeding is done, the amount of each feed contained in the ration is measured out for each pen and the various amounts of the respective feeds are placed opposite their names on the feed rec-

ord under the pen number for which it is to be used. If the amount is fed in the morning it is put under "A. M." and if at night under "P. M."

After one familiarizes himself with the measures it takes but an instant to mark down the amount of each feed used for each pen. The amounts shown in one day serve to guide the feeder as to the amount each pen should have the next.

From these record sheets the data are transferred to a book which shows the age, weight, gain previous two weeks, gain last two weeks, gain

per pound of grain, gain per day, cost per pound of gain, per cent of each feed per hundred pounds live weight.

Every two weeks the hogs are weighed; and by reference to the data contained in the record book, it is easy to determine the cost of gain and the efficiency of each feed used.

By recording the age of stock in each pen, the kinds and amounts of feed most economical for different aged animals may be determined with little extra work.

COW TESTING RESULTS.

Kern county's Farm Bureau's first month of cow testing included 1011 cows. The following produced over 40 pounds fat:

(Initials indicate the breed.)

Owner.	Lbs. Milk	% Fat	Lbs. fat
B. H. Bitner, J.	1473	4.4	64.8
T. M. Calvert, D.	1269	4.8	60.9
W. W. Taussig, J.	1014	5.4	54.7
J. A. Pauley, J.	1269	4.3	54.6
P. A. Lee, H.	1425	3.8	54.3
H. G. Hull, H.	1404	3.8	53.4
C. H. Stiles, H.	1341	3.9	52.3
H. B. Miller, J.	642	8.1	52.0
B. H. Bitner, J.	1250	3.7	50.3
H. B. Miller, D.	738	6.8	50.2
S. R. Deal, H.	1557	3.2	49.8
C. S. Fillmore, J.	1149	4.3	49.4
B. K. Packer, D.	933	5.1	47.6
F. A. Nance, D.	1158	4.1	47.5
C. H. Stiles, H.	1350	3.5	47.2
B. H. Bitner, J.	1074	4.3	46.2
E. B. Root, D.	1125	4.1	46.0
B. H. Bitner, J.	1233	3.7	45.6
D. W. Taussig, J.	843	5.4	45.5
B. H. Bitner, J.	1110	4.1	45.5
C. H. Stiles, J.	600	7.5	45.5
B. H. Bitner, J.	1377	3.3	45.2
W. W. Taussig, J.	981	4.6	45.1
M. H. Krauter, H.	1281	3.5	44.8

A. E. Beckes, H.	1242	3.6	44.7
C. H. Stiles, J.	1089	4.1	44.7
E. B. Root, D.	1011	4.4	44.5
C. H. Stiles, H.	1170	3.8	44.5
W. W. Taussig, J.	1104	4.0	44.2
W. W. Taussig, J.	975	4.5	43.9
Peter Cattani, J.	996	4.4	43.8
T. S. Voorhies, H.	993	4.4	43.7
P. A. Lee, H.	1179	3.7	43.6
S. T. Baldwin, D.	1083	4.0	43.3
B. K. Packer, H.	1107	3.9	43.1
A. A. Sprehn, J.	1197	3.6	43.1
F. A. Nance, J.	1098	3.9	42.8
S. R. Deal, H.	1125	3.8	42.8
E. B. Root, D.	1179	3.6	42.4
J. A. Pauley, J.	1002	4.2	42.1
A. H. Swain, J.	858	4.9	42.0
J. A. Pauley, J.	921	4.5	41.5
E. B. Root, D.	1110	3.7	41.1
S. R. Deal, H.	1242	3.3	41.0
H. G. Hull, J.	996	4.1	40.8
C. H. Stiles, J.	825	4.9	40.4
J. A. Pauley, J.	1008	4.0	40.3

Sec'y S. F. Bonner reports the following July records made by grade and common cows in the Gridley Cow Testing Association.

J. H. Guill, Chico, H.	1790	3.7	66.5
C. Goetz, Tudor, S.	1404	4.5	63.2
A. C. Dorn, Oroville, H.	1383	4.1	56.7
A. C. Dorn, Oroville, S.	1318	4.0	52.7
W. J. Condon, Chico, J.	1246	4.2	52.3
A. C. Dorn, Oroville, S.	1122	4.5	50.5

RIVER BEND FARM

ST. HELENA, NAPA CO., CAL.

SMOOTH—BIG TYPE—RANGEY.

Registered Durocs

FOR FOUNDATION STOCK.

RIVER BEND FARM

ST. HELENA, NAPA CO., CAL.

N. H. LOCKE CO., LOCKEFORD, CAL.



Will be at the Live Stock Shows With

Jersey Cattle

and O. I. C. Swine

With our herd will be a number of young Jersey bulls, ready for service, and out of our large high-producing cows, that will be for sale.

Also, young boars of splendid growth and type.

If you need a herd sire, be sure to see this lot at your nearest fair. We are taking them there for your inspection before buying.

If more convenient, visit our ranch or write for prices and pedigrees.

Meet Me at the Fair

and inspect I. B. A. WONDER, No. 218975, and about thirty head of his get, which will be for sale after the show. At Napa his pigs won first, weighing 330 lbs. at 213 days from birth, grown by a novice. What breed of hogs can beat it?

I. B. A. WONDER weighs almost 1000 lbs. in breeding condition and is as smooth as a pig.

W. A. YOUNG
LODI, CALIFORNIA

Breeders of Registered Poland-Chinas.

There is a great interest at this time among swine breeders regarding sales and exhibits at the various fairs. Now is just the time when you need a copy of the "California Hog Book," which covers the swine industry from every standpoint. Price \$2 postpaid.

LIVESTOCK AT THE STATE FAIR.

(Continued from page 215.)

4; Lone Tree Belgian Horse Co., Brentwood, 1; J. K. McComber, Tip-ton, 3.

Clydesdales.—California Polytechnic, San Luis Obispo, 1; Ruby and Bowers, Davis, 6.

Shires.—Jack London, Glen Ellen, 9; E. W. Westgate, Rio Vista, 3; Easton and Ward, Burlingame, 27. Grades and Crosses.—E. Farnham, Roseville, 2; University Farm, Davis, 3; M. Bassett, Hanford, 7.

Jack Stock.—M. A. Merrill, Wil-lows, 6; Frank Hatch, Modesto, 3; F. A. Kingsbury, 2.

Draft Horses in Harness.—Ruby & Bowers, Davis, 6.

Sheep and Goats: Rambouillets.—Bullard Bros., Woodland, 21.

Shropshires.—Bishop Bros., San Ramon, 36; Knollin and Finch, Soda Springs, 23.

Hampshires.—Kaupe Bros., Woodland, 15; Calla Grove Farm, Manteca, 2; H. C. Hinckley, Grafton, 1; Knollin and Finch, Soda Springs, 2.

Oxford.—Frank Hatch, Modesto, 2.

Range Sheep.—T. S. Glide, Davis, 21; Bishop Bros., San Ramon, 21; Bullard Bros., Woodland, 36.

Chas. Mayer and Wm. Quinn of Tuolumne county have sold their Clavey river range and several hundred cattle to E. Royberg of Coopers-town.

Moorland Farm

will be represented at HOL-STEIN CONSIGNMENT SALE at Hanford, Oct. 18th, by several A. R. O. cows with records up to 26 lbs. butter in seven days, a few choice bred heifers, and two sons of a 27 and a 26-lb. cow, and sired by the popular bull COLANTHA SIR PONTIAC AAGGIE, whose sons and daughters are proving that he is one of the best bulls in the State. All consigned are safe in calf to him.

K. W. ABBOTT,
Milpitas, California

ALFALFA MEAL

If you use any alfalfa meal at all, in small amounts or in car lots, write to us and buy direct.

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Route "B," Box 283,
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MODEL HERD OF BERKSHIRES

Bred for size, bone and quality. Pigs for sale, sired by Big Royalist 180837 and Breed's Model 165859, both winners of blue ribbons at State Fair.

Descriptive catalog upon request.
J. I. GISH, Laws, Inyo County, Calif.

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Dealers 37 FIRST ST., SAN FRANCISCO
In Blake, Moffitt & Towne, Los Angeles
PAPER Blake, McFall & Co., Portland, Oregon

COMING FAIRS.

Yolo County Fair, Woodland, Aug. 26-29.

Vintage Festival, St. Helena, Sept. 1-4.

Cal. State Fair, Sacramento, Sept. 2-9.

Humboldt County Fair, Ferndale, Sept. 5-9.

Fourth and Fifth Supervisoral Districts, Mariposa county, at Jerseydale, Sept. 8-10.

Alameda County Fair, Pleasanton, Sept. 13-17.

Napa County Farm Bureau Sept. 14-16.

Cal. State Floral Ass'n Dahlia Show, Oakland, Sept.

Ripon Community Fair about Sept. 20.

Ventura County Fair, Ventura, Sept. 13-16.

Farmers' Union Fruit, Flower, and Vegetable Show, Union School, Santa Clara county, Sept. 16.

Stanislaus Livestock Show and Exposition, Modesto, Sept. 18-23.

Merced County Fair, Merced, Sept. 19-23.

Nevada State Fair, Reno, Sept. 21-26.

Oregon State Fair, Salem, Sept. 25-30.

Fresno District Fair, Fresno, Sept. 26-30.

Kings County Fair, Hanford, Oct. 2-7.

Yolo County Farm Bureau Har-vest Festival, Woodland, Oct. 7.

Kern County Fair, Bakersfield, Oct. 9-14.

Riverside County Fair, Riverside, Oct. 10-14.

Arizona State Fair, Phoenix, Nov. 13-18.

International Livestock Exposi-tion, Chicago, Dec. 2-9.

Cal. State Poultry Show, Modesto, Dec. 6-9.

Pacific International Livestock Exposition, Portland, Ore., Dec. 4-9.

Panama California Exposition, San Diego, open until Dec. 31.

STATE POLAND CHINA ASSOCIA-TION PROPOSED.

Hurrah for the Poland China peo-ple! O. L. Linn of the Modesto Poland China Breeders' Ass'n writes that the Kings County breeders ex-pect to co-operate in the Sale of the former to be held Sept. 20 during the Stanislaus Livestock Exposition Sept. 18-22. They will probably hold a get-together meeting and ban-quet at which will be discussed the idea of forming a State-wide fed-eration of all the local associations now existing. This is a suggestion proposed and favored by Pacific Rural Press and we will be glad to note its unbounded success.

The first co-operative sale of all kinds of stock ever held in Cali-fornia, will be carried out by the local Farmers' Union on the same day as the Poland China sale, but with no public outcry.

Gombault's Caustic Balsam

The Worlds Greatest and Surest

Veterinary Remedy

HAS IMITATORS BUT NO COMPETITORS!

SAFE, SPEEDY AND POSITIVE.

Supersedes All Caustery or Fir-ing. Invaluable as a CURE for

FOUNDER,
WIND PUFFS,
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SKIN DISEASES,
RINGBONE,
PINK EYE,
SWEENEY,
BONY TUMORS,
LAMENESS FROM
SPAVIN,
QUARTER CRACKS,
SCRATCHES,
POLL EVIL,
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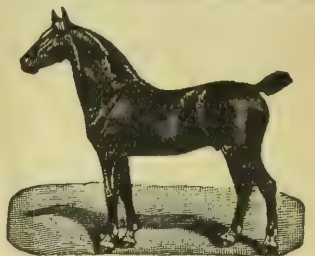
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BLEMISHES,
SPLINTS,
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STRAINED TENDONS.

SAFE FOR ANYONE TO USE.

We guarantee that one tablespoonful of Caustic Balsam will produce more actual results than a whole bottle of any liniment or spavin mixture ever made. Every bottle sold is warranted to give satisfaction. Write for testimonials showing what the most promi-nent horsemen say of it. Price, \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use.

The Accepted Standard VETERINARY REMEDY

Always Reliable. Sure in Results.



None genuine without the signature of
The Lawrence-Williams Co.
Sole Proprietors & Distributors for the
U. S. & CANADA. CLEVELAND, O.

NOTHING BUT GOOD RESULTS.

Have used GOMBAULT'S CAUSTIC BALSAM for more than 20 years. It is the best blister I have ever tried. I have used it in hundreds of cases with best results. It is perfectly safe for the most inexperienced person to use. This is the largest breeding establishment of trotting horses in the world, and use your blister often.—W. H. RAYMOND, Prop., Belmont Park Stock Farm, Belmont Park, Mont.

USED 10 YEARS SUCCESSFULLY.

I have used GOMBAULT'S CAUSTIC BALSAM for ten years, have been very successful in curing curb, ringbone, capped hock and knee, bad ankles, rheumatism, and al-most every cause of lameness in horses. Have a stable of forty head, mostly track and speedway horses, and cer-tainly can recommend it.—C. C. CRANER, Training Stables, 990 Jennings Street, New York City.

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CLEVELAND, OHIO.

Championship Bred Berkshire Sows

FIFTEEN BRED YEARLING SOWS.

Sired by Charmer's Duke 77th 186329
Bred to Ames Rival 102nd 210054

RIVERBY PRINCESS, GRAND CHAMPION P. P. I. E., Will Be Shown at State Fair for Exhibition Purposes Only. CHARMER'S DUKE 77th was third at P. P. I. E., and grand champion boar of any age at Missouri State Fair 1913, and headed first prize herd. AMES RIVAL 102nd was bred by Dean C. F. Curtis of Iowa Agr. College, and won reserve grand championship at P. P. I. E.; sired by Artful Duke 32nd, and out of Rookwood Baroness 18th. See these boars and all the bred sows at the State Fair, Sept. 2-9. Will have 33 head there, including also Riverby Princess 2nd, Riverby Princess 3rd (litter mates of Riverby Princess), Mayfield Lady 2nd, Mayfield Rookwood 2nd, and Rookwood Belle 7th.

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SANTA ROSA.

F. A. BRUSH, Owner.

C. E. BARROWS, Manager.

WILLIAMS FEED GRINDER



Cuts --- Shreds --- Grinds

Separately or in
Combination

Any kind of hay, straw, vines, beet tops, sheaf grain, and grain either shelled or in the head

Six sizes from 500 pounds per hour up to 10 tons per hour

The Alfalfa Meal receiving the Gold Medal at the P. P. I. E., 1915, was ground by a William's Mill, which had then been in operation five years.

Write for Bulletin No. 752

Williams Patent Crusher & Pulverizer Co.

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268 Market Street,

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Ask Your Dealer For

El Dorado Cocoanut Oil Cake

for Milk Cows and Chickens and Young Pigs and Hogs. Cheapest food in the market today. If your dealer doesn't carry it, address

EL DORADO OIL WORKS,

433 California Street,

San Francisco.

Truckee Valley Model Dairy.

[Written for Pacific Rural Press by Bert S. Wolf.]

The largest dairy in Truckee Valley is also known as The Model Dairy. It is owned by C. W. Brooks of Reno, who has about 100 cows, mostly Holsteins. Eventually all his stock will be Guernsey and Holstein.

Cleanliness of barns and corrals, washing of the cows, special white suits for the milkers, etc., enable Mr. Brooks to put out a milk of low bacterial count claimed up to certified milk standards, though there is no such thing yet as certifying milk in Nevada.

Cleanliness is made easy by the automatic pumping engine which gives 60 pounds water pressure through a 1000-gallon tank. This water exclusively is used for drinking, also to cool the milk quickly to 52 degrees, and to flush out the barn after every milking.

Sheds with concrete foundation posts all over the ranch protect the cows from stormy weather.

Plenty of alfalfa is grown on the place and stacked for winter use with 1½ tons of salt to 400 tons of hay.

Mr. Brooks is about to visit the

large dairies of California to pick up pointers for still further improvement.

MOVABLE DAIRY COW STANCHIONS.

[Written for Pacific Rural Press.]

In building dairy barns it is always difficult to arrive at the proper distance that should separate the stanchion and the gutter, because of the great variations in the length of different cows.

R. F. Fischer of Carlotta, Humboldt county, has overcome this trouble in his dairy barn by making movable stanchions. This is accomplished by building three stanchions into each section and having each section movable backward or forward, according to the length of the cows, the stanchions being supported at the end by four-by-four roof supports.

To further facilitate the work of fitting the floor space to the cows, it is the practice to select those of nearly equal size for each section of stanchions, the older cows usually being grouped together as are the heifers by themselves.

RAISING CALVES.

[Written for Pacific Rural Press.]

Calf-raising is more trouble than it should be on many dairies and most of it is due to the method of feeding. Such is the belief of A. J. Hesse of Merced county, who never has any trouble in this respect.

For the first three milkings the calves on this ranch are allowed to suckle their mothers. Then they are started on whole milk fed in buckets, but care is always taken that they are good and hungry before this is begun.

At first they are induced to drink by letting them suck the feeder's fingers; but in three days they are willing to drink out of the bucket without coaxing. The ration of milk is always weighed out to them and care exercised in not giving too much as that would cause scouring.

At seven days their horns are treated with caustic, this having been found the most satisfactory time for dehorning by Mr. Hesse.

SELL DILUTED MANURE.

[Written for Pacific Rural Press.]

Citrus growers and others who customarily buy manure for fertilizer in the large cities would do well to look into the source of supply, according to one of our subscribers in Los Angeles county, past whose place of business a large amount of manure is hauled daily.

According to this friend, it is the practice of these city manure collectors to load their wagon with manure and then soak it heavily with water, to increase the load.

Another practice of these collectors is to mix sand with the manure after collecting it. In this case the wagonful of manure is driven to a large pile of sand and unloaded. Reloading is then started, one man staying on the wagon to mix the sand and manure while the other one throws on some manure, then some sand, etc. When mixed the sand is difficult to detect,

Western American Berkshire Congress

MEETING
Sept. 4

SHOW
Sept. 5 and 6

SALE
Sept. 7

AT STATE FAIR GROUNDS, SACRAMENTO.

BERKSHIRE WEEK ON THE COAST

THE CONGRESS MEETING should draw every Berkshire man on the Pacific Slope. A strong program has been prepared and the discussions will be led by men prominent in Berkshire circles—men who have something to say and know how to say it.

THE CONGRESS SHOW will be the greatest exhibit of Berkshires ever held on the Coast. It will be a wonderful show of Berkshire breeding stock of the highest type and quality.

THE CONGRESS SALE will be an offering of choice selected Berkshire breeding animals. Only good ones, and from the best and most popular blood lines. Consignments to the Sale are from some of the most prominent Berkshire Breeders in the West—A. B. Humphrey, Jos. Wilson, Clark Bros., F. L. Hall, C. M. Talmadge, F. R. Steel, J. L. Thatcher, Hollow Hill Farm, Fontana Land Co., G. A. Murphy, H. L. Murphy, Oak Grove Dairy Farm, and others.

This is an opportunity to get the best for your foundation herd.

Remember the dates, and be there.

J. L. THATCHER,
President,
Western American Berkshire Congress,
Riverside, Cal.

F. R. STEEL,
Secretary,
Western American Berkshire Congress,
Grant's Pass, Oregon.

FIRST CONSIGNMENT SALE OF THE

Duroc-Jerseys Swine Breeders' Association

Consisting of 40
of the choicest
animals of the



respective breeders, will be held at the

STANISLAUS COUNTY LIVE STOCK SHOW
AND EXPOSITION.

September 18 to 23.

Date of Sale, Sept. 22. Time 1 p. m.

For complete catalogue, write ELMER LAMB,
T. J. GILKERSON, Lemoore,
Auctioneer.

Secretary,
Ceres, Cal.

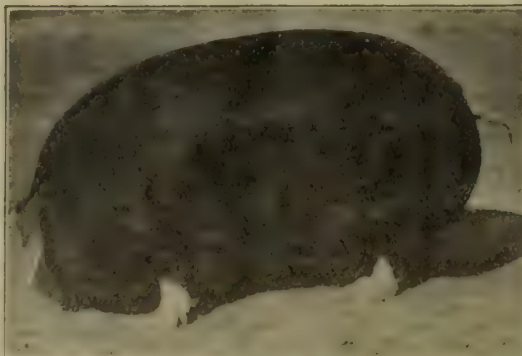
M. BASSETT'S STRAIN

Poland-China Swine

(Large-Medium Type)

Will be exhibited at the

STATE FAIR, SACRAMENTO, SEPT. 2-9.



I have endeavored to make this the best and most attractive exhibit that I have ever shown, and cordially invite everyone interested to see my hogs at the Fair.

I will have a few very fine young animals for sale.

Grand Champion Sow, P. P. I. E.

M. BASSETT,

Hanford, Cal.

THE PAPEC



PAPEC SILO FILLER and HAY CUTTER

An all-steel, indestructible machine. The only Cutter and Blower with a positive Self-Feeding Device.

The easiest to operate, highest blower, greatest capacity, simplest in construction. Takes one-third less power and has a full face value guarantee.

Use the Papec and get Results. Local agents everywhere.

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Headquarters for the best in Golden Model and Colonel breeding. These are the two leading families of the breed. Ranches as Holtville and Devore, San Bernardino County.

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Purebred livestock sales given special attention.

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Dewey Strong & Townsend



Making Cheddar Cheese in Valley Heat.

[Written for Pacific Rural Press.]

What looks to be the beginning of successful cheese manufacture with milk from alfalfa-fed cows is the experience of the Caruthers Cheese Factory in Fresno county during the past two years. About 12,000 pounds of milk is being received at this factory daily, though this amount is increased during the fall and winter months when most of the cows freshen, and when it is easier to deliver milk in a sweet condition.

A good quality of cheddar cheese is being turned out at this plant for which a satisfactory market has been found. While it is doubtful whether the product could go onto the Eastern markets in competition with Eastern made cheese, it is a big improvement over past attempts at cheese making in the interior val-

leys; and there is every reason to expect improvement in the future.

That such factories afford a good market for the dairyman is indicated by the large quantity of sweet milk being received at the most trying time of the year for interior valley dairymen. This is directly attributable to the fact that while the price to the producer is based on the cheese quotations, it is always four to six cents above the San Francisco butter quotation. This premium seems large enough to warrant the additional care necessary for delivery of sweet milk to the factory. These prices are based on four per cent milk. A delivery charge of 10 cents a hundred is deducted where the farmer does not deliver his own milk.

STARTLED BY SCALES AND TESTER.

[Written for Pacific Rural Press.]

As a suggestion of how small a percentage of the dairy cows in the State are capable of producing at least 300 pounds of butterfat in a year, we present the experience of Charles Olsen of Atwater.

Mr. Olsen is an experienced creamery man; and when he purchased his present ranch of 68 acres he decided to select his milking herd by the tester and scales. During the past three years he has purchased at different times 30 grade cows; and of that number just six have been reserved, none of the others being able to make the 300 pounds of fat a year that Mr. Olsen insists on.

The fallacy of trying to determine the worth of a cow for butterfat production without use of scales and tester is shown by a cow that Mr. Olsen tested on his own ranch.

He weighed and tested her milk and found that she was giving better than a pound and three-quarters of fat a day. Furthermore, she proved persistent and is now considered one of the best cows in the herd.

Another advantage of weighing and testing the milk has been found in the prices offered for Mr. Olsen's cattle, one man offering him \$150 apiece for four head when the ruling price was between \$80 and \$90.

TWO SOWS YIELD \$800.

[Written for Pacific Rural Press.]

While hog raising is not the get-rich-quick industry that some would have us believe, surprising results are often secured with one or two

good young sows as a foundation.

It was from such a start that H. Ward of Chowchilla, Madera county, has been able to sell over \$800 worth of breeding and butcher hogs during the past two years.

Needless to say Mr. Ward's two foundation sows were purebreds, both being Durocs. Mostly, they as well as their offspring have been grown on alfalfa; with a moderate amount of barley all the time, for it has been his experience that to be successful with hogs a small amount of grain in the ration all of the time is desirable.

At the time of our visit, this grain was being furnished by the rakings from a grain field that had already been harvested. Pasturing the stubble would have been better, but the field was not fenced, so the other method was substituted. Some tankage was fed last winter with good results.

EARLY WINTER PASTURE.

[Written for Pacific Rural Press.]

Rape planted between the rows of sorghum corn early in September on Hawley Bros.' ranch in Madera county did not amount to much because it was not irrigated and the rains were late. It came up and lived through, but made very little growth.

But one section of corn, not planted to rape, which was cleared off in the fall and irrigated, was planted to rye and vetch for winter pasture about Oct. 1. This made good pasture in late November, though other pieces planted a little later did not make good.



A Daughter of the King of the Pontiacs, Consigned by McAlister & Sons to the Rio Vista Holstein Farm Dispersion Sale, Rivera, Sept. 19 and 20.

REMCO Air-Dried Redwood

PIPE

For Irrigation—Water Supply—Power. Sizes 2 inches to 12 feet. For pressures up to 400 feet head. Guaranteed for 100 per cent overload.

Costs less than any other pipe of equal capacity, efficiency and endurance.

Not affected by worms or insects, acid or alkaline soils, electrolysis or roots.

Withstands extremes of heat and cold, dryness and moisture.

Outlasts any pipe except cast iron, and maintains its full flow capacity to the end.

TANKS

for Water—Wine—Vinegar—Oil—Acids—Solutions. For Storage—Mixing—Fermenting—Pickling—Leaching. In all shapes and sizes—500 gals. to 500,000 gals.

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for Dairymen—Stockmen—Feeders. Sizes, 25 tons to 300 tons. **THE BEST.**

ALL REMCO PRODUCTS are manufactured to your order from CLEAR, AIR-DRIED REDWOOD.

Selected from our stock of forty million feet.

Their outstanding features are **HIGHEST GRADE MATERIAL—MECHANICAL PERFECTION—SUPERIOR EFFICIENCY** and **MAXIMUM DURABILITY.** Catalog sent on request.

Redwood Manufacturers' Co.

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SAN FRANCISCO.

Grapewild Farm Berkshires



Grand Leader 2nd.

WORLD'S FAIR GRAND CHAMPION Berkshire Boar is bred in Champion lines—won championship honors in one of the greatest Berkshire shows ever held—sires champions, and we have championship material for sale. Our 75 brood sows have been selected through six years of careful breeding. Choice gilts bred to the Grand Champion for sale as well as boar pigs of Grand Leader breeding. Visitors welcome. Satisfaction guaranteed.

GRAPEWILD FARMS

Escalon, A. B. HUMPHREY, PROP., San Joaquin Co., Cal.

See our Show Herd at the State Fair (about 30 entries). Don't miss the **Western Berkshire Congress Sale.** It consists of entries from among the Best Berkshire Herds in the State. The sale will be held immediately after the judging.

LARGE YORKSHIRE SWINE

We'll be white and clean and pretty.

With ribbons in our hair.

Meet us down on Yorkshire alley

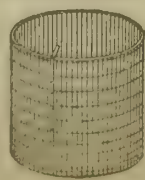
At the California Fair.

Gilts to farrow in September and October, service hours and Spring pigs.

Both Sexes.

RIVERINA FARMS.

Paradise Road, Modesto, Cal.



REDWOOD TANKS SILOS

Water Troughs, Windmills, Frames, and Towers.

Steel and Wood.

Prices the lowest.

BROWN & DYSON

610 So. Center St., STOCKTON, CAL.

With the Live Stock Men.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

COMING LIVESTOCK SALES.

W. H. Dupee, Sacramento, Guernseys, Sept. 6.
Rucker & Coppin, Sacramento, Durocs, Sept. 8.

B. Martella, Hanford, cows, horses, hogs, Aug. 30-31.

Cal. Sales and Pedigree Co., Sacramento, Holsteins, Oct. 5-6.

Stanislaus County Poland China Breeders' Ass'n, Modesto, Sept. 20.

Stanislaus Farmers' Union, Modesto (all kinds of live stock), Sept. 20.
Whitehall Estates, Tracy, Short-horns, Berkshires, Percherons, Oct. 10-12.

Kings County Poland China Breeders' Ass'n, Hanford, Oct. 19 (200 head, not over 20 boars, as planned).

Frank Helm, Fresno, Holsteins, Sept. 12 (75 head, all having passed the tuberculin test and certified sound).

Baldwin Ranch, Santa Anita: Saddle, driving, and work horses, Holsteins, Berkshires, Poland Chinas, Oct. 23-24.

Stanislaus County Duroc-Jersey Swine Breeders' Ass'n, Modesto, between Sept. 18 and 23. (Forty head selected from local herds to give buyers and visitors a good impression.)

Western American Berkshire Congress, Sacramento, Sept. 7. (Consignments from A. B. Humphrey, F. L. Hall, J. L. Thatcher, C. M. Tamadge, F. R. Steel, Murphy Bros., Clark Bros., and other well known breeders.)

Cal. Holstein Breeders' Ass'n, Hanford, Oct. 18 (100 registered Holsteins, many with A. R. O. records, 20 to 26 pounds. All consigned by leading breeders of the State, including A. W. Morris and Sons of Woodland.)

McAlister and Rhoades, Rivera, Holsteins, Sept. 19-20 (heifers from King of the Pontiacs, King Hengerveld, Spring Farm Pontiac Tidy Abbekirk Prince, etc., out of high record dams and bred to well-known bulls. Every animal tuberculin tested).

DAIRYING AND DAIRYMEN.

Good grade dairy cows are reported to be selling for \$100 to \$125 apiece in the dairy districts tributary to Los Angeles.

Jewel of Venadera, owned by Guy Miller of Modesto, has recently finished a record as a 3-year-old of 609.9 pounds fat from 10,262 pounds milk.

There is a growing conviction among dairymen of southern California that it is cheaper to buy alfalfa hay and plant the land to Indian corn after a crop of grain hay has been previously harvested.

Two brick silos are being erected on the Rio Vista Ranch owned by Col. Ben. Rhoades of Rivera. It is thought they will be equally efficient as concrete silos and about half as expensive to build.

The Fontana Land Company now have close to 5,000 hogs on their properties near Fontana, San Bernardino county. A considerable number of these are purebred Berkshires, Poland Chinas, and Durocs.

The feeding of fresh beet pulp to beef cattle has been entirely done away with at Oxnard, all of the pulp

now being dried and sold in that form. The American Beet Sugar Co. is turning out 3600 sacks of the dried pulp a day for distribution all over the United States.

The Sam Davis herd of Holsteins was imported to Nevada State from Germany 25 years ago by Sam Davis and the Migules Bros. of Carson. This was the first Holstein herd in Nevada and H. A. Migules still has a cow from the original foundation.

Frampton Bros. of Artesia state that their two concrete silos paid for themselves the first year they were in use, the agreement with the builders being that whatever saving was made each month in mill feed would be applied to the construction costs.

The milk producers of southern California, through their co-operative marketing association, are not only getting an increased price for their product, but are saving their members a great many thousand dollars by co-operative purchasing of feed in large quantities, direct from the producer.

SWINE BREEDERS AND STOCK.

New hog quarters are contemplated on the farm of the Whittier State school, in order that a large number of purebred Berkshire brood sows may be maintained.

Hayden Smith of Woodland reports July Duroc sales as follows: Boar to Richter and Clover, Woodland; boar and gilt to Chas. Schnepfe, Dunnigan; boar and gilt to W. L. Haley, Lassen county; boar and three gilts to G. L. Horine, Merced county; five bred gilts to G. R. Oliver, Solano county; boar to A. H. Coates, San Francisco.

River Bend Farm, St. Helena, has just received a 600-pound daughter of the Duroc International grand champion, "Defender." This sow was purchased in Kentucky and is bred for early farrowing to "Orion's Pal." The Farm will exhibit its herd boar "River Bend High Model," a sow—"River Bend Lass"—bred to him, and eight four-months pigs which top the scales at over 100 pounds.

Secretary Elmer Lamb writes that the Duroc-Jersey Swine Breeders' Association of Stanislaus county has completed arrangements for the consignment sale to be held at the Stanislaus County Live Stock Show and Exposition. T. J. Gilkerson will cry the sale Sept. 22 at 1 p. m., assisted in the ring by O. S. Gilbert. Prof. J. I. Thompson of University Farm will visit the herds of the consignors this week and select the hogs to be consigned. Catalogs will be ready for mailing about Aug. 27.

SHEEP, CATTLE, GENERAL.

Idaho sheepmen have been looking for winter sheep pasture in Imperial Valley.

Solano County Fair had been having fine attendance up to our latest reports before going to press.

From all present indications there will be a better sheep show at Sacramento this fall than for some time past, both in the wool and mutton breeds.

BILLIKEN HERD OF IMPROVED

Chester Whites

(The Farmer's Utility Breed)



STAR VENO,
1st Prize Aged Sow and Grand Champion at 1914 State Fair.

The easy feeding type that make rapid and economical gains. Size and quality combined, of quiet disposition and producing large uniform litters. This is the breed that pays big interest on the investment. The individuals of this herd represent the best and most popular blood lines of the breed. Every animal is immune to hog cholera, the virus-serum treatment being used. Prices are reasonable and quality is first-class. See them at the State Fair.

C. B. CUNNINGHAM
MILLS, CALIFORNIA

BERKSHIRES

We have a number of very fine sows bred to Mayhews Leader 6th, a son of A. B. Humphrey's great Grand Champion boar.

Experts agree that we have one of the best herds on the Pacific Coast

Butte City Ranch

BUTTE CITY, GLENN COUNTY, CAL.

Member Glenn County Berkshire Breeders Association.

FOR SALE

Two Imported Registered Shire Mares

Nine years old; well broke to work, absolutely sound, regular breeders. Have foals this year. Now in foal by COLUMBIA MODEL, winner P. P. I. E. Span weighs over 4000 lbs. Price reasonable. Selling account overstocked. For prices and further particulars, address

BRIDGFORD COMPANY,

Knightsen,

Contra Costa County, California.

Norabel Farm Ayrshire Cattle

A limited number of choice, pure-bred young stock of both sexes for sale.

Dams and Sires Registered.

Prices Right—Correspondence Invited.

Address:

Le BARON ESTATE CO.

Valley Ford, Cal.

We will not exhibit at the State Fair. It costs money. You save it if you buy from us.

Rose Crest Berkshires

Ames Rival 118th, 217845, sired by Rivals Champion Best, is our new herd boar at Rose Crest. Sows bred to him are included in our consignment to

BERKSHIRE CONGRESS SALE.

Open and Bred Gilts and Boars of serviceable age for sale.

F. L. HALL,

Perris, Cal.

FAMOUS BLACKHAWK SHIRES



ANWICK ARTHUR.

68 Prizes were won by our horses at the
Panama - Pacific International Exposition,
including the Premier Championship for Breeders.

We will have 25 head at the State Fair, Sept. 2-9. Be sure
to see them.

Have a fine collection of **STALLIONS** and **MARES** on hand,
and can suit you.

SEND FOR FREE PHOTOGRAPHIC CATALOG.



BLACKHAWK BARN KING.

BLACKHAWK STOCK RANCH

BURLINGAME, CAL.

EXHIBITORS' NOTES.

Hayden Smith of Woodland will show four Durocs.

T. B. Purvine of Petaluma will show two full Jersey herds.

The River Bend Farm of St. Helena will show 10 Durocs.

J. E. Thorp of Stockton will show his Duroc sire Omar of Mossdale.

A. M. Henry of Farmington has a Poland China herd in the futurity.

C. B. Cunningham of Mills will have 26 O. I. C. hogs at the State Fair.

Bullard Bros. of Woodland will show 21 Rambouillets and 36 range sheep.

F. Stenzel of San Lorenzo has entered two cows in the five-day milking contest.

The N. H. Locke Co. will have 14 O. I. C. swine and 23 Jersey cattle at the State Fair.

It is reported that Golden Lassie, Duroc sow which raised 14 pigs farrowed in March, will be on exhibit.

Watch for the groups of livestock showing two or more generations. There you have the proof of the pudding.

M. Bassett of Hanford will show the Percheron stallion Ithos, and three of his get. Ithos was a P. P. I. E. winner.

The Whitehall Estates will show 27 Percherons, including Londrocitos, second prize winner aged stallion, P. P. I. E.

M. Bassett of Hanford, who showed the grand champion Poland China sow at P. P. I. E., will have 24 head at the State Fair.

F. A. Brush of Santa Rosa will show the P. P. I. E. grand champion Berkshire sow Riverby Princess, and two of her litter mates.

The J. W. Mills Orchard Co. will show their \$400 Berkshire sow Foxgrove Laurel 8th, the best of those bought at the Carruthers sale.

J. W. Henderson of Berkeley, who won grand champion Hampshire boar and sow at P. P. I. E., will have 18 head at Sacramento.

Riverina Farms have entered twenty-six large Yorkshires for the State Fair. This is the herd that was shown at the Panama-Pacific.

Bishop Bros. of San Ramon, who won a large number of the P. P. I. E. Shropshire prizes, will show 36 Shropshires and 21 range sheep.

Walter Dupee of Santee will show his P. P. I. E. grand champion herd bull Imp Itchen May King, and also Itchen Wood Sorrel, grand champion cow.

Kaupke Bros. of Woodland, who not long ago purchased the Royal Show winning Hampshire ram, will show 15 of that breed at Sacramento.

W. A. Young of Lodi, whose Poland China boar I B A Wonder won reserve championship at P. P. I. E., will show 29 head at Sacramento.

A. B. Humphrey of Escalon will show the get of Grand Leader 2nd, P. P. I. E. grand champion Berkshire, and some from Fashion Longellow 5th.

A. W. Foster of Hopland Stock Farm is showing a larger herd of

Shorthorns at the State Fair than he did at P. P. I. E. where his bull won grand championship.

Ruby & Bowers of Davis will show Percherons, Belgians, and Clydesdales, including first prize yearling Belgian Stevenot of P. P. I. E., his mother, and her yearling son.

A. B. Humphrey of Escalon, who won grand championship on his Berkshire Grand Leader 2nd at P. P. I. E., will show about 30 head at the State Fair, and a dozen Guernsey cattle.

Black Hawk Stock Farms horse barn is more attractively decorated than at P. P. I. E., rye straw mats copied after the Royal stables of London being used with lots of colored bunting.

A. W. Morris & Sons will show the four-year bull Segis Pontiac De Kol Burke; King Korndyke Pontiac; Aralia De Kol Pontiac Segis; and Aralia De Kol Alcartra, among the 40 head entered.

H. C. Lookabaugh, a Shorthorn breeder of Oklahoma, who showed at P. P. I. E., has written the State Fair management trying to get railway rates so he can show at our western fairs. Present tariffs for California apply only to contiguous States.

Elmer Lamb of Ceres will have 18 Durocs at the State Fair. Mr. Lamb has some "American Beauties." At P. P. I. E. he showed the junior and reserve grand champion sow, champion sow bred by exhibitor, and several other prizes.

Very little of Southern California's purebred livestock will be shown at the coming State Fair, due largely to the distance the stock would have to be shipped. An exception will be Geo. W. Wilder of Redlands, who will show several fine Berkshire hogs.

The A. L. Tubbs Co. of Calistoga writes: "We are taking ten large Yorkshires to the State Fair, two herd boars, two junior yearling sows, and six spring pigs. We realize that an advertisement in your paper is the best means of drawing attention to them."

The Oak Grove Dairy Farm of Woodland, whose Berkshire herd sire, Artful Masterpiece, was grand champion at Oklahoma State Fair 1908, and grand champion at California State Fairs of 1912 and 1913, will have eight head at the 1916 State Fair. Artful Masterpiece died last week. Their herd sire, Improver B, and some of his pigs will be at the State Fair.

The Black Hawk Stock Farms of Burlingame will show 25 Shires, every one of which won a ribbon at P. P. I. E. They will include the 1st prize stallion foal Salvador Conqueror, one of five which the Black Hawk people have bought from Henry Wheatley of Napa. They will also include Anwick Arthur, which won 1st with three of his colts; Horton Bounce, reserve grand champion mare P. P. I. E., and Black Hawk Beauty, reserve junior champion.

The El Mirador (Tulare county) Packing House Co. has recently incorporated to put up a plant.

Auction Sale!

AT

Modesto, Cal., September 28, 1916



LILY OF S. B., 1st Prize-Winner at Oregon State Fair,
One of the Many Good Ones in This Sale.

75 REGISTERED JERSEYS 75

This will be a complete disposal sale of one of the finest herds of Registered Jersey Cattle in California, consisting of 48 mature cows, 22 Heifers 6 to 12 months old; one Herd Bull and 4 Young Bulls. These cows, heifers and bulls are typey individuals and prize-winners, and are of the best blood, being close descendants of Golden Fern Lad, Famous Tormentor, and Interested Prince, Bulls of World Renown.

For further information and catalog write

COL. BEN H. RHOADES,
Auctioneer,

OR

MURRAY & JONES,
Owners,

1501 S. Main St., Los Angeles.

Modesto, Cal.

Hauck's Poland-Chinas

CANTRALL'S IDEAL, son of BIG JOE, was selected for me in Iowa by Geo. M. Cantrell. He now weighs, at 18 months, over 600 lbs. in breeding condition, stands 36 inches high, 70 inches long, head girth 72 1/2 inches, flank girth 73 inches. Size of bone 10 inches. Has broad deep hams and an ideal head. Have a few late Spring pigs by him, and they all look like their dad. Have a few March boar pigs by LONG MODEL that are good big fellows—they are out of extra good big-type sows.

WILL SHOW A FEW PIGS AT THE STATE FAIR.

NATE HAUCK,

Alton, Humboldt Co., Cal.

Breeder of Big-Type Poland-Chinas.

BIG TYPE POLAND CHINAS

Glits from Weanlings to one year old. Bred or open. Boars from weanlings to 8 months.

THE BROWNING STOCK FARM

W. H. BROWNING, PROP.

WOODLAND, CAL.

SIX DECADES OF CALIFORNIA FAIRS.

(Continued from page 204.)

declaring the society a state institution and empowering the governor to appoint twelve citizens of the state to comprise such a board. This was done, but it produced no great change in the race track gambling at the fairs because the governor appointed practically the same people who had previously been elected and the old game went on. At the fair of 1881, Hon. John Bidwell in his annual address spoke very plainly on this subject:

I submit to the good sense and moral convictions of the people of this state that horse racing is not an innocent recreation unless gambling is innocent. At these races they sell pools and bet money. This is the programme: the daily, unblushing practice. This society and cognate district societies are wholly under state control; therefore the state, in this matter, maintains gambling institutions under the guise of fairs. If it is right to have a speed programme, then give it a purse, or purses, from the public money. No one, I believe, has ever yet been bold enough to ask that of this state, yet inadvertently the public money has been used for that very purpose.

But in spite of such protest the gambling continued for a quarter of a century, until the state legislature, being no longer able to overlook its demoralizing effect upon the community, proscribed race track gambling within the state. And the experience since that proscription has shown very clearly that instead of gambling being a pillar of the fair, that institution has builded higher and more broadly on the solid ground of honest effort and of decency than ever it could upon any other kind of support.

District Fairs.—The assumption by the state of the functions of the old agricultural society naturally implied to the legislature that the state should liberally pay for their discharge. The legislature of 1880 which organized the State Board also organized agricultural districts which should hold fairs and have governing boards appointed by the governor of the state and thus become authorized to spend public money. Thus each legislator when doing something for the state could have something to take home to his own district. It worked finely. In 1880 the legislature created eleven districts and laid down a plan for creating more. The number rose to 29 in 1888; to 45 in 1895, and in 1896 something dropped, for Governor Budd said in 1896:

The legislature failed to carry out

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PRODUCER to CONSUMER.

Both are benefited by
MARKETING AGENT
of Stanislaus County Farmers' Union.
What do you need? Write me,

O. L. LINN,

ROUTE A, MODESTO, CAL.

BEEKEEPERS' SUPPLIES

Everything for the Honey-Bee
Catalogue sent free on request.

THE A. I. ROOT CO.,

245 Mission Street,
San Francisco, Calif.

my suggestion as to agricultural societies and made appropriations therefor aggregating \$193,000, which I disapproved—thus saving that amount.

But the fairs of the fourth decade were notable and the collection of reports of all the district fairs made the transactions of this decade bulky and full of interesting local information. In 1884 the first fair was held in the new pavilion in the rear of the State Capitol—the building of which cost the state and the city of Sacramento \$40,000 each.

The fifth decade beginning with the loss of state aid in 1895 was characterized by serious effort and sacrifice on the part of a few people who maintained fairs and indulged lightly in publications because there was no money to pay for them. The incidents of the time are within easy memory and need not be rehearsed.

The sixth decade, which closed in 1914, is also easy of recollection, but it must be noted that it seemed to contain the beginning of a progressive era which promises the greatest achievement yet secured on the foundations laid by the pioneers. In accordance with legislation of 1895 the directors sold all real estate it owned, purchased a new site of 100 acres on the southeastern edge of Sacramento city and deeded it to the state. In 1907 the legislature appropriated \$50,000 for wrecking the pavilion of 1884 and beginning buildings on the new site. Since then many new buildings and other improvements have been secured and fairs of notable excellence have been held. Many new policies and methods in exhibition have been introduced and the fairs have been given an educational and actual operation, character in accordance with the progressive "show methods" of the day.

The State of California is generously building up its good institutions with a generosity and outlook which the pioneers could not command and the outfit and work of the State Board of Agriculture should always rank in that class. Though the pioneers could not do what they desired, no one ever doubted the quality of their foresight. It may be then that we are now just on the point of realizing what John Bidwell foresaw thirty-five years ago when he said:

This society needs to be placed upon a permanent foundation. Being a state institution it ought, to the extent of its needs and in proportion to its importance to have the fostering care of the state. But in order to permanence it needs more than money: its foundations must rest deep in the hearts and affections of the people. One hundred thousand dollars for a suitable hall and other requisites would be a cheap and profitable investment: not a hall like this, covering part of a block, but a grand temple of industry which with its ample stock grounds, its track for useful parades and exercises, its park and botanic gardens would become the most useful and attractive institution in all the state.

And we believe that if Bidwell, that grand old pioneer who loved California for her own sake, because he came nearly a decade before gold was found, could speak today he would say:

"Young man: I said a hundred thousand. That was a large sum for that day, but I meant a million!"

333

THREE BLOCKS FROM THE FERRY.

W. DAVIS & SONS, makers of
HERCULES Harness, Horse Col-
lars and Saddles, are now located at
333 Market Street, three blocks from
the Ferry. :: :: :: ::

When a dealer offers you a
HERCULES Harness, Horse Col-
lar or Saddle, he is offering you
THE BEST THERE IS!

We now supply trunks, travel-
ing bags, automobile and car-
riage lap robes, and all leather
goods. This is a cordial invitation
to come to see us.

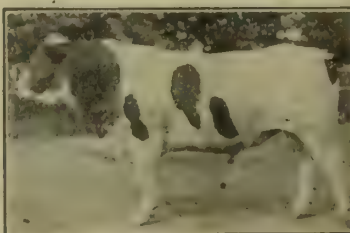
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333 Market Street, San Francisco.

Remember the three 3's

(Open Shop)

GRANDSONS OF TILLY ALCARTRA



Prince Alcartra Korndyke,
Best bred son of Tilly Alcartra.

Our supply of these young sires is always limited, but we have a few now which we are offering at very reasonable prices.

Write us at once, or call and see the herd.

J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

At prices within reach of
every Breeder and Dairyman.

When you buy a son of our
herd sire, **Prince Alcartra**
Korndyke, you get more than
a Holstein bull with registra-
tion papers—you get a grand-
son of the world's greatest milk
cow out of a high-testing A.
R. O. dam. Our herd of fe-
males has been developed into
one of the best in the State.

Oak Grove Berkshires

HEADED BY

ARTFUL MASTERPIECE 110970, grand champion at the California State Fair in 1912 and 1913; a son of Masterpiece 77000.

IMPROVER B 181000, grand champion State Show, Topeka, Kansas, Kansas State Fair, Hutchinson, Kansas, in 1913, and California State Fair in 1914.

BRINTON'S LONGFELLOW, 166579, junior champion California State Fair, 1912, a great grandson of Rival's Lord Premier 113100.

The blood of Masterpiece, Silver Tips, Premier Longfellow, Baron Compton, Rob Hood, Rutger Jewel, Charmer's Duke 29th, Dukes Bacon 5th, etc., will be found among our brood sows.

We have a few service boars left, fall 1915, and
spring 1916 boar and sow pigs.

Write us your wants; look us up at the State Fair.

Oak Grove Dairy Farm

Woodland,

California.

LARGE YORKSHIRE SWINE

The Ideal Hog for the Progressive Farmer.

Especially adapted to California Conditions.

See them at the State Fair, Sacramento,
SEPTEMBER 2-9.

Montelena Herd

A. L. TUBBS CO.,

Calistoga, Cal.

BULL EXERCISERS.*[Written for Pacific Rural Press.]*

On large dairies where several bulls must be kept for herd sires, and on breeding establishments where a large number of young sale bulls must be kept on hand, the problem of furnishing exercise for such animals is quite often a difficult one.

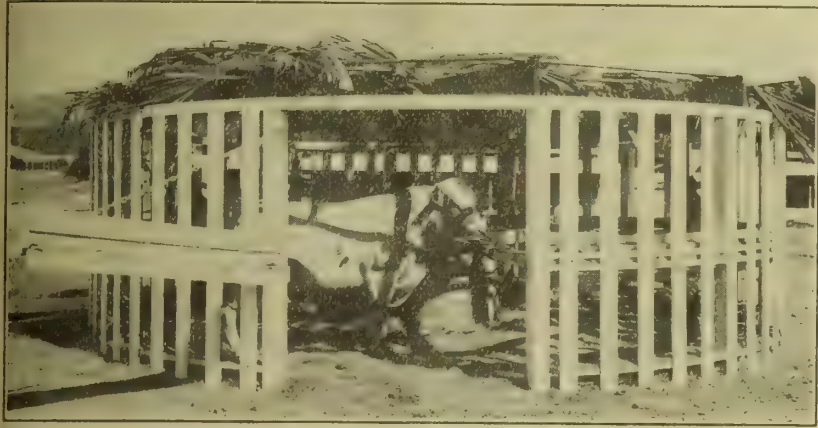
This has been entirely overcome at the Napa State Hospital by the erection of a merry-go-round device called by Manager Owen Duffey and herdsman V. L. Heath, a "bull exerciser."

This device can best be compared to a four-spoked wheel running on an axle set perpendicular in the

cream grading is amply demonstrated by the experience of the Danish Creamery at Fresno and the Visalia Co-operative Creamery at Visalia.

Manager Murphy of the former is authority for the statement that they have 1000 customers, the larger percentage of whom have small dairies in connection with other farming interests, and who would not therefore be ordinarily expected to produce such a good cream as larger dairies with better equipment.

The patrons are paid a premium over the San Francisco butter quotation but receive one cent less for cream testing under 30 per cent, and sour cream is not accepted at all.



The Two Napa Hospital Bulls Exercise Each Other in the Shade.

ground, the spokes in this case being made of heavy timbers.

Around the ends of these spokes and in circular form, has been erected a strong slatted fence about eight feet high, with a swinging gate at two places. A piece of lumber has been fastened on to the inside of this fencelike structure, about four feet from the ground, on which the ends of the spokes rest, these ends being equipped with small rollers to make pushing around easier.

The bulls are tied to the outside ends of these spokes with strong ropes and the pushing around by an ambitious bull turns the entire wheel and in this way forces the lazier bull to follow.

By the addition of a roof over the structure, which will be built this year, the bulls on this place can be exercised in the worst kind of weather with no loss of caretakers' time, also with entire safety.

WHAT CREAM GRADING IS DOING.*[Written for Pacific Rural Press.]*

While there has been a constant complaint on the part of creamery men in California, regarding the quality of cream being produced by the farmer, it has been this journal's contention at all times that the creamery manager in most instances is the man directly responsible for the condition because of his indisposition to pay more for good cream than for bad.

In the past year there has been more done to improve this condition than ever before; and while the farms who are taking a firm stand on the matter of cream grading are still too few in numbers, their influence is being felt by their more boldly-kneed competitors, also by the dairymen who have been producing good cream but getting no extra pay for their trouble. That the dairymen respond to

But Mr. Murphy does not believe in spoiling good cream after it comes into his possession either; and all of his cream wagons cover their routes and are at the creamery before noon, all wagons arriving after eight o'clock using canvas covers to protect the cans from the hot sun. To still further improve his butter Mr. Murphy pasteurizes all of his cream and as a result of this practice Danish Creamery butter enjoys a good reputation in all markets. Moreover it sells for the highest price.

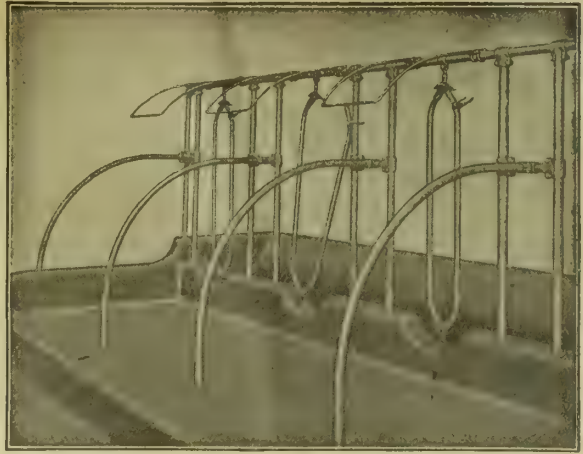
At Visalia, Manager N. J. Peck is equally certain that grading is the only sure way of improving the quality of butter. This year he has shipped six cars of butter to Eastern markets and all of it has been profitably sold.

Grading here is even more stringent than at Fresno, two cents a pound less being paid for less than 30 per cent cream and no cream with high acidity being accepted.

In both communities mentioned the dairymen do not find it difficult to comply with the grading system if they install cream coolers, which most of them have purchased very cheaply.

Outside of the beneficial results in stabilizing the butter markets of the State, cream grading is bound to meet with the approval of every good dairyman; for it is the only method by which he can expect to be paid for producing a good clean cream, as most everybody who takes pride in his work prefers to produce.

Supposing that the U. S. Census Bureau estimate of the number of farms and horses in the country is correct, at the rate of increase in the production of farm tractors in 1915 over that of 1914, it would require more than twenty-five years to replace 30 per cent of the farm horses. This looks like good business for everybody, says the Mo. Fruit Grower.

**Sanitary Barn and Dairy Equipment**

SEE COMPLETE EXHIBIT AT

STATE FAIR

West Side of Machinery Hall

Catalogs and Barn Plan Books Free.

CALIFORNIA HYDRAULIC ENGINEERING & SUPPLY CO.,
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BREEDERS, IMPORTERS AND EXPORTERS.

**PERCHERONS, BELGIANS, SHIRES,
CLYDESDALES, COACH and HACKNEYS**We have the largest stock of horses and can sell more Genuine
Horse for the money.

If you need a good stallion in your locality, let us know.

See our Exhibit at the State Fair.

**Rancho Rubius Durocs
Are WINNERS**

At the California State Fair, 1914, we took 1st sow under 12 mos.; 1st sow under 6 mos.; 2nd boar under 6 mos.; Grand Champion sow, and Champion sow bred by an exhibitor—all with only three hogs entered.

At Fresno District Fair 1915, we had first aged sow, 1st and 2nd junior yearling sows, 1st and 2nd junior pig sow, 1st on breeding pen, 2nd on senior boar pig, 2nd junior boar pig, and best sow, any age or breed.

At the World's Fair, S. F., with only four hogs entered, we took 1st junior pig sow, 2nd senior yearling sow, junior champion sow, Reserve Grand Champion sow, Champion sow bred by an exhibitor, and money on two others.

Look us up at the State Fair next week. Stock for sale at reasonable prices. Come and see us or write:

ELMER LAMB**Ceres, Cal.****Rambouillets**

1300 YEARLING RAMS AND 1000 EWES.

These sheep are purebred, large and smooth, with heavy fleece of fine, long, staple, white wool. Individuals or carload lots.

Prices reasonable.

Correspondence solicited.

CHAS. A. KIMBLE, HANFORD, CAL. Breeder and Importer.

LIVESTOCK DIRECTORY.

SWINE.

BIG TYPE POLAND CHINA HOGS—Bred sows, bred gilts, open gilts, weanlings, both sexes, boars ready for service. Herd sires, Iowa Wonder and Joker. Iowa Wonder is a son of "A Wonder," the greatest Poland-China boar living or dead. Joker was the First Prize boar in the Under Six Months Class at the Wisconsin State Fair in 1915. All animals are registered free of charge. Prices low on account of being overstocked. All animals first class. Quick, easy feeders, the kind the farmer wants. As a special premium each purchaser will be given a year's subscription to the "American Swineherd," the special advocate of the Poland-China, and a copy of "The Handbook on the Sow" and "The Pig Feeder's Manual." Write Geo. A. Smith, Corcoran, Cal.

BILIKEN HERD OF IMPROVED CHESTER WHITES—The Farmer's Utility breed. Quiet disposition, big, uniform litters, easy feeders, rapid growers, size combined with quality. 15 bred gilts and 60 spring pigs, of both sexes, to offer. Prices are reasonable and quality is high class. The best and most popular blood lines of the breed are represented in this herd. Every one immunized by the virus-serum treatment. Write for circular and prices, C. B. Cunningham, Mills, Sacramento County, Cal.

REGISTERED DUROC-JERSEYS—60 head priced to sell before October 1st. Bred sows and gilts, open gilts, boars, and spring pigs, representing the most noted families of the breed. Only choicest individuals, shipped for breeding purposes, at prices within reach of every one; absolutely guaranteed and in first-class condition. For particulars write to Haden Smith, Route 1, Box 84D, Woodland.

YOUNG POLAND CHINAS, LARGE TYPE—Boar IBA Wonder won first and Reserve Championship P. I. E., weighing 730 pounds under 2 years and in breeding condition. 60-day special—fine young sows bred to IBA Wonder at very low prices; also weanling pigs, either sex. Satisfaction, or money refunded. W. A. Young, Lodi, Cal.

BERKSHIRE BOAR—Son of Star Value, Values Bachelor 137,554, Dam Lady Bachelor 5th. Six years old, weighs 700 lbs. in light breeding condition. Active. Excellent sire, \$65. Registered pigs sired by above and Wilts Masterpiece 210,102, \$15. Trios, \$40. W. H. Waugh, Riverside, Cal.

REGISTERED BERKSHIRES—World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapewild Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

BERKSHIRES—Herd headed by Artful Masterpiece and Improver B, Grand Champion at California State Fair, 1912 and 1913 respectively. Open sows, service boars and weanlings for sale. Oak Grove Dairy Farm, Box 1, Woodland.

DUROCS from River Bend Farm, St. Helena, Cal., are large type, smooth, rangy, with fine backs and deep cherry color. We sell only those we'd like to keep in our herd. Don't write us if you want cheap stock.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

HAMPSHIRE SWINE—Fancy belted boars and sows. Good ones, \$25 and \$30. Better ones up to \$45. All registered. Ben F. Thorpe, Manager, Canfield Estate Ranches, Bonsall, Cal.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

LARGE TYPE POLAND CHINAS—Now booking orders for Spring pigs from our Nebraska prize-winning sows. H. I. Marsh, Route A, 348, Modesto.

REGISTERED PUREBRED BERKSHIRE PIGS—Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

IMPERIAL STOCK FARM BERKSHIRES—Registered stock of all ages. Prices and description on application. E. J. Merrill & Son, Morgan Hill.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

LAKEVIEW STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

REGISTERED BERKSHIRES—For sale, bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Norato, Cal.

POLAND CHINAS—Young stock; either sex. Write for pedigree. Reasonable prices. Edw. A. Hall, Watsonville, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hancock, Alton, Humboldt Co., Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Linn, Linview, Route A, Modesto, Cal.

STOCK HOGS FOR SALE—Good bunch, 85 head—50 to 175 lbs. Berkshire foundation. M. D. Keyser, Brentwood.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND CHINA HOGS FOR SALE—Registration papers furnished free. C. A. Conley, Durham, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boudier & Son, Napa.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. McKeel, Manteca.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

REGISTERED BERKSHIRES—Weanling pigs, \$10 each. G. A. Casey, R. 7, San Jose.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High class pure-bred hogs, both sexes, any age.

POLAND CHINA HOGS—Registered. Cholera immune. E. J. Miller, Llewellyn Ranch, Lathrop.

REGISTERED IMPROVED CHESTER WHITES—Grizzly Bear Ranch, East Auburn, Cal.

BERKSHIRES—Carruthers Farms, Mayfield, Cal. Second annual sale, August 2, 1917.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED POLAND CHINAS—Young stock for sale. J. H. Cook, Paradise, Cal.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

REAGANS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED POLAND-CHINAS and Duroc Jerseys. H. F. Harrold, Orland.

REGISTERED DUROC JERSEY SWINE—Frederick M. Johnson, Napa, Cal.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROCS—All ages. Either sex. W. A. Pack, Hollister, Cal.

REGISTERED DUROCS from best Eastern blood lines. S. S. Southworth, Napa.

POLAND-CHINAS—Prize-winners. Money makers. W. Bernstein, Hanford, Cal.

CHAS. GOODMAN—Breeder of high-class Berkshire Swine. Williams, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

REGISTERED O. I. C. SWINE—C. D. Conway, Ripon, Cal.

REGISTERED DUROCS—H. N. Leininger, R. D. 4, Chico, Cal.

REGISTERED POLAND-CHINA HOGS—J. W. Wakefield, Acampo.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

REGISTERED BERKSHIRE PIGS—Write or call Greenwood Ranch, Brentwood, Cal.

SHEEP AND GOATS.

F. A. MECHAN ESTATE, Petaluma, Cal.—Breeder and Importers of Shropshire, Rambouillet and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

THE BULLARD FLOCK RAMBOUILLETS—Founded 1870. Largest Merinos on Pacific Coast. The Bullard Company, Woodland, Cal.

FOR SALE—Shropshire bucks, yearlings and lambs. Individuals to carlots. Purebred but not registered. J. E. Bloom, Dixon.

KATPKE BROS., WOODLAND, CAL.—Breeder and Importers of Hampshire sheep.

BREEDER OF MERINO SHEEP—Rams for sale. J. Bidegaray, Fresno, Cal.

BISHOP BROS., SAN RAMON, CAL.—Breeder and Importers Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets, Hanford, Cal.

BEEF CATTLE.

FAIR OAKS RANCH, Whittier, Cal.—Young registered Shorthorn bulls for sale. Sired by Landowner 379318, grandson of Imported Villager 293884.

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Falcines Ranch Co., 320 Sharon Bldg San Francisco.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esposito, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

GEORGE WATKINSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

DAIRY CATTLE.

REGISTERED HOLSTEIN BULL CALVES—Sired by Lorena Korndyke Alcantara, whose dam made 29.75 pounds butter fat in seven days as a four-year-old. J. M. Campbell, Escalon, Cal.

THE MCCLLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

GUERNSEY BULL CALVES from Grand Champion Bull. Also Hampshire Swine, both sexes from Grand Champion 700-lb. boar and Grand and Junior Champion Sow. Bella Vista Herd J. W. Henderson 1st National Bank Bldg., Berkeley, Cal.

FOR SALE OR WILL RENT on very easy terms—41 head of dairy cows, 22 being 2 and 3-year-old Holsteins, balance older cows, mostly Durham. Also very fine registered Holstein Bull. James G. Mee, St. Helena, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segus and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

REGISTERED HOLSTEINS—Have a few Bulls from El Prado Wayne Colantha, whose dams and sire's dams average per cent fat at 4 years is 5.01. See my stock at the State Fair. J. W. Benoit, Route C, Modesto, Cal.

REGISTERED HOLSTEINS—Sired by King Korndyke Hengerveld Ormsby 53822. Dam Pieterje Maid Ormsby 78051, world's record when made 35.56. Send for pedigrees. Geo. Kounias, Modesto, Cal.

REGISTERED HOLSTEINS—Colantha Johanna Lad and Aralia De Kol breeding. Young stock for sale from A. B. O. cows. Lester A. Driver, Nicolaus, Cal.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

REGISTERED HOLSTEIN BULL CALVES—Grandsons of Dutchland Governor Sir Colantha. Write or see them. H. J. Reamer, Haywards, Cal.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3 lbs. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

HOLSTEIN BULLS—Well marked, large straight individuals. Tuberculin tested, \$1.00 up. Packwood Farm Herd. W. F. Mitchell, Visalia.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynne Ranch, Box 321, Petaluma, Cal.

REGISTERED HOLSTEINS—32 high-grade Holstein heifers coming fresh this Fall for sale. E. E. Freeman, Route B, Modesto, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.



Some of the Typey Jerseys to be Auctioned at the Murray & Jones Dispersal Sale, Modesto, Sept. 23.

VENADERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly record. Guy H. Miller, Route 1, Modesto, Cal.

JERSEY BULLS—Serviceable are Sons of Gertie's Lad, who has two daughters that made over 600 lbs. butter as two-year-olds. A. A. Jenkins, Tulare.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

A SPLENDID 8-months-old Holstein bull with good A. R. O. breeding for \$135. K. W. Abbott, Milpitas, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

WILLOWMOOR AYRSHIRES—Great records; economy. 300 head in herd. J. W. Cline, Redmond, Wash.

INNISFALL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

YOUNG REGISTERED GUERNSEY BULL for sale cheap. Guaranteed sound. Kenneth Evans, Gilroy, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS Corp., Importers and Breeders, Woodland, Cal.

THOROUGHbred DUROC-JERSEYS to farrow in August. Dr. T. A. Guthrie, Woodland, Cal.

CREAM CUP HERD—Registered Holsteins. Pointe bull calves M. Holdridge, Modesto, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

YOUNG REGISTERED JERSEY BULL CALVES at reasonable prices. O. J. Ames, Oakdale.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chino, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3 Box 58, Visalia, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Whittier, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Haxworth, Modesto, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

AYRSHIRES—Registered; all ages. N. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

REGISTERED HOLSTEIN BULLS from A. B. O. dams. B. F. Anderson, Modesto, Cal.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes, McCoy, Oregon.

FRESH JERSEY MILK COWS for sale. E. M. Locke, Lockeford, Cal.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

A. B. O. HERD OF HOLSTEINS—Alexander Whaley, Tulare, Calif.

HORSES AND MULES.

REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders, Easton & Ward, Proprietors, Burlingame, Cal.

DOGS.

AN OPPORTUNITY to purchase thoroughbred Collies. Having a greater number of thoroughbred Scotch Collies than I can accommodate, am willing to sell a few one year and older at a great sacrifice. The dogs are all bred by the noted prize-winners of the BROWDALE KENNELS, Redwood City.

Poultry Breeders' Directory.

RAISING FALL CHICKS PAYS—If you know how. Write for particulars and our circular and prices, for it will interest you. Barred Rocks, Rhode Island Reds, Black Minorcas, White, Brown Leghorns—any quantity. Our breeding stock is in fine condition, and our hatching and shipping facilities are the best. We quote express-paid prices on request. Roofden Poultry Ranch and Hatchery, Campbell, Cal.

BARRED PLYMOUTH ROCKS—"The kind that Win and Lay." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for catalog showing winnings at California's leading shows. Chas. H. Voddon, Box 396, Los Gatos, Cal.

MAKE AN EARLY START with your Fall chicks and get them right now. We have Baby chicks as well as chicks one and two weeks old with price same as baby chicks. No weak ones. All strong chicks—all varieties. Santa Clara Valley Hatchery, San Jose, Cal.

Electric Incubators, 576 egg capacity each. 16 Electric Brooders, 150 chick capacity each. Complete with circuit breakers, thermostats connecting sockets, etc. Address: T. B. Jacobs, P. O. Box 395, San Mateo, Cal.

CROLEY'S DRY MIXED INFANT CHICK FEEDS for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by GEO. H. CROLEY CO., Inc., Poultry Supplies, San Francisco.

MACFARLANE STRAIN WHITE LEGHORN Cockerels—April hatched, Hoganized, \$1.00 each, \$9.00 per dozen. Chicks to order, 10c each. Newton Poultry Farm, Dept. 1, Los Gatos, Cal.

BABY CHICKS—Strong and healthy, from high-bred free-range White Leghorn stock. Prices on application. Western Hatchery, W. S. Waldorf, Petaluma.

SINGLE-COMB RHODE ISLAND RED EGGS for hatching from fine strain mature stock. Even, dark-red color. Good layers. Prices reasonable. Otto Schulz, Hollister, Cal.

DAY-OLD CHICKS—These chicks are hatched from our own stock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

EASTMAN'S BRED TO LAY Barred Plymouth Rocks, Chicks, Eggs, Cockerels. Fairmead Poultry Farm, Fairmead, Cal.

EASTMAN'S BRED TO LAY Barred Plymouth Rocks, Choice cockerels. Fairmead Poultry Farm, Fairmead, Cal.

CHICKENS, DUCKS, GESE, GUINEAS—Pea Fowl, Pigeons, Wm. A. French, 544 W. Park St., Stockton, Cal.

WHITE WYANDOTTES—Blue-ribbon winners. Eggs \$2 to \$5. Chicks, pullets, cockerels. R. W. Strawinski, Route 2, San Jose, Cal.

TURKEYS, DUCKS AND GESE—Large reduction in price of stock. Order now for fall delivery. Free Circulars. Albert M. Hart, Clementia, Cal.

PEKIN DUCK EGGS for hatching, \$1.00 per dozen. L. D. Collins, R. F. D., 540 Denair, Cal.

Raising Poultry for Profit

POULTRY AT THE STATE FAIR.

[Written for Pacific Rural Press]

The poultry industry had a large cement-floored, well-lighted hall, for the State Fair of 1914, but the long list of entries behooved the management to get busy pronto to provide shelter for the exceedingly larger number. Therefore, an addition to the older building is just being completed, to double the capacity. It is built around a square court, one side of which consists of the old building. It has cement floors, and along the full length of one side is a concrete tank, three feet deep to accommodate waterfowl. Good lighting and ventilation are provided. A new space has been laid out for game birds.

The California Poultry Association will meet during the fair. A larger number of the exhibitors won prizes at the Panama-Pacific, and the poultryman who wants to see a great aggregation of really good fowls will see them here.

Besides all the common breeds, there will be some white cochin and black cochin by J. W. Blackman of Los Angeles. These big birds of the lustrous feathers are of a nearly extinct breed and will be worth looking for. Y. Miki of Sacramento will show some rare Japanese fowls of long tails and weird heads. Harry Robbins of Los Angeles, has entered Partridge cochin; and Percy Ward & Sons of Oakland entered Japanese Silkies, and the rare Maline fowls. Notice the uncommon fowls in the following list of entries, which is practically complete:

Poultry appliances will be shown by Rogers Mfg. Co., San Francisco, F. Smith Co., Sacramento and Perry Flour Co., Stockton.

Rhode Island Reds.—Baywood Poultry Farms, San Mateo; B. L. Lissel, Modesto; Fowler and Masteron, Duarte; B. C. Quessenberry, Lodi; Mrs. J. F. Rose, Ceres; Mrs. Will Taylor, Sacramento; Harold Wattew, Los Angeles, (Rose comb); and F. S. Thornton, Escalon.

Barred Plymouth Rocks.—W. D. Thomas, Sacramento; Hale Prather, Ukiah; A. D. Robinson, Point Loma; J. M. Smith, Napa; Golden Rule Poultry Farm, St. Helena; C. L. McGee, So. Berkeley; Cameron Bros., Sacramento; F. A. Drew, Oakland; Sunny Hill Poultry Yard, Ripon.

White Plymouth Rocks.—Mrs. D. Doyle, Pasadena; Mahajo Farm, Sacramento.

Leghorns.—Henry Robbins, Los Angeles, (Partridge); Rose Lawn Farm, Van Nuys, (White); Emerson and Mumford, Burbank, (White); J. L. Bartholomew, Chino, (Buff); Emanuel Roberts, Concord, (Buff); Mahajo Farm, Sacramento (White.) Minorcas.—B. F. Hurst, Los Angeles (Buff); H. D. G. McCartney, Los Angeles, (Black); W. P. Williams, Los Angeles (Buff.)

Anconas.—Cora J. Bamford, Garbana; Harry Raines, Fair Oaks; A. Taggart, Oakland.

Orpingtons.—Percy Ward & Sons, Oakland, (Buff); Mrs. R. S. Paulding, Woodland, (Black); F. Lacy, Threlkeld, Porterville, (White); H. M. Hansen, Sacramento, (Buff); Mrs. Jennie Helbing, Los Angeles (Black); W. M. McGee, Oak Park (Buff); Mrs. Jennie Perry, Los Angeles (White); J. J. Graves, Redwood, (Buff.)

Wyandottes.—G. H. Buhrman, Watsonville, (White); W. A. French, Stockton, (Silver); J. J. Garvey, Corbin, (White); C. L. McGee, So.

Berkeley, (Silver Laced).

Langshans.—George Lohr, San Francisco, (Black, White); C. L. McGee, So. Berkeley, (Black); J. R. Crabtree, Oakland, (Black.)

Bantams.—R. G. Baxter & Son Whittier; W. A. French, Stockton; Fowler Masterson, Duarte; J. W. Blackman, Los Angeles; A. J. Dixon, Fresno; D. D. Davenport, Stockton; Mrs. Jennie Helbing, Ross; Hinds & Spicer, Oakland; Margery Perry, Ross.

Rarer Breeds.—G. H. Pettingill, Lockeford, Blue Andalusians; Manuel Roberts, Concord, Silver Campines; J. T. Skelton, Sacramento, Silver Campines, Red Sussex; Percy Ward & Sons, Oakland, Silkies, Dark Cornish, and Maline; Mrs. V. K. Hamilton, San Gabriel, Blue Andalusians; Mrs. Jennie Helbing, Ross, Light Brahmas; C. L. McGee, Houdans; W. M. McGee, Oak Park, Dark Cornish; Y. Miki, Sacramento, Japanese Game, Sakura, and Anagi; Mrs. D. D. Davenport, Stockton, White Japanese Silkies; J. W. Blackman, Los Angeles, White Cochins, Black Cochins; Mrs. S. G. Bramhall, Oakland, Light Brahmas.

Rabbits and Hares.—G. H. Pettingill, Lockeford, Flemish; Walter Hickling, Fruitvale, New Zealand; Berry Bros., Auburn, New Zealand; H. Eldridge, Burlingame, Flemish and Rufus Red Belgian; U. Gidoux, San Mateo, New Zealand, Red and French Silver.

Geese.—Mrs. J. G. Mee, Saint Helena, Embdens; The Ferris Ranch, Pomona, Africans; W. A. French, Stockton, Toulouse.

Ducks.—B. C. Quessenberry, Lodi, Pekins; Mrs. Jennie Helbing, Ross, Rouens; E. M. LaBaron, Mesa Arizona, Rouen; G. G. and J. K. McChesney, San Jose, Colored Muscovy; W. M. McGee, Oak Park, Fawn and White Indian Runners; The Ferris Ranch, Pomona, Buff ducks; W. A. French, Stockton, Rouens, Pekins, White Muscovy, Colored Muscovy.

Turkeys.—N. E. Mulick, Willows, Mammoth Bronze; Mrs. J. G. Mee, St. Helena, Mammoth Bronze; J. W. Blackman, Los Angeles, Mammoth Bronze; The Ferris Ranch, Pomona Bourbon Red.

POULTRY NOTES.

Many new poultry plants are being established in the districts around Modesto and Turlock.

Len White of Ogden, Utah, is buying horses through August, around Modesto, for the U. S. army.

Many new poultry plants are being established in the districts around Modesto and Turlock.

The Coalinga Poultry Ass'n recommended that its members report to C. T. Walker their exhibits for the Fresno Fair.

The Kings County Poultry Ass'n has decided to hold its annual exhibition at the fair grounds during the Kings County Fair.

Misses Florence and Ada Birks of West Sutter have recently added 800 turkeys to their flock of 400. The 800 were purchased from Fred Stopher of Dunnigan.

A loss of eggs amounting to \$2,500,000 in Missouri alone during warm weather is attributed by the College of Agriculture to storage at temperatures over 70 degrees and in musty places. They should be stored like butter.

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TRAPNESTING FOR EGGS.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

This is the time to be getting ready for winter eggs; for unless we prepare for them the harvest will be skimpy.

The question as to whether there is "an egg type" is answerable only by the man who gets the egg. To get the egg we must have hens that have been selected for two or three generations back, and the culls sent to market faithfully, no matter how good looking they were.

For people that are not good judges, there is nothing so sure as a few trap nests faithfully looked after. They take considerable time. But if you cannot get the drones without them, it is valuable time that will be paid for by saving in feed. We cannot afford to run a flock haphazard style. So if you can't tell the drones, lose no time in setting up a trap nest or two and getting down to business. You can feed a small flock much cheaper than a large one, and by concentrating the feed and care on those that are good layers you will get more winter eggs than is possible by trying to carry over a lot of deadheads.

After securing the trap nests, put a band that is numbered on each hen, being careful that no two hens are banded with the same number, then write out a sheet of such hens that are to lay in that nest and give the numbers of each hen; as a hen is released from the trap, look at her number and credit her egg on the sheet.

Then set the nest ready for the next hen and take the last egg out of the nest. When a person is out among the flock it is very little trouble to watch several trap nests; but if there is other work, the hens get neglected and are often kept in the nests so long that it interferes with the supply of eggs. So if these nests are put in it pays to devote the time to watch and liberate the hens promptly as soon as they have laid.

Properly speaking the trap nest is a fixture for the breeding pen. If the breeding pen has been attended right we will have hens that lay over 150 eggs in the year. Hens which lay less, unless they are good setters and mothers, thus making

up in another way, are kept at a loss, and should not be carried over for winter egg production.

Breeding From Crosses.—I have some Black Minorcas and in the lot is a top-knot, very black. I set her eggs and now have a pen of them with a rooster of same. Will it be all right to mate these hens with the rooster?—J. L. R.

They are most likely Houdans. Did you ever look how many toes they have? Houdans have a top-knot and an extra toe growing out behind, but as a rule they are spotted like Anconas. It might do to mate them one year, but the progeny will most likely revert back to the Minorca type, if your male was a Minorca. If the hen was an extra good layer it would be worth trying out; if not, very little good will be secured by another generation of a cross.

Turkey Hen Wastes Away.—A year-old turkey hen began moping a week ago, she refused all kinds of feed, but drank water. After the fourth day I put her in a coop and forced bread and milk down her, but she seemed unable to swallow. This morning she was dead. All flesh had wasted away. Had thin brown droppings. Upon opening the gizzard, found it packed with gravel and brownish water. Hen had been running on barley stubble with a brood of young, had alfalfa run too. Young are all healthy. This morning another hen is moping the same way. Have never had any trouble before. —Mrs. B. C. Modesto.

I think this turkey has been wasting away some time and you have not noticed her; the trouble is consumption. You probably neglected to see that she was properly fed while sitting, then she came off with a brood; and mother-like let them have all she found on range until she got so that she had just as soon go without as to eat. See to it that your flock get enough to maintain the bodily need; you can find out by feeling the crops of the mother hens at night.

Try the Coulson
System of Feeding
Our free book "Chickens from shell to Market" gives full particulars
Coulson Co. Petaluma Cal.

CORN

Harvester cuts and throws in pile on harvester or windrows. Man and horse cuts and shocks equal to a Corn Binder. Sold in every state. Price only \$22.00 with fodder binder. Testimonials and catalog FREE showing picture of Harvester. PROCESS MFG. CO., Dept. 2472, Salina, Kansas.



Keep Those Nests Clean

Mites, scaly leg and germs of roup, canker, white diarrhea and other diseases lurk unseen and unsuspected in the straw or shavings. Neglect may be the cause of infection wiping out your flock. Prevent the entrance and spread of disease by sprinkling the nests with

CARBOLA
The Disinfecting White Paint

Guaranteed harmless to the birds yet is 20 times stronger than carbolic acid in the destruction of germs. Comes in powder form. As a paint for the walls, ceilings and floors of poultry houses, cellars, dairies, barns and other places it is unequalled. Just mix with water and put on with brush or sprayer. Will paint any surface a beautiful snow-white and disinfect the premises at one operation. Will not taint food products of any kind.

Use It Instead of Whitewash

Will never flake, peel or blister. Adheres to wood, stone, brick or cement. Get it from your dealer. If he will not supply you send his name and your order to us.

10 lbs. (10 gals.) for \$1 and postage. 20 lbs. (20 gals.) for \$2 delivered free. 50 lbs. (50 gals.) for \$4 delivered free.

A trial package, enough to paint and disinfect 250 square feet, from your dealer or sent by parcel post for 25 cents.

GERMAIN SEED & PLANT CO., Wholesale Distributors, Dept. L, Los Angeles, Cal.

The Home Circle Page of the Pacific Rural Press

MRS. BEST'S LETTER.

My dear Friends:

In my travels this summer, I visited one country home where there was quite a family of children and each and all of them had their own special duties to perform about the house. One of them had the entire charge of keeping the wood-box full and to a couple of the others was assigned the much-dreaded task of dishwashing.

But in this household, dishwashing had been robbed of half its disagreeableness by the thorough, systematic manner of doing it and that was due to the efficiency of the mother, who knew just how it should be done, taught her children how to do it and then saw to it that they did it that way.

In the first place, every dish was either scraped with a rubber scraper or wiped with a piece of brown paper, so that no grease was left on its surface.

When dishes are piled into the pan thick with grease and bits of food, it is no wonder that dishwashing becomes a horror.

With plenty of hot water, a good white soap in a shaker and a dish mop, the work goes along very rapidly and when the dishes are placed in the drainer, and well scalded, it barely takes any wiping at all to polish them. Some people do not wipe at all, but this mother believed in having the dishes polished.

She had them wash the glasses first, before any soap was added to the water, silverware next and then the china and really the dishwater was almost as clean after the last dish was taken out as when the first glass was put in.

She always had an abundance of hot water, so when the dinner was ready to serve, she emptied all the cooking utensils and slipped the food into the oven and those pots were all washed before dinner went onto the table. If you have never tried this, it is worth remembering, for these cooking dishes will wash in half the time when first emptied than after they have stood half an hour or more.

You would have been surprised and delighted to see how easily this task, which so often is a very disagreeable one, was accomplished and with what pride those youngsters worked. They are certainly going to be capable, efficient housekeepers and be able to make some man happy, thanks to their mother's careful training. Yours devotedly,

Rosabella Best.

FRICASSEED CHICKEN.

Cut in convenient pieces for serving, wash and dry, roll in flour and fry in lard or drippings until brown. Put into a kettle with a close cover, season to taste and nearly cover with boiling water. Keep where it will cook slowly for two or three hours, according to the age of the fowl. This is a good way to cook an old chicken as it insures tender meat and plenty of gravy, which when thickened and well seasoned adds to the generousness of the meal.

MARSHMALLOW CREAM.

Where ice is not available, the gelatine dishes are popular substitutes for ice-cream and sherbets. The following attractive dish will make a nice change for a company dinner:

1 tablespoon granulated gelatine, $\frac{1}{2}$ cup cold water, $\frac{1}{2}$ cup boiling water, whites of 4 eggs, 1 cup sugar, 1 teaspoon vanilla, 1 teaspoon lemon extract, $1\frac{1}{2}$ squares chocolate.

Soak gelatine in cold water five minutes. Add boiling water, and place over hot water until dissolved. Cool but do not chill. Add sugar gradually, beating continually. Divide quickly into three parts. To the first, add a little pink coloring paste and the vanilla; to the second add melted chocolate and vanilla, and flavor the third with lemon. Have ready a wetted mold or bowl with straight sides. Put into it the chocolate mixture. When this is set, put in the white and then after that sets, the pink. Candied cherries may be added to the white and nuts to the pink. Serve with whipped cream.

TO COOK STRING-BEANS.

After your beans are snapped, wash thoroughly and drain. Heat a generous amount of drippings or bacon fat in a skillet and brown your beans thoroughly. Then add water and cook as usual. The browning seems to give a richer flavor to the beans.

When the hands are dry and red, either from housework or the weather, bran water will be found very soothing. To obtain the water, put bran into a cotton bag, and boil for twenty minutes. When necessary to wash the hands during the day, use the bran water somewhat diluted. If used faithfully, this will keep the hands smooth and white.

WATERMELON SYRUP.

The U. S. Dept. of Agriculture is authority for the following recipe for a table syrup made of watermelons. This syrup can be used immediately or can be bottled hot and kept. About thirteen gallons of juice will make one gallon of syrup. This amount of juice can ordinarily be secured from ten melons of about twenty-five pounds' weight. The juice must be boiled down to the consistency of syrup.

DESTROYING COBWEBS.

Editor Home Circle: Having seen an inquiry in your paper about the pest of spider webs and no answer, will say the best way I have found is to burn them with a torch made by winding a piece of cloth around a small stick and wetting with kerosene. Or better still, use the torch like the painters use to burn off paint. Of course, to be permanently rid of them, the spiders must be destroyed.—U. S. A., Modesto.

The early order for fruit trees gets first attention.



The Woman Who Knows
the one perfume which suits her—the exact style of dress
which becomes her—the particular type of person she en-
joys as a friend:—Such a woman, we are sure, will appre-
ciate the assistance of the "Taste Packet" in deciding just
which tea-flavor precisely suits her taste.

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In standard
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This packet contains four parchment envelopes of fine tea—
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Ceylon, Oolong, English Breakfast. We mail it gladly
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Schilling's Tea



MUST LOVE AT LAST.

Whether the time be slow or fast,
 Enemies hand in hand
 Must come together at the last
 And understand.
 No matter how the die is cast
 Or who may seem to win,
 You know that you must love at
 last!—
 Why not begin?

—Witter Bynner.

WHAT KEPT RUTH.

"Mother, may I go to see Ada today?" said Ruth, as she tied on her sunbonnet. "You know she is going to visit her Aunt Emma tomorrow, and I won't see her for a whole month."

"Why, yes, I think so," said Mrs. Naylor. "Your dress is clean, and you have all your chores done. Yes, you may go and stay a little while. You will miss Ada very much."

"What if Ada's mother asks me to stay to dinner?" asked Ruth, twisting her bonnet-strings.

"Well, I think you'll have to stay, then," laughed Mrs. Naylor. "Be a nice, polite little girl, and if she doesn't ask you, come right back home. Remember, I can trust you."

So Ruth kissed her mother goodbye and skipped down the lane and toward the little woods pasture that separated her father's farm from that of Mr. Gilbert. It was a pleasant walk, and the two little girls had worn a path going back and forth visiting. The distance was not long, but she was not in sight of home on account of the little hills that shut out the view.

Mrs. Naylor was very busy that day, but along about four in the afternoon she thought Ruth ought to be coming home. "Something may have happened," she said. "I can always trust Ruth, and she never was gone this long before."

"Now don't worry," said Mr. Naylor, who had been away from home helping a neighbor thresh. "Ruth is past eight and she can be trusted. Most likely the girls are having a good time and Mrs. Gilbert has forgotten to send her home."

But to satisfy her he started down toward the woods pasture, saying he would meet her on the way home. Ruth was such a trusty little girl that he walked rather slowly, thinking to give the little girls more playtime, since they would not be able to play together for so long.

"Father! Father!" cried a very joyful but rather faint little voice as he reached the woods pasture. "I thought nobody would ever come."

Poor little Ruth! As she went singing through the woods in the morning she found the cattle in their neighbor's woods breaking down the fence and about ready to get into her father's cornfield. She drove them far back into the woods, calling for help as she did so, but nobody could hear her at that distance. Every time she thought she had the cattle safe from the field and started to run for help they came plunging back, eager for the fresh green corn. So the poor child had to stay at the broken place all day.

"And never a bite of dinner!" said her father, gathering her up in his arms and kissing the tear-stained face. "I am so sorry, little Ruth. You are a brave girl to care for your

father's corn so well. Sit here in the shade and I'll mend the fence in a few minutes."

He brought some rails and repaired the place until he could come back with hammer and nails and materials, and then they hurried to the house. You may be sure Ruth ate a big dinner-supper as soon as her mother could put the good things on the table.

Ruth did not see Ada until she came home from her visit, but she thought she was well paid for her hard day when her father took her to town and let her pick out the dearest little blue and gold watch you ever saw.

"For only one day's work!" said Ruth, happily, as the lady in the store pinned the watch to her new blue dress. "My, but that was a good day's work!"

"It certainly was," said her father. "It saved me many, many dollars, my brave little Ruth."—Hilda Richmond, in Sunday School Times.

GOOD HEALTH.

[By H. E. Pastor, M. D.]

Sleep, Nature's Restorer.

If circumstances permit, try and take a short nap after the mid-day meal. Sleep is a wonderful invigorator, and helps the body to resist more effectually the enervating effects of excessive heat. Cultivate the habit of ample sleep at all times. It lessens susceptibility to disease, and, when disease may by chance be contracted, a cure is more speedily effected. A distinguished physician once said: "I would rather hear that my patient had slept than that he had taken the medicine I prescribed." So, don't forget the "siesta"; it should become a confirmed California institution, especially in our hot valleys in the mid-summer season.

Thirst in Hot Weather.

Don't be afraid of a plentitude of water in the hot season—applied internally and externally. Thirst is Nature's signal for a pressing bodily need. Atmospheric heat above 98½ degrees, to which the body is exposed for long periods of time in the torrid interior valleys of California, puts quite a strain on the physical mechanism, for it then becomes necessary that the bodily temperature be kept below that of the surrounding air. This nature does by the sweating process, which keeps down the body's heat by evaporation. The more heat the body generates the more water is needed to drive off this surplus heat by evaporation. Hence Nature keeps the body bathed in perspiration when it becomes overheated. You can aid Nature in doing this by also taking a sponge bath daily to keep the skin active, and by wearing light clothing. But be careful to take baths in no form when perspiring freely, nor drink ice water or other cold drinks. Such practices are not merely indiscrete; they are dangerous. Cool off slowly.

Lemons in Summer.

The value of lemons as a substitute for drug medication is surprisingly underestimated by the majority of even intelligent people. In the form of lemonade, lemon juice is not only a cooling and refreshing

drink, but is one of the best of all remedies for persons suffering with bilious and liver troubles. It is better than calomel, mandrake root, quinine, or other drugs, and less drastic in action. It stimulates the liver and digestive organs, and tones up the system generally. Lemon juice has many other incidental uses. Dr. Samuel O. L. Potter, a medical authority of the highest standing in California, has written that lemon juice promotes the action of the skin and kidneys, is efficient in acidity of the stomach, will retard hardening of the arteries in advancing age, and is of service in acute rheumatism. It is best taken from a half-hour to an hour before meals, one or two glasses a day. Californians should make a wider use of one of its own distinctive products.

Rattlesnake Bites.

The rattler is common in California and quite active at this season of the year on both plain and mountain. The venom of this snake is held in a small sac or pocket situated at the base of the sharp tooth or fang, which is channeled through its center to make an outlet for the poison. When this fang penetrates the flesh of its victim the poison sac is compressed as you would squeeze a hollow rubber ball in the hand, and the virus is thus injected into the wound. The remedies advocated are various. For quick action the wound should be washed, sucked, then cut out or burned. Permanganate of potash (commonly used on chicken ranches for roup and other purposes), in three to five grain doses, is claimed by some practitioners to be an infallible antidote. A strong solution of the same drug (or echinacea) should be applied directly to the wound in the form of a

lighter, flakier
biscuits



Steady, evenly distributed heat, under perfect control makes a good oil stove wonderful for baking.

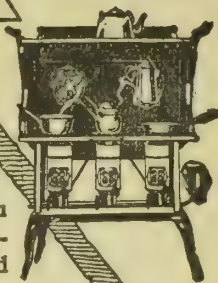
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broils, roasts, toasts. More efficient than your wood or coal stove, and costs less to operate. Cuts out the coal-hod and wood-box drudgery. Keeps your kitchen cool. The long blue chimneys prevent smoke or odor. In 1, 2, 3 and 4-burner sizes, ovens separate. Also Cabinet Models with Fireless Cooking Ovens. Ask your dealer today.

STANDARD OIL COMPANY
(California)



dressing. Stimulants should be used to keep up the action of the heart, which is much depressed. (Strong hartshorn or whisky is used as such a stimulant.) Tie a ligature tightly above the wound to keep the poison as much as possible out of the general circulation and away from the heart. Apply a cupping glass to the wound if one is available to draw out the blood. Back in Illinois, where the writer spent his boyhood and where a more or less intimate acquaintance with the rattler was had, a live chicken was caught in these emergencies, cut wide open and clapped on the wound for this purpose. This was followed by another chicken, then another, till the chicken ceased to turn green.

PREPAREDNESS!

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ANTS Ant Destroyer—Is slow acting—does not kill instantly, but gets the nest as well as the parent. Does not lose strength. Positively non-poisonous—no danger to children, house pets, or foodstuffs. Send 6c for trial can. Ask your neighbor. She uses it. At your dealer. Accept no substitute.
 DEPT. F. 19 to 25 MINNA ST., S. F.

FIGURES GIVEN
ARE INDEPENDENT
AND RELIABLE

Pacific Rural Press Market Report

PRICES QUOTED
AS PAID TO
PRODUCERS

San Francisco, Aug. 23, 1916.

Wheat.

Light crops in Middle West strengthen Coast market; local prices again advanced sharply. Local offerings light, coming mostly from the north.

[f. o. b. San Francisco.]

Sonora wheat\$2.00 @ 2.05
Northern club 2.07 1/2 @ 2.10
Calif. club, ctl. 2.05 @ 2.10
Northern Bluestem. 2.10 @ 2.15
Northern Red 2.07 1/2 @ 2.20

Barley.

Speculative business rather heavy, with advancing prices reflected in the spot market. Present prices seem to be bringing heavier offerings from the country, which may check the advance.

[f. o. b. San Francisco.]

Shipping, ctl.\$1.75 @ 1.80
Choice seed, ctl. 1.70 @ 1.75

Oats.

Offerings light, and market firm, with further advances on white, red, and Texas red seed. Offerings of off-grade lots have prevented an advance in feed.

[f. o. b. San Francisco.]

Red feed\$1.75 @ 1.80
Red seed 1.95 @ 2.05
White 1.70 @ 1.75
Black seed 3.00 @ 3.25
Texas Red seed 2.20 @ 2.30

Corn.

Eastern corn continues to advance, and local values show an immediate response. Egyptian also is quoted a little higher, with light offerings of desirable grain.

[f. o. b. San Francisco.]

Eastern Yellow, ctl.\$2.05 @ 2.10
Milo Maize 1.75 @ 1.80
Egyptian 1.90 @ 1.95

Beans.

Very little demand for old crop beans, but stocks so closely cleaned up that values are slow to decline. Local dealers look for a large crop; but the market should absorb it at good prices. There has been considerable contracting in advance for limas in the south.

[On wharf, San Francisco.]

Bayos, per ctl\$5.40 @ 5.50
Blackeyes 3.00 @ 3.25
Cranberry beans 5.25 @ 5.40
Horse beans 3.25 @ 3.40
Small Whites (south) 7.00 @ 10.00
Large Whites 6.25 @ 6.50
Pinks 5.50 @ 5.70
Limas (south) 5.30 @ 5.40
Red Kidney 8.00
Mexican Reds 5.25 @ 5.40
Tepary beans 4.50 @ 4.75

Seeds.

The alfalfa and Oregon vetch crops have been so largely cut for hay that seed in both lines promises to be very scarce. New seed in other lines not yet available, but some small stocks offered at the prices quoted.

Cover Crop Seeds.

[Wholesale prices, S. F.]

Alfalfa, per lb. 23 1/2 c
Oregon Vetch 6 c
Melilotus Indica 8 c
Melilotus Alba 12 1/2 c
Bur clover, recleaned 10 1/2 c
Canada Field Peas 5 1/2 c

Hay.

Local offerings continue to decrease owing to the car shortage, of which dealers are making strong complaints. Local market lightly supplied, with prices accordingly firm. Dealers continue to predict lower prices as soon as large reshipments can be handled; but most reports from the country seem to justify a firm view of the market. A general shortage is reported in northern California. However, local demand is limited, and there is no great shipping business at present. New alfalfa from the river district is of fine quality, and finds a good market.

[Wholesale prices per ton, carload lots, San Francisco.]

Wheat, No. 1\$13.00 @ 14.50
No. 2 10.00 @ 12.00
Tame oats 11.50 @ 15.50
Wild oats 10.50 @ 13.00
Barley 10.50 @ 13.00

Alfalfa 10.00 @ 14.50
Stock hay 8.50 @ 9.50
Straw, per bale35 @ .50

Feedstuffs.

Feedstuffs generally active, and values firm, alfalfa meal, cracked corn, and rolled barley all being higher. Beet pulp is absent from the city market.

[Wholesale prices, per ton, carload lots, San Francisco.]

Beet pulp, per ton. Nominal
Alfalfa meal, per ton. \$18.00 @ 19.00
Bran, per ton 28.00 @ 29.00
Oil Cake Nominal
Cocoanut cake or meal 23.00 @ 25.00
Cracked corn 44.00 @ 45.00
Middlings 35.00 @ 38.00
Rolled barley 34.00 @ 35.00
Tankage 45.00
Rolled oats 34.00 @ 35.00

Potatoes and Onions.

[On wharfs, San Francisco.]

Potatoes, ctl., Delta ..\$1.75 @ 2.10
No. 250 @ 1.00
Salinas 2.25 @ 2.40
Sweet potatoes, per lb. 3 @ 4c
Onions, yellow 1.00 @ 1.25
Garlic, new crop, per lb. . . 4 @ 5c

Poultry.

Arrivals liberal from nearby points, and Eastern stock does not clean up very readily. Good young stock doing fairly well; but hens in oversupply. Roosters also have dropped a little.

[Wholesale prices, S. F.]

Broilers, 18 lbs. to doz. and less, lb 22c
do, over 18 lbs. to doz. . . 21c
Fryers 20 @ 22c
Hens, extra, per lb, colored 18 @ 19c
Small leghorn 15 @ 17c
Smooth Young Roosters, per lb. (3 lbs. and over) . . 22 @ 24c
Squabs, per doz 2.00 @ 3.50
Geese, per pair 2.25 @ 3.00
Ducks 13c
Old 12 @ 13c
Belgian hares 10c

Butter.

Receipts continue large, and prices about 1c under last year, but tendency now upward. Still considerable buying for Eastern shipment:

and a strong shipping movement has started to other coast points.

[S. F. Dairy Exchange prices.]

	Thurs.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	26 1/4	26 1/4	26 1/4	26 1/4	27	27
Prime 1sts	25 1/4	25 1/4	25 1/4	25 1/4	25 1/4	26 1/4
Firsts	25 1/4	25 1/4	25 1/4	25 1/4	25 1/4	26

Eggs.

Arrivals continue to decrease, and extras again show a slight upward tendency, resulting in 1/2c gain. The increasing use of storage goods by large consumers, however, delays the advance; and pullets are higher, owing to diversion of demand to this grade.

[S. F. Dairy Exchange prices.]

	Thurs.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	33	33	33	33 1/4	33	33 1/4
Sel. Pul.	29 1/4	30	30 1/4	30 1/4	30	30

Cheese.

Monterey cheese shows a slight advance, but is easy, with very large arrivals. Other grades have been rather slow, but show no change in price.

[S. F. Dairy Exchange prices.]

Y. A.'s, fancy 17 c
Fancy Calif. Flats, per lb 14 c
Monterey Cheese 14 1/2 @ 15c

[Los Angeles Dairy prices.]

	Wed.	Thurs.	Fri.	Sat.	Mon.	Tu.
Butter	28	28	28	28	28	28
Eggs	32	32	32	32	32	32

Deciduous Fruits.

Local market overloaded with fruit, especially off-grade stock, which does not clean up readily. Bartlett pears have advanced, being very closely cleaned up. Apples continue strong and new Bellflowers find good sale here, in addition to a large shipping movement. Canners take all peaches they can get, but the street price is lower. Plums and prunes steady, with a large shipping demand in both lines. Figs plentiful and easier. All melons have declined, with plentiful supplies and only moderate demand. Huckleberries are slightly lower, and raspberries have dropped sharply.

[Wholesale prices, San Francisco.]

Huckleberries, lb 6 @ 10c
Currants, chest \$3.00 @ 4.00
Loganberries, chest 6.00 @ 7.00
Blackberries, chest 2.50 @ 4.00
Raspberries, chest 6.00 @ 8.00

Special Deciduous Market Report.

By J. L. Nagle.

Sacramento, Cal., Aug. 21, 1916.

Continued heavy shipments of Malagas have depressed all markets and the movement of Tokays has also somewhat lowered prices. Practically half of the Malaga crop already shipped.

Eastern crops are now moving but demand for California peaches remains strong. Offerings light and will be from now on.

Mountain Bartletts are receiving good demand; all markets active and prices high.

Ruling prices for the week:

New York.—Bartlett pears averaged \$3.05; Malaga grapes, \$1.38; Thompson Seedless, \$1.25; Tokay, \$2.00; Elberta peaches, 99c; Lovell, 89c; Orange Cling, \$1.26; McDevitt, \$1.35; Duke plums, \$1.88; Kelsey, \$1.84; Gross, \$2.05; Hungarian, \$1.74; Giant, \$1.38.

Chicago.—Bartlett pears, \$2.98; Kelsey plums, \$1.68; Giant, \$2.00; Hungarian, \$2.24; Dukes, \$2.06; Elberta peaches, \$1.07; Malaga grapes, \$1.27; Tokay, \$1.63.

Total shipments to Aug. 22, 8913 cars; total shipments same date 1915, 6774 cars.

Special Livestock Market Report.

San Francisco, Aug. 23.

Practically no change in livestock or wool.

Cattle receipts are practically all California grass stuff, much of it with white faces but very light, averaging around 950 pounds and many too thin to butcher. Good fed Nevada cattle are expected for the six months following Dec. 1; but very little fed cattle come from California.

Sheep.—A bunch of 2000 Lassen county Cotswold-Lincoln spring lambs just off the range brought to delightful weight and condition, is part of the arrivals. This milk and grass fed stock is considered superior to fed lambs.

Hogs.—Very bumily fed, unfinished, oversized stuff characterizes the arrivals.

Wool.—No activity in country

wool; Eastern and local city prices have dropped, though whether the drop is temporary will depend on whether England releases the large Australian surplus which is under embargo. There is considerable of last fall's wool in this market which the holders would like to sell at last year's prices.

North Portland, Ore., Aug. 21.

Cattle.—The week's market opened with over 1200 head. Quality quite fair. Best steers sold at \$7.00 and cow stuff fairly well—tops at \$5.15.

Hogs.—Hog receipts only a thousand Monday. Prices strong at \$9.50 for tops.

Sheep.—Nearly 3700 received Monday on a steady market. Top lambs are still quoted at \$8.25 and other grades in proportion.

Strawberries, chest 2.50 @ 4.00
Apples, Grvnstein, 4-tier 1.15 @ 1.25
Alexander75 @ .85
Bellflower, box85 @ 1.00
Pears, Bartlett, bx, No. 1 1.75 @ 2.00
No. 250 @ 1.00
Peaches, lugs60 @ .85c
Peaches, basket 40 @ 60c
Figs, Cal. black, box double layer75 @ 90c
Brunswick 25 @ 40c
White, single layer 40 @ 60c
Plums, crate75 @ 1.00
lugs75 @ 1.00
Prunes, crate85 @ 1.00
Nectarines, crate75 @ 1.00
Cantaloupes, std. crate 70 @ .85
Casabas, crate75 @ 1.00
Watermelons, doz 1.00 @ 2.00
Grapes, Malaga, small box 60 @ 75c
Muscat, small box 60 @ 75c
Grapes, Thompson, crate. . . . 60 @ 75c
Tokay, crate 75 @ 90c

Dried Fruits.

The removal of the freight embargo on the Sunset Gulf route should help the dried fruit movement somewhat. Divergence of views between buyers and sellers great as ever, especially on prunes. Low prices recently put out by packers regarded here and in the East as designed to shake the confidence of growers, which they have been unable to do, as the latter are financially strong and have abundant support, some of the prune belt bankers being confident of high prices. Offers have been further reduced; though growers in most districts are holding for over 5c. The peach movement somewhat retarded by delay in naming prices, as well as by lack of packing facilities. Apricots find better offers, but not high enough to bring out much stock. Apples easier with increasing offerings, and ordinary white figs are lower. The old crop raisins are practically all cleaned up, with a continued good demand.

[Net to growers, f. o. b. shipping point.]
Apples, new crop 4 1/2 @ 5 1/2 c
Apricots, per lb, 1916. 10 @ 11 c
Figs, white, 1916 5 @ 5 1/2 c
Figs, blk, 1916 4 @ 4 1/2 c
Calimyrna, 1916 9 @ 10 c
Prunes, 4-size basis, '16 4 1/4 @ 5 1/4 c
Peaches, old 5 @ 5 1/2 c
1916 6 @ 6 1/2 c
Pears 6 1/2 @ 7 c
[Associated Raisin Co. prices]
Fancy Seeded, 16 oz. 7 c
London Layers, 3-crown, 20-lb. box, 1916 1.30
Imperial Clusters, 6-crown, 20-lb. box, 1916 2.50
20-lb. box, 1916 1.30
cases, per lb 8 c
Sultanas, 50-lb. cases, per lb . . 8 c

Citrus Fruits.

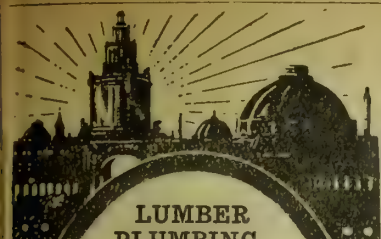
At New York Aug. 21, 14 cars Valencia averaged \$3.30 to \$5.35 with demand stronger. Lemons averaged \$5.85 to \$6.45 and grapefruit \$1.25 to \$2.05. At Boston, Valencia averaged \$3.55 to \$4.90 and lemons \$4.15 to \$6.70. At St. Louis Valencia averaged \$3.75 to \$4.30 with strength on small sizes; lemons \$4.20 to \$6.45.

The San Francisco movement has been about normal for the last week, prices being firmly maintained on the basis of values at shipping points.

[Wholesale prices, San Francisco.]
Oranges, Valencia, fancy box \$3.50 @ 3.75
choice 3.15 @ 3.35
Grapefruit, fancy 3.25 @ 3.50
choice 2.50 @ 2.75
Lemons, fancy 6.50 @ 7.00
choice 6.75 @ 6.25
standard 4.00 @ 4.50
Lemonettes 3.75 @ 4.25


Honey.

Very little coming into this market. Eastern buyers are said to be picking up much of the new offerings in the country at high prices, and the local trade is carrying light stocks. Would our readers like us to continue these quotations?
[Wholesale prices, San Francisco.]
Water white, comb 13 @ 15 c



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Some excellent plumbing, doors,
glazed sash and frames. Best
second-hand flooring. Large tim-
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AT MAIN YARDS, ONE BLOCK,
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We fit you out complete.
2nd hand or new.
LIST OF SPECIALS:
500 fine cross panel doors (new)
\$1.45 each
100 large windows and frames
200 3x5-1 windows complete, \$4.50 ea.
Complete bathroom set, 50 lockers,
3/4-inch 6-ply hose, 7c per foot.
100 rolls No. 20 wire galvanized
graduated mesh.
36-inch rolls, 165 ft. long, \$4.00
48-inch rolls, 165 ft. long, \$4.50
72-inch rolls, 165 ft. long, \$5.20
Galvanized fly screen, per ft. 7c
Latest new elec. fix., 50c on \$1
We sell as advertised, ship as
we agree, and guarantee.
Come and see our goods
if possible. Otherwise
send us your list.
SYMON BROS.,
WRECKERS,
1561-27 Mkt St., S.F.



Amber10 @ 12 c
Water white, extracted .. 8 @ 9 c
Light amber, new 6 @ 7 c
Dark 3 1/2 @ 4 c

Livestock.

[Prices paid for stock, live weight,
off cars, without feed or water,
at Stock Yards, South S. F.]

Steers, No. 1 6 3/4 @ 7 1/4 c
No. 2 6 1/2 @ 6 3/4 c
Cows and Heifers 5 3/4 @ 6 1/4 c
No. 2 4 1/2 @ 5 c
Bulls and Stags 4 @ 4 1/2 c
Calves, light 8 @ 8 1/2 c
Medium 7 @ 7 1/2 c
Heavy 6 @ 6 1/2 c
Hogs, grain-fed:
100 to 150 lbs 8 c
150 to 250 lbs 8 3/4 c
250 to 325 lbs 8 1/4 c
Prime Wethers 7 @ 7 1/2 c
Spring Lambs, f. o. b.
country points \$5.00 @ 5.50

Horses.

City market practically dead.
Many large firms formerly using
horses have put on motor vehicles.
Some of the largest teaming con-
cerns buy their stock in the East.
[Approximate values in San Fran-
cisco, based on auction sales.]
Drafters, 1700 lbs and up \$ 250
Drafters, 1550 to 1650 .. 150 @ 200
Chunks, 1350 to 1500 lbs 150 @ 175
Wagon horses, 1050 to
1350 lbs 110 @ 150
Green Mountain range
horses, 950 to 1200 lbs 20 @ 75
Farm workers 50 @ 100

NOTES.

Fake solicitors are busy in the
Western States collecting money for
organization of national farm loan
associations under the new law.
There is nothing doing until the
Federal Farm Loan organization
shall be completed. A hearing at
Sacramento Sept. 10 will be held by
the Federal Farm Loan Board to
help determine where to locate the
land banks.

The Oak Grove Dairy Farm,
Woodland, reports that five Berk-
shire gilts farrowed 45 pigs; 21
gilts and sows farrowed 206 pigs
last spring. Artful Masterpiece,
sired by the St. Louis World's Fair
grand champion Masterpiece, died
last week at nine years old. Some
fall litters will be born to him, but
it had not been expected to use him
any more. Their herd sire, Im-
prover B, has been grand champion
at Topeka and Hutchinson, Kansas,
and at the 1914 California State
Fair.

The Blatchford Calf Meal Co.
sterling silver cup for making the
greatest gain at the least cost in a
calf-feeding contest went to W. J.
Maine of Rhode Island, whose five
calves gained 2 1/2 pounds per day
from birth to 12 weeks old on the
Calf Meal, new milk, skim milk,
ground oats, and clover hay.

Mr. Haden Smith, of Woodland,
writes us that eighty per cent of his
sales of purebred Durocs have been
made through advertising in the Pa-
cific Rural Press.

Classified Advertisements

Rates in this directory, 3c per word each
issue; or if carried weekly for one year, 2 1/2 c
per word.

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**BUY DIRECT AND SAVE SEVERAL
PROFITS**—Lumber, lath, shingles, moldings,
doors, windows, frames, and finish at rock-
bottom prices. Quality and satisfaction guar-
anteed. Send your lists for estimates. Sam
Connell Lumber Company, Portland, Oregon.

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PIPE** and screw casing water pipe, guaranteed
as good as new. Prices right. Send for cata-
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SQUARE DEAL. Weissbaum Pipe Works,
160 Eleventh Street, San Francisco.

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2,000	181.51	3,630.20	4,400.00	769.80
4,000	363.02	7,260.40	8,800.00	1,539.60
8,000	726.05	14,521.00	17,600.00	3,079.00
10,000	907.56	18,151.20	22,000.00	3,848.80

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THE PACIFIC RURAL PRESS

SAN FRANCISCO

SEPTEMBER 2, 1916.

ANGELES

Cows for Fruit---Cover Crops for Both.

A declining 230-acre prune, peach, and apricot orchard demanded plant food and humus. Cover crops have been planted, and 50 dairy cattle and 2000 hens bought. Trees and crops are now fine. Fruit and milk are the cash crops.

[Written for Pacific Rural Press.]

ONE hundred and eighty-five acres of prune trees 25 years old were going to the bad on the Sorosis Fruit Ranch in Santa Clara valley. The tops were dying out. They had to be cut back more severely each year, and they couldn't seem to recover.

But they did. This year of a supposed light prune crop, 20,000 board feet of new props had to be bought. Even now, some of the limbs have broken down. The tops show very few dead branches. The leaves are thrifty except for the results of scale. The growth has been good. The soil is light loam on top. Underneath it is gravelly. Deeper down, as shown by the deep creek banks on the place, consists largely of small boulders. Well-digging revealed clay and cobbles all the way down.

Commercial fertilizer wouldn't supply the humus. Manure was unavailable. Canadian field peas and barley were planted on 14 acres in 1911. They made an immense crop of green stuff which was plowed under the next spring. In the June following, about 50 dairy cattle were bought, hoping that they would pay their way and furnish manure free f. o. b. the ranch.

They were installed in an eight-acre corral winding along the creek bank and including a beautiful eucalyptus grove but no fruit land. From January to July, 1916, they had nothing to eat but cover crops grown in the orchard; and cover crop silage was put up to supplement alfalfa from July to January.

Cash from Cows.—The herd is maintained at its original size. Manager Frank Abernathy estimates that the 35 cows milking all the time, give an average of 100 gallons per day throughout the year. Milk is weighed twice a month and tested in the ranch Babcock tester once or twice per year. It has been sold at 20 cents per gallon f. o. b. the ranch, ever since the herd was started, to retail milk men of Saratoga and Los Gatos. They sterilize the cans and return them free. There is ordinarily a surplus of 10 gallons a week of cream sold to the creamery.

The prune crop in 1911 was light—perhaps 100 tons from the 185 acres. Next year it was about 300 tons. In 1913 it was about 152 tons; in 1914, 190 tons; in 1915, 170 tons; in 1916 not yet gathered, but practically all that the trees will hold.

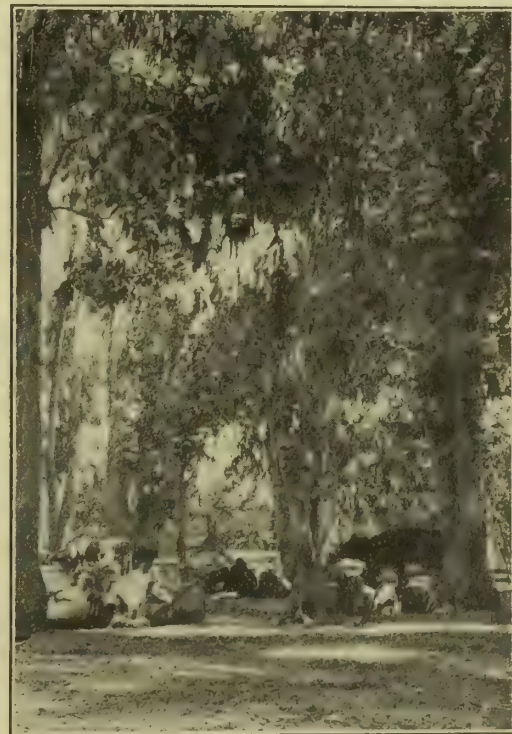
The cover crop in 1912 was planted for Canadian field peas, but proved to be common garden peas with many pods but small tops. The third year, about 150 acres were planted to German imported vetch (probably purple vetch) and one lot was planted to barley alone for the cattle. In 1914, barley alone was sown and pastured down. The vetch variety desired was unavailable. Nothing was left of the barley but the roots.

Cover Crop Silage.—In 1914 and 1915 peas from the cannery at Milpitas were bought at 12½ cents per ton and shipped to Sorosis ranch at a freight cost of \$1.60 per ton. These were siloed for the cows. Then it was decided that it would be cheaper to silo some of the cover crop.

In October, 1915, Mr. Abernathy drilled 70 pounds per acre of Canadian field peas on about 100 acres of the orchard. They came up a good stand in December, after the early rains. About half of them were allowed to grow until early May. A few of the peas were mature, and the vines, five feet long, a dense mat. A 10-foot hay rake was run down the center of each row in this 50 to 55 acres. The vines broke off easily at the ground. One of the teamsters would rake enough to keep three teams busy hauling to the silo for two or three hours. Then more would be raked, to avoid curing.

A six horse-power gas engine which pumps liquid manure from the concrete pit onto the orchard through surface irrigation pipes, was hauled around to run the No. 11 silage cutter. It would be cheaper to use a larger cutter. The three teamsters did their own raking and loading onto orchard trucks. One man helped unload, one took care of the machinery, etc., and one tramped silage.

It would have been a steady week's work to fill the 120-ton silo; but they let it settle several times and filled it again each time. A little green corn silage has been added this fall; but there is still a lot of the peavine silage left. The cows like it and clean it up well, though not with the same greediness as corn silage, and not quite so eagerly as the cannery vines, on account of the ranker growth of field peas. Six hundred pounds of salt was added as the vines were siloed, but no water. They were not dry.



Some of 50 Cows Which Eat Nothing but Orchard Covercrops from January to July, and Are Fed Covercrops Silage the Rest of the Year. Their Manure is Returned to the Orchard.

account of the ranker growth of field peas. Six hundred pounds of salt was added as the vines were siloed, but no water. They were not dry.

"No feed will bring milk like pasture," says Mr. Abernathy, so when the cows were put on silage and alfalfa hay in July, the milk decreased a little, and amounted to about 75 gallons daily in mid-August.

Where had the cows been pastured?

Cover Crop Pasture.—Last October, about 130 acres of the orchard were sown to Oregon vetch and barley, about 50 pounds of the former and 9 of the latter per acre. The barley stools so that more is undesirable.

On this, the cows were pastured every day between January 1 and July, 1916. It was separated into three blocks by a single wire fastened temporarily to trees with pieces of baling wire. When one block showed effects of pasturing, the cows were turned into another. The trees were not noticeably injured.

The cows were turned onto it about 2½ hours in the forenoon, and 1½ hours following the afternoon milking, but were taken off as soon as they showed a tendency to wander. No herder was required. They never bled. Peas have made good pasture, too, but were not used for that purpose this season. Vetch and barley are preferred for pasture. Manure from the cows was deposited in the orchard.

Cover Crop Hay.—Besides silage and pasture, the cover crops furnished hay, but of poor quality. From about 25 acres, the peas were raked clean and hauled to the five-acre fruit dry-yard where they cured perfectly into about 50 tons of hay. Some of the vines were 6 to 10 feet long and were

(Continued on page 236.)



Part of 230-Acre Prune, Peach, and Apricot Orchard Fed Covercrops and Manure Produced on the Ranch. This Season, 20,000 Board Feet of Props Had to Be Purchased.

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EDITORIALS

THE WEEK.

A GAIN August has gone astray and set flowing a lot of electric fountains—making a meteoric display for which the month has no permit except amid the mountain lakes and peaks of the Sierra Nevada. Fortunately, however, this second transgression of the harvest moon brought little more than a sprinkle to broad interior valleys where there was outspread perishable property to be injured, and such regions need only take a hint that the fall rains seem early on their way, and that all should hasten ingathering as much as possible.

We wish other menaces could be as easily disposed of, but the wish does not insure the fact. As we write on Tuesday, it looks as though transportation, which is now the farmers' one indispensable thing, might be broken up, with great danger of ruinous losses to his year's work. The trainmen's brotherhoods have ordered a strike on all railways on September 4, unless their terms are accepted before that time. President Wilson is asking Congress for laws which he thinks will prevent stoppage of trains, and if such laws cannot be put in action before the strike, it is said the trainmen will be placed under military draft to run the trains. The chances are that such an order will be easier to issue than to enforce.

The men will probably stay at home and be careful to keep out of drafts.

HAS THE PUBLIC ANY RIGHTS?

M EANTIME the public abomination in the situation endures. We are getting many rude awakenings to the impotence of civilization which we have been dreaming was the acme of terrestrial attainment. The world war is such an awakening shock. If this railway strike is not arrested it will be another. The idea is surely shocking that a few thousand men, whether they are workmen or employers matters not, should be able to endanger the lives and livelihoods of a hundred million people, by serving their private interests after they have enlisted to discharge service in a public utility. It is perhaps unfair to condemn the few thousand because of the impotence of the many millions. It is the fault of the people at large that their created agencies of transportation do not transport. The public does not charter railways for the wealth or pleasure either of the managers or the operators, but to do public service and to keep on doing it, except in face of disaster beyond control of man. We are threatened with disaster which can be and should be controlled. If this pending strike is not arrested, this Nation will perhaps clearly see itself a pitiable object, standing feebly in the view of the world with its national life-blood clotted in its veins and arteries, and its millions in misery, because it has given a few thousand people a chance to operate or not operate its public utilities as they may choose. We are not judging where the right is between those who are contending over hours and dollars of their own. It is the job of a high court of economics to determine that. We only

know that from the point of view of food production and consumption refusal to do work in running trains after having engaged to do it, is a public offense, which should be made impossible because it will bring losses upon millions of people who have worked nearly a year past to get a harvest which will keep other millions of people alive nearly a year to come. Our legislators have been so busy considering men's rights and women's rights, State's rights and Nation's rights, labor's rights and capital's rights, that they have probably forgotten that the public has any. We believe everything on earth should have its rights. We believe also that no one in pursuit of rights should destroy the rights of another. The vested right of the public is to have railway trains run: let the government secure the enjoyment of that right.

TO AMEND FRUIT LAWS.

T HE committee appointed by resolution of the Visalia Fruit Growers' Convention to initiate a movement toward codification and revision of existing horticultural laws of California, has issued an invitation to fruit-growing and handling societies to send delegates to a meeting which will assemble in the State capitol at 10 a. m. on September 6. The convention committee, which consists of G. H. Hecke, Geo. P. Weldon, and E. J. Wickson, is merely authorized to take the initiative and appoint a larger and wiser committee, which may be in session some time and may employ counsel to put its recommendations in shape suitable for presentation to the next fruit growers' convention, which will be held in Napa November 15. Thence such suggestions as the convention approves will be submitted to the next Legislature. The preliminary committee concluded that the best way to decide what lines of amendment were desirable, and to secure the assistance of those wisest in drawing them, would be to invite all interested to a conference, and a day during the State Fair seemed to have good drawing power. It is to be hoped that all fruit organizations will send delegates, and we doubt not all, whose personal interest in the subject draws them, will also be welcome to take part in the proceedings. It will be remembered that the desirability of the revision of our horticultural laws was urged by Mr. Hecke at the Visalia convention, and that the convention adopted a resolution defining the duties of the permanent committee as follows:

This body of representative citizens should be authorized to take up the whole code of horticultural acts, determine broadly what changes should be made to harmonize the existing statutes and to recommend for public discussion such new acts as are expedient and co-ordinate them with those already in the collection. In other words, the committee would be empowered to take up every principle now contained in our laws, which has been tested in practice and approved by court decision, and have all this material reconstructed into a concrete whole, which would be free from the imperfections of the present laws. This committee should also recommend a broad plan for initiating future enactments that might be rendered necessary by new or changing conditions. This plan could be adopted, if satisfactory, as the standing policy of the horticultural interests of the State.

Under this broad charter the permanent committee would examine the policies and practices involving promotion, protection, standardizing, etc., and thoroughly revise all legislation affecting our fruit-growing—not only from its own point of view, but in its relation to other State agencies and institutions. It will be an exceedingly interesting and important work.

TAKE A LOOK AT THE SHEEP.

O UR advice to readers who go to the State Fair next week is that they do not forget to go to the sheep pens and look, listen and think. There will be a lot of good sheep on exhibition, and suggestive explanations and conversations will be in the air, so you can get your eyes and ears full of things which are now especially worth thinking about. There will be more pigs than sheep, and we are partly to blame for that, perhaps, but we wish to purge our conscience of pricks for neglect of the sheep—hence this paragraph. We do not wish to get into the fix of the congressman who voted, some years ago, for free wool, and after-

wards confessed that he had been "ashamed to look a sheep in the face" ever since he was guilty of that injustice. We also know that there are some of our readers who do not like the society of pigs and pork, and have more taste for lambs and the chops thereof. So here is our chance to even up between animals and people, and therefore we say: put some sight and thought on the sheep!

But it is, perhaps, not necessary for us to display this confession and repentance. Sheep and lambs have been talking pretty loudly in their own behalf for some time back to everyone who keeps his eyes on our market quotations and reports of sales as he should. If he has gone a little farther and written to our advertisers of pure-bred bucks (as he also should), he has found that good boars have not much on good bucks, in the way of keen demand and prices, which show how sharply people want the agencies for improvement. The fact is that not only in California, but the country over, American farmers have awakened to the new and enlarged opportunity there is, not for the large ranger so much as for the farmer, perhaps, in the higher prices, which have to be paid for flesh foods and which the experts tell us are sure to last for a long time, if they ever recede to old figures. The lesson is, of course, that all owners of idle range who have capital enough to stock it and to man it sufficiently to give the sheep shelter, protection from dogs and coyotes, and to store up safety-feeds against bad weather and bare land, ought to be thinking about keeping their lands busy with sheep. If sheep can be safeguarded they will pay well on land and investment, not at all up to the needs of the pig. The sheep cannot do much for himself except hunt grub, but he will grow well on stuff which will keep a pig squealing all the time. And the same thing is true of a small band of sheep on a mixed farm; they will clean up and get fat on stuff which makes the farm look ragged and shiftless, and will turn into money-saving or money-making form, nearly everything which makes a farm and its owner weedy and discontented. No matter, therefore, how much you get interested in steers or hogs as parts of your old-fashioned mixed farming, there will still be room in your heart and your purse for the peculiar and characteristic service of the sheep. And if you do not already do mixed farming you can probably mix your specialty cropping to more advantage with a few sheep than you can in any other small way—except with hens, and their requirement of personal attention may be greater than you wish to give. Sheep will be joyful over a small amount of personal affection which would make a hen jealous and perverse.

VALUE OF A MERINO FOUNDATION.

W E HAVE no idea of trying at an essay on practical sheep husbandry. Our associates are doing things in that line nearly every issue—firing their machine-guns with munitions drawn from the experience of many California farmers who are now carrying bands of sheep on farms, of small to moderate dimensions, and are finding it very profitable. It is our conviction that many more can do well along the same line, and therefore our writers are always on the lookout for facts of practical experience with materials and methods.

There are many reasons why California should immediately take precedence of other States with breeding bands of pure-breds of dual purpose sheep of all popular breeds. It is not to be expected that any single breed will become so great

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., August 29, 1916.

STATIONS	Past Week	Rainfall Data		Temperature Data		
		Seasonal To Date	Normal To Date	Max'm	Min'm	
Eureka .....	.00	1.46	.19	62	50	
Red Bluff .....	.00	.68	.00	112	68	
Sacramento .....	.00	.07	.00	96	58	
San Francisco .....	.07	.32	.01	88	59	
San Jose .....	.01	.01	.04	82	54	
Fresno .....	.07	.07	.00	102	46	
Independence .....	.12	.20	.00	94	52	
San Luis Obispo .....	.00	.00	.02	84	50	
Los Angeles .....	.00	.00	.00	92	60	
San Diego .....	.01	.08	.00	80	62	

that it will exclude others from shares of public favor. This has never been so and never will be, because merits are distributed, because tastes differ, and because breeds vary in their adaptation to soil, weather and feed conditions, and because California has wider diversity in these conditions than any other State. Therefore, on the pure-bred side we shall have flocks of all good breeds, including several which have not yet attracted much attention. But the point which we would impress on the remembrance of those who may plan for sheep, either for home use or the market, that we have in this State a foundation stock for crossing with the pure-bred than which there is no better for our Western conditions, and that is the merino. The suitability of American and French merinos for California was demonstrated beyond all question when our wool production was greatest, and if, after the war, our wool is reasonably protected, our fine wool product will surely be great again. No matter how much land other industries may need, there will still be plenty left for sheep, and the small farmer will always find plenty of ewes at reasonable prices to bring under the improving influence of his pure-bred rams, for meat-making, with a lot of medium wool as a by-product.

The desirability of the merino foundation is now being more widely recognized than ever before. One indication of this is found in the popularity of the Corriedale, which is now recognized as a breed and is entering the United States from Australia and New Zealand, where it has been developed by selection and inbreeding (as all breeds were established) from an original merino cross. California could have started "Corriedales" for herself half a century ago, for there were men then living here who saw the chance of advantage in a cross of English sheep upon the merino, and premiums were awarded for such sheep at our State Fairs fifty years ago—because the merino showed such distinct adaptation to this country. The trouble was, however, that our wool has had more politics in it than even sand and burs, and the politics could not be scoured out of it. And recently, it has more politics than ever, and, in fact, would have died of politics if the European war had not been administered as an antidote. But all such adversity has not ruined our merino foundation, and if it is not held open to bombardment by free importation after the war, we shall have new structures reared upon it, not only in the great interior range States, but in the forests of California coast, foothills, and mountains, and on the farms of California valleys, which will be greater than anything achieved in the past. Therefore we need in California all good breeds of sheep, not only for their own sakes, but for their values, as they are brought upon our enduring merino foundation.

FARM LOAN BOARD MEETING.

THE United States Farm Loan Board, the group of men which will bring the new legislation on mortgage credits under government auspices into operation, has telegraphed that it will hold a meeting in Sacramento on September 9. That will probably be the only meeting held in California as the Board is in a hurry to get back to Washington and to work on organization of its undertaking. Its chief object in swinging around the circle is to get points on the location of the twelve district land banks which it is empowered to establish. It will still probably be several months before the machinery for making loans will be in operation. The members of the board were named and described on page 127 of our issue of Aug. 5. The Orange Judd Farmer gives them this send-off:

The federal farm loan board includes a practical farmer and farm banker, an excellent lawyer, a mortgage investment expert and a leading farm expert and writer, together with the secretary of the treasury as an ex-officio member. These men will make a fine combination.

Those who wish to see and hear these men must look out for announcement of hour and place of meeting in the daily papers. Some close attention may need to be given to this matter for it will be the closing day of the State Fair and the Admission Day holiday and it will be easy to overlook things in the crush at the capital—if the trainmen do not stop the world before that date.

Queries and Replies

By the Editor

INQUIRERS GIVE FULL NAME AND ADDRESS.

Top Grafting Almonds.

To the Editor: I have about 300 soft-shelled almond trees about 23 years old. Can I have them grafted to French prunes? The trees are very thrifty but do not bear well. There is no local market for almonds, but a good market for prunes. What time of the year should the work be done?—D. M., Porterville.

If your almond trees have good trunks, free from sunburn and decay, they will carry new tops of prunes very well. The grafting should be done a little before the new growth starts, probably about February in most valley places. Put several scions in each tree, working in the branches just above the main forking.

Peppers Going Off Below.

To the Editor: I have pepper plants that have done finely until the peppers are about half grown, and then the vines begin to die. The roots get dry and break like a stick. The upper part of the vine stays green quite a while after the roots are dead. Last year they had lots of manure. Some I watered quite often and some I did not water at all, but they died just the same. This year I have put no manure and have watered about four times since planting. They were all transplanted. Can you tell me the trouble and a remedy?—W. C. M., Newman.

You have a ground trouble, either a root-destrorying organism or alkali, to deal with. The former is usually indicated by a wilt of the whole plant. Alkali is more apt to act as you describe. For both root-fungi and alkali the escape is to run away rather than to try for remedies. Try a new piece of land.

Pollination of Walnuts.

To the Editor: I have a walnut, supposed to be the Placentia, which bears well. I have another supposed to be Franquette which blooms very late and the nuts most all fall off when the size of peas—for lack of fertilization I think. Is there any variety that could be budded on that would bloom at same time and assist in fertilizing—or what could be done? The trees are 10 years old, good growth and thrifty.—W. V. R., Gridley.

There is very little accurately known about pollination of walnuts. Our own limited observation indicates that it is not necessary to have the catkins coincident with the pistils. We have reason to believe that the pollen hangs around and is effective for a considerable time. If we had your conditions we should jump free from the pollination problem and graft over the whole tree of the suspected Franquette with scions from the suspected Placentia and thus get two good bearing trees instead of one. If you can get good Placentias you do not need to worry about losing bad Franquettes.

Mites on Almonds.

To the Editor: I am sending you an almond twig. Is this what is called the red spider? I saw in the Pacific Rural Press some time ago that the spider made its appearance about the first of May. This trouble came on the tree last year about the middle of July and this year about the same time. It does not kill the trees, but most of the leaves come off and then the trees leaf out again, and, of course, it checks the growth. I want to find out what it is and what will kill them. If they make their appearance about the middle of July how long before that time can I spray them and kill them?—E. L., Winton.

This is not the red spider (byrobia) which does most of the mite-work on the almond, but it is a closely related mite (tetranychus), one sign of which is that it makes more web than you usually see when the byrobia is on the job. You are mistaken about their making their "first appearance in July." They hatch from eggs which go through the winter on the bark, and, if you are handy with a magnifier, you can see them hatching out very soon after the leaves appear. They are of course very small. Their multiplication becomes more rapid as heat and dry air prevail and you see in July the bad effects on the tree which the mites have been working towards for two or three months. It is to prevent this that sulphur spraying (dry or wet) should begin early, as soon as the weather gets dry and hot. Do not wait for the

tree to look bad because it is then too late for complete protection. Of course it is better to sulphur as soon as you see trouble than not at all, but it is better still never to see trouble.

Nitrate of Soda.

To the Editor: I am thinking of using nitrate of soda for a fertilizer. Will you please tell me the time to use it and the quantity to use and how to apply it?—G. A. G., Arbuckle.

Nitrate of soda is very soluble and should be applied when the plant is ready to use it—that is, when it is already growing. It needs very little water to dissolve and distribute it: too much water will carry it out of reach of the plant and waste it. The time of the year therefore depends upon whether the plant is growing or not, and with a grain or forage crop it is usually best toward the end of the rainy season. With an irrigated crop it can be used at other times, if the plant is ready. For vegetables to reach condition during the rainy season it should be applied early in their growth. The amount to use is very important, for too much is not only a money loss but it may kill plants. The standard prescription is 200 to 300 lbs. per acre; evenly distributed, not bunched around plants.

Improving a Charcoal Pit.

To the Editor: How shall I treat the soil over an old charcoal pit to put it in good shape for garden, or is it in good condition?—G. E. F., Fair Oaks.

There is probably nothing the matter with the soil except the possible burning out of organic matter and the hardening due to this and to the effect of the potash from the ashes of the wood burned in starting. There is nothing detrimental in the particles of charcoal which remain. We should plow in a lot of manure to restore the humus and lighten up the soil, and go ahead as though nothing had happened.

Red-Humped Caterpillars on Apples.

To the Editor: I am mailing you under separate cover some bugs found on an apple tree in my orchard. Please tell me how to get rid of them.—M. T. S., Davis.

The insects are the "red-humped caterpillar." They are often found on fruit and other trees and are very destructive, but are seldom a great pest because controlled by their natural enemies. When a bunch of them appears on a young tree, they can often be conveniently hand-picked and destroyed. On large trees they are killed by spraying with arsenate of lead just as spraying is done for the codling moth, and when they are abundant this should be done as soon as they are observed.

Grapes and Watermelons.

To the Editor: I wish to plant grapes on land on which I have killed all Bermuda grass this summer. Which is the best time to plant vines, early or late in spring? Is it good to plant watermelons between the vines? Is this hard on the vines? Will I gain with watermelons as much as I would afterwards lose on my grapes?—H. N., Dinuba.

We congratulate you on killing all the Bermuda. Our readers would like to know how you did it, whenever it is convenient for you to write out the method. Vines should be planted when the ground is in good condition during the winter, say in February or earlier. If you wait until the almanac says it is spring you may find vine growth starting, and planting should be done some time before that. Watermelons are not hard on vines if the ground is cultivated well until the melons spread and if, after that, the ground right around the vine is kept from baking hard. So far as growth of the vines the first year goes, you need not count on losing anything in the growth of them. Whether you will make anything by growing the melons is a question of selling on which we cannot prophesy. Whether you will make anything on the vines depends more on water in the prohibition amendment than in the melons.

Pruning Trees After Fruit is Off.

[Written for Pacific Rural Press.]

There is considerably more late summer pruning of apricots, peaches, and prunes, this season than ever before. Its maximum benefits will be obtained by those who pruned directly after the fruit was off, but it seems worth while to do it at any time now.

Arguments against the practice are that it removes functioning organs (leaves) of the tree, starving it to that extent; it opens the inside to danger of sunburn; and in some districts may help the disease known as apricot rust.

Arguments for the practice are in general, that it directs all the energy of the tree into the fruit spurs which remain, developing them so they can set and mature fruit; it tends to cause the leaves remaining, to function later in the season, thus making up for the loss of those pruned out; it prevents waste of plant food in developing wood, buds, and spurs which would be pruned out in winter anyway.

Among those who practice apricot summer pruning is G. H. Waters of Pomona. He wrote us July 22: "I think I have demonstrated beyond any question that summer and fall pruning of apricots is much the best. While the crop was very short this year, it was not from any fault of the pruning, but because of heavy rains we had at the time they were in full bloom. Peaches I do not prune heavily in the fall, but usually in January. We are figuring now on pruning apricots in August and September."

Another is J. M. McKinnon of Saratoga. This is the fourth year he has pruned apricots right after the fruit was off; and several of his neighbors visited him this summer to learn and practice his system. He has about two acres of Blenheims 20 years old and 1½ acres seven years old. Since the young trees were later in maturing their fruit, the old trees had been pruned before all fruit was picked from the young ones this season.

From the 3½ acres, he got 16 tons green this year; 17½ or 18 tons last year; about 23 tons in 1914. The year before that, the orchard not having been summer pruned, there was only 11 tons. However, the young trees were too young to bear much that year anyway.

Previous to that, the orchard had been bearing irregularly; and one corner had never borne at all to speak of. That corner is now the best yielding part.

"Since I've been summer pruning, I get strong blossoms and good crops," says Mr. McKinnon.

The older trees do not grow after the fruit is off, but the young ones do. For this reason, the young ones are pruned later, as the new growth is not desired or necessary here. Some cuts on the young trees this summer were an inch in diameter.

No irrigation is given in fall, and the trees have given no evidence of sunburn. No fertilizer at all has been given the apricots.

Peaches and prunes are also pruned right after the fruit is off, though this is so late that the benefit is less noticeable. Perhaps a

light irrigation immediately after pruning would give new lease of life to the leaves without starting new twig growth.

Pruning System.—The same pruning system is followed as is common in winter pruning. On the apricots, the tops are thinned to admit sunshine. Only about three inches of the new growth remaining is left on ordinary limbs. Here is a saving in next year's fruit thinning. The peaches (Salway) are gradually being worked over to apricots and less attention is given them.

The prunes are simply thinned out every year without cutting back new growth, and Mr. McKinnon says he gets new spurs and shoots throughout the trees every year by that system; so new fruit wood is always coming on.

COSTS FOR TWO YEARS OF VENTURA FUMIGATION.

[By County Horticultural Commissioner A. A. Brock, Santa Paula.]

In Ventura county 162,583 trees were fumigated during the fall and winter of 1914-15 with 14 outfits. This cost the citrus growers \$44,033.61, averaging a fraction over 27 cents per tree. In some parts of the county the cost was as low as 15½ cents per tree, while in other districts the cost ran as high as 34 cents, but in most districts the average cost for large trees was 22 to 27 cents per tree.

In the fall and winter of 1915-16, this county fumigated some 132,329 trees at a cost of \$29,903.39. This was an average of 22.5 cents per tree.

The difference in the average for the two years is probably due to the fumigating machines. Almost every outfit was equipped with them in 1915-16; while a number of them were not, in the preceding season.

The past fumigation season was not so heavy as in 1914-15; but this fall and winter, it will be very heavy.

COWS FOR FRUIT—COVER CROPS FOR BOTH.

(Continued from front page.)

too coarse to be relished, though pretty well eaten. Perhaps chopping would improve them. Some of the peas passed through the cows and were relished by the hogs which follow them in the corral. Some of the vetch was mowed, but it was such a mixed mess that very little was made into hay.

Cover Crops Plowed Under.—Not all of the cover crops were fed. A lot of the peas have been simply plowed under, including what was left after the 10-foot strip was taken from the centers for silage. All that was left of the vetch and barley was turned under for available nitrogen and humus. The hay stubble was irrigated from the creek in May before plowing, and on certain gravelly spots where the peas were most mature, a good volunteer crop followed.

Tractor.—Much of the plowing last year was done with a "Caterpillar 30," plowing an acre per hour without stopping even to eat, from 5 a. m. to 7 p. m.

In August the orchard had been cultivated four times with an 11-foot double disk and then once with a weed cutter which threw up moist dirt.

Horses.—Eight horses are kept on the ranch to plow close to trees and haul fruit, etc., but they are fed boughten oat hay and barley principally.

Swine.—Five brood sows are kept in pens on the steep creek banks within the corral. Their pigs follow the cattle. Many are sold as weanlings to neighbors. Some few are fattened. The pig feed is green-cut cover crops, surplus skim milk, ranch kitchen garbage, and a little barley when fattening. The herd boar is a purebred unregistered Poland China.

Poultry for Manure.—A flock of some 2,000 hens has been kept for the same reason as the cows: they were expected to pay for their keep and deliver manure on the ranch

free. Green feed is furnished them from the ranch. Balanced poultry feed is bought, usually by the carload. The poultry, as well as the cows, are far more than paying their way.

Handling and Feeding the Herd.—When not pasturing cover crops, the herd is kept in the wooded, well-drained corral. This is divided by the barn and a cross fence in which a circular concrete tank supplies both divisions.

Alfalfa hay, bought in neighboring fields and stored loose under roof in the corral, is fed ad libitum from July to January. It is cut young and retains its leaves and color. The sheds have extensions so cattle can feed in the dry in winter. The silo stands at the end of a long light concrete-floored barn in which the silage is fed. Cows are in the barn at milking time only, the year around.

Forty pounds of silage a day per cow is fed, in two feeds, if they care for that much. It keeps as well as corn silage and has a good smell. About two feet on top is wasted—the rest is fed about two inches per day maximum. The change from orchard pasture to dry feed is not sudden, because the pasture is pretty dry in late June, and the cows do not worry when shut out of it.

The herd bull has been a purebred Jersey. The one now in charge is a purebred Holstein, Colantha Sir Pontiac Aaggie 6th. He was turned loose in one division of the corral with a number of cows when we saw him, though one of the rules in the record book which hangs in the barn is, "Be careful to record each time a cow is bred."

The cows are all good grades showing blood of all the common dairy breeds. All are tuberculin tested. Three were taken out at the last test.

Calves from the best cows are raised to keep the herd to its usual number. Very few are bought.

Manure Disposal.—A rectangular concrete tank about 12x14x6 feet is imbedded in the sloping ground low enough below the barn so that a four-inch pipe drains liquid manure and flushings into it through a ¼-inch mesh wire screen. A No. 2½ centrifugal pump, run by a 6 h.p. engine, drains the tank by pumping into surface irrigation pipe which leads to the orchard.

For the solid manure from the barn, a scaffold is built out level with the floor far enough so that a manure-spreader is backed up under it. Thus the iron-bodied wheelbarrow loaded with manure is easily run out and dumped direct. Two or three times a week, this is spread in the orchard.

The corrals, which get most of the manure, are cleaned up occasionally, though doubtless there is a great waste by its draining into the creek in winter. However, even then, most of the manure is dropped under cover and can be saved.

Thus the orchard feeds the cows and the cows feed the orchard, and cover crops feed both.

What stocks are you going to have your nursery trees on for next spring's planting?

Peach blight spraying must be done in November.

FEEDING CITRUS TREES FROM MANGER.

[Written for Pacific Rural Press.]

What amounts to feeding and watering orange and lemon trees in a manger is practiced by the National Orange Co. on its 780-acre orchard of 65,000 Valencia, Navel, and Eureka trees near Corona. A "manger" or two per tree is provided in the shape of basins, the tops of whose sides are level, however steep the ground. Each basin is as wide as the spread of the tree and occupies all or about half the space between two trees in the rows as they run up the slope. This leaves the centers between rows running up the slope, free for growth of cover crops. Bur clover, melilotus, and weeds are grown in these centers and cut twice in spring with scythes. The green stuff is simply thrown into the basins, along with prunings, manure, straw, fertilizer, etc. This mulch in the basins keeps them always moist between irrigations so that the roots can come up to the fertilizer.

The first cover crop was being cut late in February, the melilotus averaging six inches over knee deep to a tall man and supporting similar growth of bur clover. It was proposed to irrigate the centers soon after cutting if necessary, to get another growth of cover crop. This second growth having been cut, the stubble would remain unirrigated all summer, forcing the citrus roots to feed in the basins.

The soil is pretty well sprinkled with what seems to be a lava gravel and is the same several feet down. It does not seem to cement, according to Foreman D. Rycraft; though of course it would bake if irrigated and then uncultivated or unmulched. We are not sure of the economy of leaving the centers unirrigated and unproductive all summer, but perhaps there is not water enough available here to grow a summer cover crop without letting the trees get thirsty. Very little mottle leaf was observed on this orchard.

How Much Nitrogen in Clover Nodules?

[Written for Pacific Rural Press by W. M. Mertz, Riverside Experiment Station.]

[Note.—Last week we printed a computation of the nitrogen in mellilotus under the title "Available Nitrogen 400 Lbs. for \$6." The data assumed by Mr. Beinhorn are very far from correct as to the nitrogen content of nodules. We asked Mr. Mertz for correct data, as the Citrus Experiment Station has done more than anyone else to determine cover crop values.]

The question of the relative value of the nitrogen in the tops and the roots of legumes, such as the clovers, is frequently misunderstood. Because of the fact that the nitrogen additions are made by the organisms in the nodules, many people have the idea that all this additional nitrogen remains throughout the life of the plant in these nodules. This is not the case, for the nitrogen derived from the organisms is utilized in the building up of tissue as well in the tops as in the roots, and never becomes very highly concentrated in the nodules themselves.

A number of different analyses of legume roots as compared with the tops, show on the average about one-half the percentage of nitrogen in the roots as compared with the tops. In other words, mellilotus clover that will show a nitrogen content of 3.15 per cent in the dried tops will seldom show over 1.5 per cent in the dried roots. When we reduce this to green weight, the percentages are very much smaller; since these plants at the stage at which they are plowed under usually contain 75 to 85 per cent water. The question of the actual nitrogen content of the legumes themselves was put up to Doctor McBeth, who has made numbers of such analyses. According to him these nodules, after being thoroughly dried, vary from 3 to 8 per cent nitrogen, the latter being found extremely seldom. A 2 per cent nitrogen content as the nodule naturally exists would be extremely high.

A 20 per cent content would be absolutely impossible. Even were the nodules to be considered as absolutely dry weight, they would have to be equal to chemically pure sulphate of ammonia to actually contain that amount of nitrogen. In fact most of the high-grade nitrogenous compounds are much lower in nitrogen than this. Free nitrogen being a gas does not exist in the form of fertilizer.

WALNUT PROSPECTS.

[Written for Pacific Rural Press.]

With the exception of 1915 this year's crop of walnuts in the State is expected to be the heaviest on record, according to the California Walnut Growers' Ass'n.

From present prospects this year's crop will amount to about 12,000 tons or 18 to 20 per cent less than last year, which was an unusually good one from a quantity standpoint. The nuts this year are of a very good quality; and while the price will not be set till some time in September it is expected that it will be somewhat higher than last year.

The association places estimates by counties for the coming crop as

follows: Santa Barbara, 80 per cent with very little blight; Ventura, 100 per cent; Orange, about 80 per cent; El Monte District, 65 to 70 per cent; Puente District, 50 per cent increase over last year because of new orchards that will come into bearing; Whittier, about 85 per cent.

The work of identifying the nuts of the association will be continued this year by the continued use of cartons in which the nuts are retailed under the Diamond Brand. Last year 3,000,000 pounds were disposed of in this way but in 14½-ounce packages instead of pound cartons as will be done this year. A charge of one and a half cents per pound is made to cover additional cost of packing and shipping, but this is saved to the retailer in saving of breakage and labor.

Harvesting of nuts has commenced in some districts already, the crop being ten days to two weeks ahead of last year and expected to be of unusual quality.

BUR CLOVER IN PRUNES.

To the Editor: I enjoyed reading your article Aug. 12 on "Cover Crops" or green manure for fertilizer.

I have one-half acre that was not plowed last year and now the ground is covered with bur clover seed in the bur. I intend to sow it on some clay loam soil in the Sacramento Valley. I am sweeping it up and of course get a great deal of other seed and dirt with it. Will that make much difference? I am planning to sow it Labor Day. Is that too soon? How thick would you sow it? about how many burs to the square foot? Each bur contains four or five seeds. Would you harrow or cultivate it in or leave it on top? The land I will use it on was set out to prunes last spring. Would you sow the seed close to the tree or stay away a few feet?—H. R. H., East Oakland.

We would shake the bur clover burs in a basket in order to let them rise to the top of the dirt and heavier weed seed. This will avoid sowing a lot of stuff that you will not want on your land. However, the bur clover is a rank grower and would probably overcome most other weeds.

Labor Day is not too soon to sow it, if the seed bed is prepared—the finer the better. Ten or fifteen burs to the square foot should be enough, for it spreads considerably.

It would be best to cultivate it in, for unless you have irrigation it would be a couple of months before it can start, and it might as well have as good a chance as you can give it reasonably. It would probably not grow very tall this winter, but will make considerable growth early next spring.

Sow it all over the ground. If you are going to let it grow next summer you will injure your trees severely unless you give an extra amount of irrigation.

Suckers should be pulled from deciduous fruit trees in summer while it may be done quickly and before they have robbed the fruit wood.

We are more likely to get uniform horticultural laws if we insist on candidates pledging their support before we vote for them.

MELILOTUS INDICA

(Yellow Sweet Clover)

The best and cheapest seed for **COVER-CROP**.

Plant early for maximum benefit.

The seed we offer is scarified, insuring high germination.

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FOR CITRUS AND DECIDUOUS FRUIT TREES



ANALYSIS:—Curd Soap, 50%; Bicarbonate of Soda, 0.5%; Carbonate Soda, 37.5%. Balance Moisture.

FOR ALL ORCHARD PESTS.

SOAP SPRAY—An effective soap spray used in the proportion of one pound of powder to six or eight gallons of water with 200-pound pressure. Not harmful to trees or fruit if properly used.

ERADICATES SCALE.

MERMAID SPRAY POWDER will kill this form of pest when applied conscientiously with the above proportions at the right time. You will also note its effectiveness towards reducing red spider while spraying for scale.

COST—A cheaper and purer soap powder that is prepared with accuracy. Not the cheapest—but the powder that does the work.

UNIFORMITY—Guaranteed to be at all times uniform and without lumps and to dissolve with absolutely no waste, thus saving time and money by not having your spray machine stopped to clean out impurities.

IT WILL PAY YOU—to investigate Mermaid Spray Powder, and to use it, no matter how large or small your orchard.

WRITE US TODAY

We will cheerfully give reference from Professional Sprayers and Growers throughout Southern California who have tried all other Powders and have found **MERMAID SPRAY POWDER** without an equal.

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SAN FRANCISCO

"Spraying Makes Healthy Trees"

Squirrels and Wild Oats.

I have just read that the farmers in Ventura are trying to get rid of the ground squirrels by using steel traps. With sulphate of strychnia and saccharine on barley, I have killed every squirrel on my Santa Clara county ranch of 170 acres in three weeks, where half the place was literally crawling with them. Three times I was compelled to do this; as I do not live on the place, and am often away for six months at a time. The neighbors were careless and restocked me. Eventually the adjoining places went to work in earnest. They soon cleaned them all up and now we are all rid of them.

It takes a little time and stick-to-itiveness to do it. The main thing is to stay with the job. A man must put out the poison regularly and often, just as long as there are any squirrels to eat it. I put it out in plenty every other morning.

Take 20 pounds of good clean barley, one ounce of strychnia sulphate and one drachm of saccharine. Dissolve the strychnine in one pint of hot water together with the saccharine. Stir about one tablespoonful of cornstarch in a little cold water and be sure to get all the lumps out. Pour this into the water and stir and cook till you have a thin paste that will run freely. Pour this over the barley and stir until all the grains are coated. Stir every few minutes while cooling and drying to prevent lumping. It is ready to use. Where there is no stock to get it put about a teaspoonful in a place in their trails and near the holes. Where they are thick put plenty the first time and then put out regularly. Where the poison is still there it is sure evidence that the squirrels are all dead and no more is needed. Where it is gone put out more. Follow these instructions and the squirrels will all disappear.

Where there is stock throw a handful into the hole and it is a good idea to put a newspaper in the mouth of the hole after putting the poison in. Above all things do not cut down the amount of barley used—20 pounds to the ounce of strychnine. Too much strychnine makes the squirrel sick and he throws it up and will not eat any more.

Squirrels will carry off all the wild oats and large grass seeds on a range and that is why the fox tail is supposed to run the grass and oats out. Wild oats will hold their own against anything if they have half a chance.

In very sandy, loose soil every squirrel can be killed by running the hole full of the loose dirt and making a mound a foot or so high over it. The loose dirt runs in on the squirrel when he tries to dig out and fills the hole behind and in front and smothers him.

It is a shame that the supervisors of the several counties are not doing their duty in the matter of exterminating this expensive pest. In some of the counties they were almost extinct when the boards of supervisors stopped the work and all the money that was spent has practically been wasted. The squirrels are getting as thick as ever in many places; and it will take a large sum to do the work over. Why farmers will be so shortsighted and permit the squirrel to eat crops, I can not see. It costs so much less to kill them than it does to feed them.

I have written the enclosed to let those that really want to kill the pests know how to do it and how easy it is. If you think that there is anything in it that will be helpful to the fruit men and other ranchers you can probably write something that will take less space and be more readable. W. F. Chipman.

Wild Verbena---Knot Weed.

To the Editor: I am sending two weeds which I have numbered Nos. 1 and 2. They are taken from a new field of alfalfa sown this spring. There are great patches of No. 1 that grew as tall as the alfalfa and I think has crowded it out in spots; No. 2 not so bad. Kindly inform me if these weeds will winter-kill and if not what means best to employ to rid the field of them.—C. N. L., Visalia.

[Answered by Prof. P. B. Kennedy, Berkeley.]

No 1 is what is known as Common Vervain Verbena prostrata. These plants are particularly conspicuous at this time of the year because they are able to remain green while most other plants growing around them have dried up. The flowers en masse at a distance at least, look not unlike a patch of alfalfa. Stock do not seem to care for them at all, but I hardly consider them poisonous, just simply not palatable. The roots are perennial and quite hardy, so that it is not likely they would winter-kill. The plants are found along gravelly river banks and waste places throughout the country, and where abundant the seed could quite readily be carried by means of irrigation water to the alfalfa fields. It is not likely that the weed has spread over the entire area of your field, and therefore if you could sin-

gle out the patches, cutting that portion of the field even at the expense of some of the alfalfa before the plants go to seed, you would prevent further trouble from that score. Cutting the plants off well below the ground with a grub hoe, would, I believe, eradicate them as they are not pernicious weeds like morning glory and the like. Search in the neighborhood for the source of the pest along the ditch banks or the near-by streams and destroy the plants in that region so as to prevent their going to seed and giving further trouble. If the weed has taken a decided hold in your alfalfa, it would be necessary to replot the land thoroughly, secure a good seed bed and a strong stand of alfalfa, and you should have little further trouble. If an occasional plant should appear in the field, pull it up while the ground is soft, then plant young, and before it has taken a firm hold.

No. 2 is "knot weed," "goose weed," "wire grass," "wiry smart weed," "door weed," (Polygonum aviculare), for all these names are given to this common weedy plant found almost throughout the entire United States. Probably you need not give very much attention to this

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plant. It would hardly be possible to eradicate it entirely when it seeds abundantly in every dooryard and street in the country. It is not likely to give you trouble unless the alfalfa should not receive proper moisture, or is over-pastured. In this event, the knot weed would be sure to become the aggressor and take advantage of the alfalfa and might crowd it out. In some parts of the country it is an annual and in others a perennial. In California it seems to act usually as a perennial. It is of account as a pasture plant, however, especially for sheep, as it has fair nutritive value. Cultivating the alfalfa crosswise and lengthwise will help to destroy the knot weed and encourage the alfalfa to a thicker and stronger growth, thus producing a dense shade which would crowd out the knot weed to a large extent.

[This knot weed is also of some value in pasturing horses, which take to it freely.—Eds.]

FLIES IN MANURE.

To the Editor: Please advise me as to the practicability of spraying stable manure with some chemical that will not injure the manure, yet will destroy the eggs or larvae of the house-fly. The manure is piled outside my barn, and its removal would be inconvenient for several months, because of the fact that all of my land is occupied by growing summer crops.—W. H. C., Lompoc.

[The U. S. Department of Agriculture recommends borax for this purpose. "Either 0.62 pound of borax or 0.75 pound of calcined colemanite (crude calcium borate) kills the maggots and prevents practically all of the flies breeding in 8 bushels of horse manure." Since the effects of this had not been thoroughly tried out on all crops, they recommended not over 15 tons of treated manure per acre as a rule. Sprinkle the borax or colemanite with a fine sieve mostly around the outer edges of the pile, and wet it with two or three gallons of water per 8 bushels. Then sprinkle a little on the daily additions to the pile. A number of stockmen are using gypsum to prevent flies. This adds fertilizer value to the manure and fixes the nitrogen so it is not evaporated.]

FARMERS IN PUBLIC AFFAIRS.

To the Editor: In your editorial of August 5, you mention that the farmer that understands his business and is equipped for farming, being better off than his city brother. I fully agree with you. There is a side to the farm that I should like to call your attention to, that means much to me viz.: freedom of thought and action. The city or town dweller has to be very careful in this respect. The people of Napa County will have a chance to vote for a new charter this fall. Derel Beard, a farmer, started the ball a rolling by going around to the different farm centers and talking new charter. D. J. Brown, also a farmer, a veteran of the civil war, fired the first gun in one of our local papers. Other farmers have since taken up the cudgels in its defense and are working for it. W. H. Murry, also a farmer, started a tax papers' association. There are at least a dozen farmers working for it. It has been a great success.

Napa.

Chas Blom.

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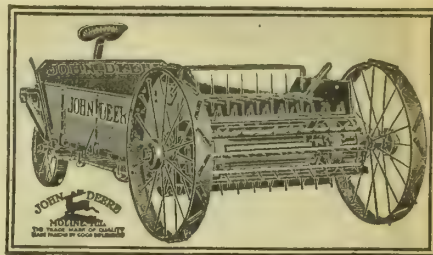
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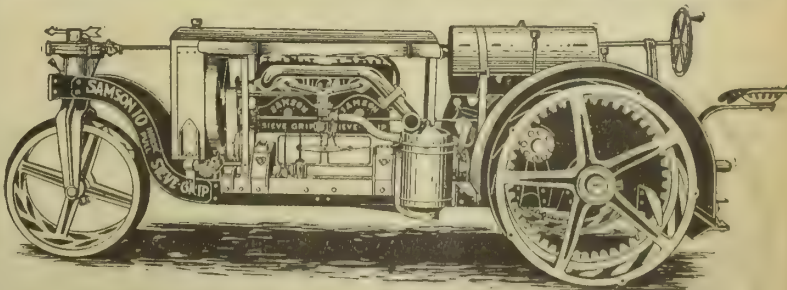
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Mechanical Power on the Farm.

PUMP ON DESERT HOG RANCH.

[Written for Pacific Rural Press.]

What would hog raising on alfalfa in the desert be without a pump? Well, one or two pumps aren't enough on the Sierra Madre ranch in Antelope Valley, Los Angeles county. When we visited them in a snowstorm last March, they had nearly 300 hogs and 110 acres alfalfa including some recent sowings. They were fencing 240 acres, aiming to raise all their feed for the great purebred Berkshire herd which they had recently started with 40 head.

Alfalfa is pastured in small fields, 15 acres having been fenced for the purebred bunch. Twenty acres are in feterita, eight in sudan grass, and 14 in wheat and barley.

Antelope valley is a desert beginning to bloom with alfalfa, mostly in smaller acreages than that on the Sierra Madre ranch. To water the crops, only wells are available.

One well, equipped with a 20 h.p. gas engine and a Byron-Jackson centrifugal pump, supplies 120 inches of water which is run through nearly two miles of 12-inch pipe in four lines across the place. Half of the pipe are glazed tile, the other half concrete, and all are fitted with Kellar-Thomason valves, etc.

About 70 acres are irrigated from this pump, which runs night and day. The engine stopped while we were there on Thursday, for lack of gasoline. It had run without stop since the preceding Sunday.

The engine cools itself by pumping water through the cylinder jacket by means of a diminutive centrifugal. Its first explosion is set off with a match—a magneto supplies the spark for the rest. An emery stone is so placed that it also may be hitched to the engine.

Reservoir.—Since 120 inches cannot be handled all the time, a willow-bordered reservoir 200 feet square and five feet deep holds the output temporarily. The willows on this and the cottonwoods on two other reservoirs, not only beautify the desert landscape and furnish a landmark, but also bind the banks with their roots and break the soil-washing force of wind and wave.

An electric motor at the house well furnishes 30 inches for livestock, home use, and a surplus for irrigation of the small orchard, garden, and surrounding fields.

ORCHARD TRACTORS SATISFACTORY.

[Written for Pacific Rural Press.]

"If I were going to buy a new tractor for farm work, and didn't know any of the different makes, the first thing I would investigate would be flexibility in handling. In orchard work, a tractor should be able to make short turns," says one of the Boynton Bros. of San Jose, who have used three makes of tractors within seven years and now are using a Yuba 12 and Invincible 8.

"Tractors under 10 h.p. are not satisfactory in the long run for orchard work; and all orchard tractors should have a large steering wheel and independent wheel drive. The Yuba does all kinds of orchard work on 170 acres; the Invincible

is used on 45 acres; and some tractor road work is done.

Expenses.—"On the Yuba, we have found that we use 18 gallons distillate in 10 hours. Repairs cost more than we expected, but improvements are helping to lessen the upkeep cost. There was very little wearing out or breakage the first year. As for bearings, I think all reliable tractor companies are using the best materials at all points as fast as experience demonstrates what is best.

"We use six horses, to haul fruit, plow close to trees, haul out prunings, etc. Horsework is such a poor substitute for the tractor that we are sorry it is necessary to have a team.

HAS'N'T FOUND SATISFACTORY SMALL TRACTOR.

[Written for Pacific Rural Press by J. R. Johnson, Ontario.]

My experience with tractor engines is that unless you have a large piece of land the tractor will not pay as an investment. You must have a good man who understands how to operate a tractor of the particular make you may buy; and he is expensive. Also the wearing parts are too expensive for the small landholder. I believe that in the near future the small tractor will be more practical and cheaper, so it will pay to own one; but as yet the depreciation is too great.

For farming on a large scale where you can make the tractor take the place of 20 or more horses it will pay if you will get a good one that will not always be laid up for repairs when you want to use it. But for four to six horses, I believe the farmer will be better off to stay with his horses until the small tractor is improved and cheapened so the small farmer can afford to buy one.

Used Tractor Hard.—I have used a 30 h.p. tractor a little over one year. It has cost me for repairs \$600. I used it very hard. I plowed, made ditches, leveled land, ran a threshing machine, and did hauling with it. The expenses are not out of the way for the hard use we put it to.

AUTOMOBILE MOUNTAIN RULES.

(1) Drive slowly. Winding mountain roads are not valley boulevards.

(2) Blow your own horn. There are many places where an oncoming car is hidden in trees or around turns. A warning may save one or the other from backing to a passing place; and more important, may prevent an accident.

(3) Keep to the right on turns.

(4) Give the other fellow a little the best of every situation that arises. If a car is approaching, don't try to beat him past a passing place, but wait.

(5) Don't be a road hog. If a car capable of climbing faster than you overtakes you on a grade, give him the road. Expect and demand the same courtesy from one slower than you. Many mountain accidents result from disregard of this rule.

(6) Don't get excited. Most mountain roads of California are not narrow enough to be dangerous. The

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altitude and the steep descent at the side of the road mean slower driving, that's all. Hundreds of automobiles are driven with safety over these roads every week.

(7) Be sure your car is in good condition. Be sure that the brakes are adjusted evenly and the break-lining good.

(8) Never leave the car standing

with only the brakes to hold it. Shut off the power and mesh the low gear.

(9) Use the motor as a brake in descending grades. Mesh the gears in low and shut off the ignition. This cools the motor, saves the brakes, and prevents the driver from losing control of the car. Many mountain accidents are the result of burned-out brakes.

POWER NOTES.

State Fair Tractor Demonstration 9:30 a. m. to 1 p. m. Sept. 4.

The bean crop in Sutter basin depends on six big pumps which drain off the overflow water early in June.

Private tractor demonstrations every afternoon through the State Fair.

A tractor demonstration at the

Cal. Fruit Growers' Convention, Napa, Nov. 15-17, is planned.

Los Angeles Traction and Implement Dealers' Ass'n Second Annual Tractor Demonstration, Puente, five days, Sept. 19-23.

Twelve tons of grain per trip are reported to have been hauled by the Plaskett brothers to Yuba City by means of a tractor.

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SECOND ANNUAL TRACTOR DEMONSTRATION

SEPTEMBER 19-20-21-22-23

**THE LOS ANGELES TRACTION AND IMPLEMENT
DEALERS' ASSOCIATION.**

General Agricultural Review.

GRAINS AND FIELD CROPS.

Nevada farmers are harvesting a good wheat crop.

Ventura beans look as good or better than last year.

Minnesota and Dakota spring wheat has been severely affected by black rust.

Wheat has sold at \$2.05 and barley at \$1.56 in Monterey county, it is reported.

A Tulare county wheat crop of 1,200 sacks recently sold at \$2.01 per hundred.

The Stockton potato market has been easier because the growers are digging their crops.

A Merced barley grower recently received \$1.57 3-4 per cwt. on the ranch for 12,000 sacks.

Stockton is shipping grain to Europe as fast as cars can be obtained to ship it via New York.

Foothill tomatoes from Butte county are proposed for shipment to inter-mountain States by express.

The beet sugar factory of Glendale, Ariz., which was to be removed to San Diego, will go to Stockton for 1917 beets.

The Kern county rice crop is estimated at 50,000 sacks, averaging 20 sacks per acre on 2500 acres around Wasco.

Turlock Melon Day is to be celebrated Sept. 6 with parades, agricultural displays, etc. It has been a "million-dollar season."

Corn crops in the central southern States have suffered by drought but have improved in the Missouri, Ohio, and upper Mississippi valleys.

Tomato harvesting has started around San Leandro where a half crop is reported due to dry weather. Most growers do not have irrigation.

The U. S. Warehouse Act which became a law August 11, permits warehouses for grain, cotton, wool, etc., to issue uniform receipts which will be readily negotiable by reason of their uniformity and because the Government assures the correctness of grades, etc.

The newly elected directors of the Pacific Rice Growers' Ass'n have completely reorganized it and hope to market 80 per cent of the coming estimated 2,500,000-bag crop this season at 2 1/2 per cent commission. An appointee of the State Market Director is to be a member of the Executive Board.

DECIDUOUS FRUITS.

Contra Costa pear prices have been the best ever received, being up to \$3 per box net. Increased planting is expected.

Peach growers are advised by the Ass'n that they may deliver to whatever Ass'n packing house is most convenient, regardless of the recent postal card notices.

The San Diego Farm Bureau Aug. 5 discussed the provisions of a proposed law to keep bees off from fruit by removing the stands from the vicinity while fruit is ripe.

Peach growers who signed contracts with the Ass'n are reported to have sold on the tree or leased their orchards to outsiders. This will necessarily cause trouble, as it is urgent that all contracts be lived up to.

Opening prices made by the Cal. Peach Growers Inc. to the trade range from 5 1/4 cents for standard yellow, to 7 1/4 cents for extra fancy yellow and Muirs. Fancy peeled peaches are quoted at 9 cents. These prices are guaranteed against decline until Dec. 31, but not against a rise.

An effort is being made to scare apricot and prune growers into selling, by stating that the export market is demoralized by English seizures of dried fruit, selling it for army use at less than California prices and not turning back even that money. It is evident that the Britons appreciate our fruit and that when we are scared into not shipping any more for them to seize, they will come here to buy it, which is about as good.

W. H. Volck, Horticultural Commissioner of Santa Cruz county, reports about a normal apple crop for his district, Newtown Pippins being a little better crop as a whole than Bellflowers. Some apple mildew and woolly aphis has been experienced in the apple orchards this year but nothing unusual. The county apple grading ordinance is being enforced this year, all apples having to pass the maturity test before being loaded on the cars. Next year more

TIRE PRICES

Goods shipped to all points C. O. D. Money refunded on goods returned intact within one week.

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30x3	6.95	1.85	2.10
30x3 1/2	8.95	2.10	2.35
31x3 1/2	9.45	2.15	2.40
32x3 1/2	9.95	2.25	2.45
34x3 1/2	10.95	2.30	2.55
36x3 1/2	12.95	2.40	2.75
38x4	13.20	2.50	3.10
31x4	13.85	2.55	3.20
32x4	14.05	2.95	3.30
33x4	14.70	3.10	3.40
34x4	14.95	3.15	3.50
35x4	15.95	3.20	3.60
36x4	15.95	3.30	3.70
34x4 1/2	20.25	3.85	4.30
35x4 1/2	20.85	3.95	4.35
36x4 1/2	21.25	4.10	4.50
37x4 1/2	21.90	4.15	4.60
35x5	23.65	4.70	5.20
36x5	24.95	4.90	5.35
37x5	24.90	4.95	5.45

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EFFICIENCY



Every report which we have been able to obtain of subsoil work done during this past fall, has shown extra large gains in crop returns. Our offer of last year still holds good—to give a subsoil plow to any rancher having 500 or more acres for one-half of the increase in crops, for one season only. If we have nerve enough to risk \$300.00 to \$600.00 on this work, what is there in it for you?

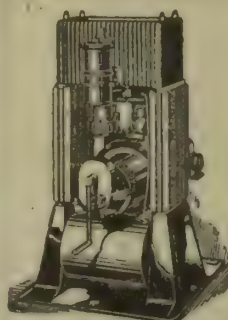
THINK IT OVER.

The Killefer Manufacturing Co.

2209-21 Santa Fe Avenue,

Los Angeles, Cal.

WOODIN & LITTLE
HYDRO PNEUMATIC WATER SYSTEMS
PUMPS
WHAT IT WILL DO!
WOODIN & LITTLE PUMP HOUSE
PUMPS. GASOLINE ENGINES. WINDMILLS. FITTINGS



Uni-Lectric
GASOLINE-ELECTRIC UNIT
LIGHTING SYSTEM

Electricity for Farm Homes

At one-third cost of juice from Power Company, (thus includes interest on cost of plant). It is the simplest and most economical plant on the market. No Batteries - No Switchboard - No Rheostat. Will operate 50 lights 7 1/2 hours for 11c. Will also operate electric fans, irons, small motors, etc. If your buildings are not wired, send us plans and we will give you full instructions so that you can wire them yourselves. Material furnished at lowest cost.

Karl A. Hedberg Co., Inc.

Electrical Engineers.

104 Clay St.,

San Francisco, Cal.

vigorous enforcement will be practiced through inspection of fruit before picking.

CITRUS NUTS, SEMI-TROPICAL.

Fresno fig packing companies tried to cut the wages of their packers, but a strike quickly brought most of them to terms.

Over 100 olive growers have signed with the new Cal. Associated Olive Growers, representing about \$100,000 subscriptions.

A Los Angeles county orchard inspector is defendant in a suit for attempting to force citrus growers to fumigate rather than spray.

Officers of the Cal. Associated Olive Growers are J. C. Martin, Jr., President; R. L. Underhill, Secretary and Manager; E. J. Harper and James Mills, vice presidents.

The Hillside Orange Ass'n of Tulare County has been holding Valencias on the trees for better markets than could be obtained in June when they are usually harvested.

The Central Lemon Ass'n of Orange county is paying its members \$40,000 for lemons picked between mid-April and mid-May. They were held in storage for the summer market.

Exports of walnuts from Grenoble, France, to the United States were in 1914, \$123,887 worth in shell and \$349,261 shelled; in 1915 greatly increased to \$269,488 in shell and \$508,488 shelled.

The Cal. Associated Olive Growers have asked permission of the State Corporation Commissioner to build processing plants in San Diego, Sacramento, and Butte counties. Local and State labels will be used on the product.

According to Horticultural Commissioner Carl Nicholls of San Luis Obispo county there will be in the neighborhood of 120,000 pounds of almonds harvested in that county this fall. The total acreage now planted to almonds there is given by him as 2761, and the present prospects are that between 2,000 and 3,000 acres will be planted next season. There were 1139 acres planted last spring.

GRAPES.

Subscriptions to the St. Helena Vintage Festival to Aug. 25 totaled over \$2300.

Labor Day at St. Helena will be celebrated with a big floral and industrial parade and band music.

Kings county plants of the Associated Raisin Co. will seed and pack over 500 tons of Fresno county raisins.

H. H. Harding of Fowler brought in a bunch of Thompsons which weighed 7 pounds 12 ounces. A still larger bunch of seedless grapes will be exhibited at the Fresno Fair.

Hard thunder showers around Reedley have been damaging drying raisins and alarming Malaga growers, according to H. H. Miller.

Malagas should test 18 per cent sugar before being shipped, according to Horticultural Commissioner F. P. Roullard of Fresno county.

Effects of last winter's experimental spraying for mealy bug on Kings county grapes are to be closely checked up during raisin drying this fall.

The 6000 acres of Sutter county grapes are threatened with phylloxera. Horticultural Commissioner Stabler is recommending resistant roots.

Tokay shot grapes must not be shipped this season from San Joaquin county, according to instructions issued by Horticultural Commissioner H. H. Ladd.

Malagas will start from Kings county about Sept. 10, according to Horticultural Commissioner F. K. Howard. Present cool weather is helping sugar content.

MISCELLANEOUS.

University of Nevada at Reno opened Aug. 28.

Interest on the \$18,000,000 road bond issue is \$784,572.

Fresno District Fair grounds are to be a garden of shrubbery and flowers this year.

The P. G. & E. expects to spend \$250,000 constructing tunnels, etc., to increase Placer county irrigation facilities.

Life is too short to pull or burn stumps



With \$5 worth of either of the Giant Farm Powders one man can

remove more stumps in five hours than he could pull or burn out in as many days. And a boy with a team can

clean up the pieces in another five hours. There's no way in which land can be cleared so easily, quickly and cheaply as by using one of the

GIANT FARM POWDERS

STUMPING — AGRICULTURAL

Eureka Stumping Powder is for dry work and Giant Stumping Powder is for blasting stumps in wet soils. These Giant Powders get out the small stumps at the lowest cost and save many dollars in blasting large stumps.

"I used eleven tons of your powders at Samuels, Idaho," writes H. F. Samuels. "The stumps removed were from eighteen inches to five feet in diameter. We had the very best satisfaction."

The Giant Farm Powders are made especially for blasting western stumps and for other farm work. Be sure you get the genuine.

Five Books Free Send for Them

If you have not read the illustrated Giant books, "Better Stump Removing," "Better Orchard Tillage," "Better Boulder Breaking," "Better Farm Tillage," and "Better Ditch Making," send for them now. You will find them worth many dollars to you. Mark in the coupon the books that you prefer and mail it today.

THE GIANT POWDER COMPANY, Con.

"Everything for Blasting"

Home Office: SAN FRANCISCO

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Send me your illustrated books on the subjects which I have marked X.

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For Water Deep Under The Ground

Jackson Deep Well Turbine Pumps give continuous and efficient service. They do not get out of order as they have no valves or plunger rods. Very little care or attention needed as they are oiled from the surface. Are much lower in cost than other types of deep well pumps when the expense of dug pits, cribbing and timbering is reckoned. They raise water from the very bottom of the well, thus eliminating heavy vacuums and delivering all the water the well yields. They develop slow wells and increase their flow.

Like all Jackson Made Pumps These Deep Well Turbine Pumps Are the Very Best Pumps Made for the Purpose—They are Dividend Earners, Not Expense Makers

Whatever your water problems may be our Expert Pumping Engineers will help you out free of charge—write

BYRON JACKSON IRON WORKS, Inc.
357-361 Market St., San Francisco, Cal.
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and Visalia, Cal.
Works: West Berkeley, Cal.

Write for Catalog No. 47 F

A Better Make Not Made

Wanted 30,000 Men

FOR HARVEST WORK ON IMMENSE CROPS OF

Western Canada

WAGES \$3.00 PER DAY AND BOARD

CHEAP RAILWAY RATES FROM BOUNDARY POINTS

Employment Bureaus at Winnipeg, Regina, North Portal, Saskatoon, Ft. Frances, Kings Gate, B.C.; Coutts, Calgary, Alberta.

No Conscription—Absolutely No Military Interference.

For all particulars apply to the following Canadian Government Agent—

GILBERT ROCHE

Canadian Government Exhibit,

San Diego, Calif.

END the Morning Glory PEST with Nonpareil

"We have given Nonpareil a very good trial and find that it destroys not only morning glory but also horse radish. We consider it a thoroughly satisfactory weed exterminator."

—Luther Burbank.

If you want full profits from your crops you should use Nonpareil. It is easy to apply and economical to use—one gallon is sufficient to kill 250 plants. It does not injure the ground but acts as a tonic. It is the most successful weed killer known. Write today for interesting folder.

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625 California Street

San Francisco, Cal.

Fruit Presses

Make Your Waste Fruit Profitable

Cider and Olive Oil Making Machinery

Write for Circulars and Information

California Press Manufacturing Co.

409 Sixth Street,

San Francisco

Publicity for Clean Milk Producers.

[Written for Pacific Rural Press.]

In view of the hard feelings which have existed for years between the producers of whole milk and the various civic organizations who have taken it upon themselves to stand between the producer and consumer in behalf of pure milk, it is gratifying to know that a seemingly fair standard has at last been put into practice by the city of Los Angeles for the scoring of market milk.

In the past it has been the practice to decide almost exclusively upon the bacteria count as to the quality of market milk. But beginning with the present year this method has been replaced by a milk score card furnished by the U. S. Department of Agriculture in which bacteria, flavor and odor, visible dirt, per cent of fat, solids not fat, acidity, bottle, and cap are all considered.

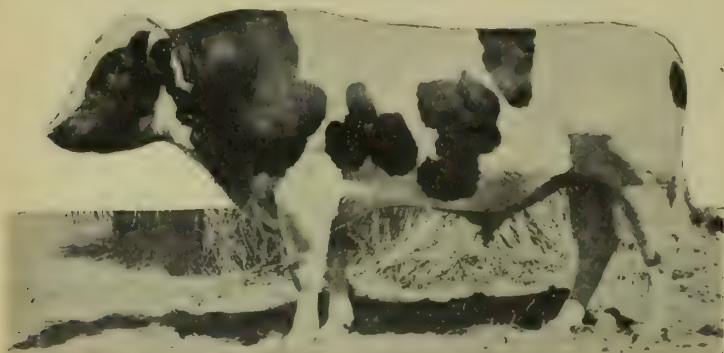
The method of procedure is to take samples twice a month from the wagon of each milk distributor, whether large or small. These are scored by the City Health Department for a period of four months, at the end of which time chemists from disinterested cities are called in to score each dairy's milk and compare such scorings with the previous ones.

The average result of these scorings for four months is then given out to the public press and given as wide publicity as possible, in order that those producing a clean milk may benefit financially, and thus encourage others to use better methods.

That the work may be fair to the various classes of milk put on the market, the scoring is done by classes, first the certified, then the special or guaranteed milk, next the pasteurized, and lastly the raw class.

All classes are scored by the same score card, however. The results of the first four months as recently published in the daily press indicated what has so long been thought by practicable dairymen, that the dairyman with a personal sense of cleanliness will produce good milk where another less particular person with a huge outlay of capital will fall down; for many of the raw class had scores equally high as the certified plants, contagious diseases not being considered.

The score card allows 35 points for bacteria count, 25 for flavor and odor, 10 for visible dirt, 10 for fat, 10 for solids not fat, 5 for acidity, and 5 for bottle and cap.



PRINCE BEAUTY PIETERSE SEGIS.

One of Frank M. Helm's Herd Sires. His Dam, Belle Segis, is a 31-lb. Daughter of King Segis. Many cows in Mr. Helm's Sale, Sept. 12th, Will Be Bred to This Famous Sire.

SHEEP FOR ALFALFA AND STUBBLE.

To the Editor: I am thinking of starting a small flock of sheep and would like to know which breed is most suited to my conditions here. I have 10 or 15 acres of alfalfa and 200 acres of stubble each year. I thought of getting about 50 or 75 good young ewes. Would expect to derive profit by selling the lambs and wool.—T. T. G., Merced.

Bishop Bros., San Ramon: I think any of the Down breeds are suitable for the small farmer. It is their natural environment. They have been produced by the small farmer to suit the needs of the small farm.

Of course to my idea the Shropshire is the best of them all. These sheep combine qualities of wool and mutton which are always in demand and the produce is always salable no matter how small the quantity.

Two other very important considerations where advantage must be taken of every available source of food, are, that they are very economical feeders, and that the lambs mature early and can be turned off in a short period of time.

Ewes of the Down breeds are scarce just now, so if they could not be found I would advise the subscriber to buy common Merino ewes

and breed them up with good Shropshire rams.

Peter Cook of Rio Vista: Get ewes with $\frac{3}{4}$ -blood Merino and $\frac{1}{4}$ Shropshire. Cross these with purebred Shropshire.

Prof. R. F. Miller, University Farm: Either the Shropshire or the Hampshire would be good. The Shropshire is somewhat smaller than the Hampshire but a little heavier shearing and somewhat more popular in this State. The Hampshire is coming to the front, however, and is liked somewhat better by some people, due to the larger size. They are both mutton breeds, have black faces and black legs and are well adapted to farm conditions.

TWO CROPS AND THREE PASTURINGS A YEAR.

[Written for Pacific Rural Press.]

What a little ingenuity can accomplish in the way of securing big yields is shown by the experience of Charles Olsen of Atwater on a small field of sandy loam soil.

Last January Mr. Olsen planted this field to barley; and on three different occasions he pastured it off, finally letting it head out, after which it was cut for hay in May.

About the first of June he irri-

TWO GREAT HOLSTEIN SALES

"The Detroit Sale of the West"

That's what competent judges say about the Dispersion Sale, of the

RIO VISTA HOLSTEIN FARM HERD

RIVERA, CALIFORNIA.

and the choice consignment from McAlister & Sons' Herd of Chino, Calif.

Tuesday and Wednesday, Sept. 19th and 20th

NEVER BEFORE HAS THERE BEEN AS MANY

High Record Cows and Heifers
Sons and Daughters of high-record cows.
Cows and Heifers bred to sires out of high-record dams,

offered for sale in the West as at this sale. Why not write for a catalog and see for yourself.

COL. BEN A. RHOADES,

1505 So. Main St.,

Los Angeles, Calif.

Solid Facts About

FRANK M. HELM'S FIRST ANNUAL SALE,
FRESNO, CALIF., TUESDAY, SEPT. 2, 1916.

Every animal in the sale will have passed a rigid physical examination as well as the Tuberculin Test and individual certificates signed by the State Veterinarian will be furnished with each animal.

Every one of the 60 females is a good individual. Many have very creditable records. All are capable of making big records. The females that are bred are bred to the two greatest KING SEGIS herd sires in the West, i. e., Crown Prince Segis being a son of King Segis and Beauty Pieterse Prince, being out of a daughter of King Segis. Can you estimate the value of calves from such sires? And there are seven daughters of Crown Prince Segis and three daughters of Beauty Pieterse Prince.

There are fifteen young bulls, everyone a real herd header and a perfect individual. Seven are sons of Crown Prince Segis. As an attraction I am selling my Junior Herd Sire

SEGIS PONTIAC MEAD.

He is a faultless individual, light in color and bred in the purple. His sire is from Riverside Sadie De Kol Burke, a World's Champion. The dam is a 20-lb. 2-year-old daughter of De Kol of Valley Mead and a granddaughter of Aralla De Kol, a world's champion.

This is the greatest opportunity Pacific Coast Buyers have ever had to buy this class of cattle. Why not write for a catalog?

Col. Ben A. Rhoades, Auctioneer,
Los Angeles, Cal.

Frank M. Helm,
Fresno, Cal.



SANTA ANITA RANCHO
ANOAKIA BREEDING FARM



First Annual Sale, October 23rd and 24th

THOROUGHBREDS: A few mares and some two and three-year-olds, sired by the famous Derby Winner, *Rey El Santa Anita*, and the noted stallions, *Palo Alto* and *Jake Argent*, out of famous thoroughbred mares.

ARABIAN THOROUGHBREDS: Two-year-olds, sired by Imported Stallion *Ibn Mahrus*, head of our Arabian Stud. Dams are the choicest thoroughbred mares of Santa Anita Rancho.

SADDLE HORSES: Fourteen of them, some of which are sired by *Ibn Mahrus*, world renowned imported desert saddle stallion, and *Don Costano*, a five-gaited Kentucky saddle stallion. These horses are mostly three-year-olds.

POLAND CHINA AND BERKSHIRE BOARS: Four to nine months old. Sired by famous Poland China herd boars—*Banker's Boy* and *Glenview Wonder*. And Berkshire Boars—*Kintyre Laird*, *Grandson's Duke* and *Fashion's Longfellow 5th*.

The dams are from the very best blood lines. Most all these animals have winnings at World's Fair. Write for catalogue.

HOLSTEINS: We will sell a number of young bulls. Some sons and grandsons of the noted *Prince Gelsche Walker*, and bulls from one World-Record cow and two California State-Record cows. Sixty females of the highest class will be consigned. Write for catalogue.

WORK HORSES AND MULES will also be offered for sale.

WRITE FOR PARTICULARS.

Anita M. Baldwin,

W. H. TAYLOR, Superintendent.
Santa Anita, Cal.

Good Enough for Any Herd



AAGGIE GRACE PONTIAC
CREAMELLE.

Half Brother of Marie Clothilde
Pontiac Creamelle, California
Champion 2-year-old.

This youngster's dam, Aggie Grace
Brookside Princess, grand-daughter
of Pontiac Korndyke, the greatest
Holstein sire in the world, has an
official record of

8.17 lbs. BUTTER - 456 lbs. MILK
TEST 4.9%

This record was an increase of 6 lbs.
butter over her previous record and
expect her to make at least 30 lbs.
in her next test.

His sire is Dutchland Pietertje
reamelle, one of whose daughters
at 2 yrs. 1 month has just made a
record of 22.52 lbs. butter, 391.7
lbs. milk, test 4.72%, making her
California's champion 2-year-old.

This young bull is perfect in type,
50% white and just ready for ser-
vice. Born Apr. 22, 1915.

My showing at the State Fair will
include the Champion 2-year-old,
her dam, her full sister, and a few
choice young bulls for sale.

BREEDER OF HIGH-TEST
HOLSTEINS.

F. STENZEL

AN LORENZO, CALIFORNIA

Breeder of high-test Holsteins.

YOU CAN'T CUT OUT A
Dog Spavin or Thoroughpin
but you can clean them off promptly with



and you work the horse same time.
Does not blister or remove the
hair. \$2.00 per bottle, delivered.
Will tell you more if you write.
Book 4 M free. ABSORBINE, JR.,
the antiseptic liniment for mankind,
reduces Varicose Veins, Ruptured
Muscles or Ligaments, Enlarged Glands, Wens,
Cysts. Allays pain quickly. Price \$1 and \$2
bottle at druggists or delivered. Made in the U. S. A. by
F. YOUNG, P.D.F., 86 Temple St., Springfield, Mass.

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by CUTTER'S BLACKLEG PILLS
Non-priced,
fast, reliable;
preferred by
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men, because they
protect where other
vaccines fail.
Write for booklet and testimonials.
10-dose pkg. Blackleg Pills, \$1.00
50-dose pkg. Blackleg Pills, \$4.00
Use any injector, but Cutter's simplest and strongest.
The superiority of Cutter's products is due to over 15
years of specializing in VACCINES AND SERUMS
ONLY. INSIST ON CUTTER'S. If unobtainable,
order direct.
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Worths and Duroc-Jerseys
can fill orders for mature stock and wean-
ing pigs of both sexes. This is the largest
lot of TAMWORTHS in the State. Our Stock
pure to please.
Write or call and see us.
SWINELAND FARM.
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Expert Live Stock Auctioneers
PUREBRED STOCK SALES A
SPECIALTY.
Conducted in all parts of Calif.
Ben. A. Rhoades, Auctioneer.
1-3-5 So. Main St., Los Angeles, Cal.

gated the land and planted pump-
kins, getting a nice stand from
which he expected to secure a big
lot of good winter hog feed.

BERKSHIRES ON HOP AND
FRUIT RANCH.

[Written for Pacific Rural Press.]

Most purebred breeders are
graduates from grade livestock
classes. Such was the case of Frank
Brush, banker-farmer of Santa Rosa,
now the largest Berkshire breeder
in the northern coast district and
one of the largest in the West.

Mr. Brush made his start in the
hog business several years ago while
out on a pleasure trip, becoming in-
terested and finally purchasing a
grade sow and her litter that he saw
along the roadside.

These were put on one of his
ranches and when large enough the
pigs were sold at what seemed an
enormous profit. That led to other
purchases till finally several hundred
head of hogs were marketed an-
nually from the Brush ranches.

Six years ago he became interested
in purebreds and purchased a foun-
dation herd which has been enlarged
till at the present time there are
about 50 brood sows, including the
P. P. I. E. grand champion sow
Riverby Princess and several bought
at the Carruthers sale.

As herd sires, the boars Chalmer's
Duke 77th, third prize winner in the
aged boar class at the Exposition,
and Ames Rival 102nd are in use,
the nick of the latter boar on the
Chalmer's Duke pigs resulting in a
more refined looking Berkshire and
still maintaining the desired size
and bone.

With the increased size of the
herd came a necessity for special
swine quarters and these are now
located at the foot of a small hill
directly next to the orchard and hop
land located on the level below.

This hill is covered with brush,
making it a cool place in the summer
and providing some feed. Also it
develops good bone and feet in the
hogs.

Two small fields on the level land
raise feed for the hogs, and by pur-
chasing ground barley, middlings,
shorts, alfalfa meal, and tankage, a
satisfactory ration is made possible.

Because of his banking and other
farm interests, it is necessary for
Mr. Brush to have a competent
herdsman for his purebred herd, al-
though it is close enough to Santa
Rosa to allow him to keep in close
touch with all of the operations.

TWIN HEIFERS.

To the Editor: Would like to tell
A. H. H., Ukiah, that he had better
knock his twin heifers in the head.
We bought one of that variety and
it never would breed. This is a
dairy country, and have asked all
my friends on the subject and they
say twins are more liable not to
breed than they are to breed.

Point Arena. Jack Mounovan.

On the average about a carload of
horses are being shipped out of Han-
ford every week. Prices according
to James McCord are not as good as
they should be and as a result only
the poorer class of horses are being
moved. They are ranging from 1100
pounds upward.

GRANDSONS OF TILLY ALCARTRA



Prince Alcartra Korndyke,
Best bred son of Tilly Alcartra.

Our supply of these young sires is always limited, but we have a
few now which we are offering at very reasonable prices.

Write us at once, or call and see the herd.

J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

Hillcrest Stock Farm

Thornton S. Glide, Prop.

DAVIS, CAL.

Shropshire and Merino Sheep

and

Shorthorn Cattle

Shropshires sired by rams im-
ported by me from England.

HILLCREST LAD,

Imported 1911.

SHENSTONE CAVENDISH,

Imported 1913.

Individuals and Carload Lots.

A Few Shorthorn Bulls for Sale.

HILLCREST LAD,
1st Prize State Fair, 1911.



FOR SALE
Two Imported Registered Shire Mares

Nine years old; well broke to work, absolutely
sound, regular breeders. Have foals this year.
Now in foal by COLUMBIA MODEL, winner
P. P. I. E. Span weighs over 4000 lbs. Price
reasonable. Selling account overstocked. For
prices and further particulars, address

BRIDGFORD COMPANY,

Knighten,

Contra Costa County, California.

Rambouillets

1300 YEARLING RAMS AND 1000 EWES.

These sheep are purebred, large and smooth, with heavy fleece of
fine, long, staple, white wool. Individuals or carload lots.

Prices reasonable.

Correspondence solicited.

CHAS. A. KIMBLE, HANFORD, CAL. Breeder and Importer.

HOPLAND STOCK FARM
REGISTERED SHORTHORN BULLS

REGISTERED BERKSHIRES (Boars, Bred Sows and Gilts)
HERD BOAR, ROYAL POINTER 2nd, 197092, First Prize
Senior Yearling, P. P. I. E.
3 REGISTERED HOLSTEIN BULLS from High-Testing Cows.
SAN FRANCISCO OFFICE, 1210 FLOOD BLDG.

Digester Tankage

Send for Sensible folder on feeding hogs

Western Meat Company

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DUROC JERSEYS

Headquarters for the best in Golden
Model and Colonel breeding. These
are the two leading families of the
breed. Ranches at Holtville and De-
vore, San Bernardino County.

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PETERS, LAMSON & WALKER.
Devore, Cal.

GET STARTED RIGHT.

Registered DUROC JERSEYS

Service Boars from Prize-Winning Stock
are money makers.

They grow faster. Send today.

NEW ENGLAND CALIFORNIA
CORPORATION,

Ripon,

California

With the Livestock Men.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

LIVESTOCK FAIR NOTES.

Yolo County Fair postponed indefinitely.

Nevada State Fair, Fallon, Sept. 11-16, instead of as previously announced.

Entries for the Stanislaus Livestock Show close Sept. 5. A four-day butterfat contest will be held.

The Cal. Hydraulic and Engineering Co. will have a complete exhibit of dairy equipment at the State Fair.

Solano County Fair at Dixon resulted in nearly \$6,000 receipts from all sources. Gate receipts were \$1813.

Fresno County Fair horse entries close Sept. 25. Prizes total over \$2200 besides gold medals in sweepstakes classes.

Alexander & Kellogg of Suisun won the silver cup for best cow any age or breed, at Solano County Fair on a Dairy Shorthorn.

A. L. Nelson of Cal. Polytechnic, San Luis Obispo, will judge horses, beef, and swine at Kings County Fair, Oct. 2-7, Hanford.

Remember the Farmers' Union livestock sale, and the Poland China sale, Modesto, Sept. 20, and the Duroc sale, Modesto, Sept. 22.

The Barco Ranch of San Benito county will be a new exhibitor at Sacramento this year in the Shorthorn classes, having fitted four head for that purpose.

Stanislaus Livestock Show and Exposition, Modesto, Sept. 18-23, will be held on and beside the baseball grounds on account of increased demand for exhibit space.

Kings County premium list, aside from race horse stakes, is \$5635 plus about \$2000 in special classes. About \$1000 worth of improvements are being made on grounds and buildings.

J. W. Marshall of Dixon won the trophies for best boar, best sow, and for best buck, any age or breed at Solano County Fair. Daley Bros. won the trophy for best ewe, any age or breed.

The hills back of Rio Vista furnish horses and mules for their Annual Horse Show Sept. 23; and the Sacramento River in front of town will be the scene of elaborate water festivities that evening.

The Pacheco Cattle Co., of San Benito county, will exhibit nine registered Shorthorns at the State Fair, according to Manager Chas. Hawkins. Norman Hale, the well-known herdsman, will have charge of the herd.

Contributions toward the Napa County Farm Bureau Fair Sept. 14-16 made previous to Aug. 25 totaled over \$1300 in amounts varying from 50 cents to \$50; with the County contributing \$300. The best livestock show ever held in the

county is expected. Free-for-all barbecue on Fair Grounds noon Sept. 16.

The South San Joaquin Second Annual Community Fair at Ripon Sept. 15-16 limits entries to products of southern San Joaquin County only. Feed will be provided free for all stock and poultry exhibited. Ribbons will be offered as prizes, though a premium list will be made and paid after the close of the Fair, principally from the receipts.

DAIRYING AND DAIRYMEN.

Modesto is to get a \$100,000 plant to be built by the Borden Condensed Milk Co.

A second cow-testing unit for the Glenn County Farm Bureau was proposed at a recent meeting.

The Lewis Co. of San Jose are erecting modern dairy buildings and silos on their ranch near Hollister.

The second Cow Testing Ass'n for Stanislaus county is planned; 930 cows were signed up over a week ago.

Frank Frazell of San Benito county now has a herd of about 30 registered Holsteins on his ranch where cheese is made.

At a big dairy cattle auction sale in Kings county recently, the milk cows brought \$37.50 to \$135 per head, averaging \$77.

The Hollister Creamery is churning between 550 and 600 pounds of cream daily. They pay on a grading basis, allowing two cents more a pound for A grade than for B.

Dairy Shorthorns and Poland Chinas were recently adopted as official livestock for Apache County, Arizona, by the Advisory Council of the County Farm Improvement Ass'n.

Six leading dairymen furnishing milk to San Francisco have furnished Market Director Weinstock figures which show that the net average farm cost of milk is 14.965 cents per gallon.

The Cal. Central Creameries Co. recently finished filling its U. S. Government contract for 700,000 pounds of butter. The last of it was shipped to the Brooklyn Navy Yard. Ferndale furnished 500,000 pounds.

Tulare Cow Testing Association records of over 60 pounds fat in 30 days ending Aug. 15, 1916, follow: W. J. Higdon, G., 68.78; E. H. Thompson, H., 67.03; C. G. McFarland, J., 64.41; E. H. Thompson, H., 60.45.

A certain Texas community is stocked almost entirely with cattle from its pioneer Jersey herd. Of 3832 head recently tested in this community for tuberculosis, only one reacted, and it had been brought from an outside district.

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BIG TYPE POLAND CHINA HOGS—Bred sows, bred gilts, open gilts, weanlings, both sexes, boars ready for service. Herd sire, Iowa Wonder and Joker. Iowa Wonder is a son of "A Wonder," the greatest Poland-China boar living or dead. Joker was the First Prize boar in the Under Six Months Class at the Wisconsin State Fair in 1915. All animals are registered free of charge. Prices low on account of being overstocked. All animals first class. Quick, easy feeders, the kind the farmer wants. As a special premium each purchaser will be given a year's subscription to the "American Swineherd," the special advocate of the Poland-China, and a copy of "The Handbook on the Sow" and "The Pig Feeders' Manual." Write Geo. A. Smith, Corcoran, Cal.

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POLAND CHINA HOGS—Registered. Cholera immune. R. J. Miller, Llewellyn Ranch, Lathrop.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington.

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REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

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JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

YOUNG REGISTERED JERSEY BULL CALVES at reasonable prices. O. J. Ames, Oakdale.

REGISTERED JERSEYS—Young bulls and bull calves. T. R. Purvine, Petaluma, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

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REGISTERED SHIRES—Black Hawk Stock Farm. Importers and Breeders. Easton & Ward, Proprietors, Burlingame, Cal.

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AN OPPORTUNITY to purchase thoroughbred Collies. Having a greater number of thoroughbred Scotch Collies than I can accommodate, am willing to sell a few one year and older at a great sacrifice. The dogs are all bred by the noted prize-winners of the Brownvale Kennels, Redwood City.

MISCELLANEOUS.

CROLEY'S CALF FEED with skim milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

D. O. LIVERY, 216 Hobart Building, San Francisco, buys and sells livestock—any kind—any quantity.

DUROCS AND GUERNSEY BULL CALVES gilt bred to 900-lb. boar. Ed. E. Johnson, Tulare, Cal.

19-20. Animals under six months may be left free of charge and tested when that age. Every animal is guaranteed to be a breeder.

The Western Meat Co. of San Francisco is putting up a \$125,000 building at the Stockyards to use as a curing, freezing, and cooler room for meat, butter, and eggs. It includes a new ice machine besides their old one.

SWINE BREEDERS AND STOCK.

Fifty-four carloads of hogs were shipped from Hanford since Aug. 10 according to the Hanford Journal.

The University will keep cholera virus and serum in cold storage with Imperial County Farm Adviser P. I. Dougherty.

The semi-annual meeting of the Cal. Swine Breeders' Ass'n will be held at Hanford on "Swine Day," during Fair week.

N. W. Belleville of Glenn county suggests covering the Willows railroad corral to prevent hog shrinkage on winter shipments.

A. B. Humphrey of San Joaquin county and W. S. Guilford of Glenn county recently bought Berkshires at the Gregory Farms sale.

A large new hog shed is being built at the California Polytechnical School at San Luis Obispo, having concrete floors and feeding pens.

Peters, Lamson, and Walker of San Bernardino county will show at the Riverside Fair and participate in a combination purebred sale after the judging.

Hogs fed all the corn or wheat they want make more rapid gains if fed tankage, also, than if tankage is omitted. Whether these gains are more economical depends on the grade and price of the tankage.

Dallas Basche of San Benito county is establishing a choice herd of Berkshires on his ranch near Hollister, having recently purchased a son of Grand Leader 2nd from Grapewild Farms and a very choice young sow from Carruthers' Farms.

Hogs fed corn, wheat, and tankage in varying rations at the Missouri College of Agriculture for 120 days showed better gains for wheat than for corn and better for either with tankage than for either without it.

Chas. Hanna of Gilroy, who grows purebred Poland China hogs in connection with his young orchards, has 65 head at present, of which 11 are mature brood sows. Mr. Hanna grows horse beans, pumpkins, and Indian corn between the rows of his young trees for his hogs. He also has alfalfa pasture.

Carson Valley, Nevada, has the only Hampshire swine herd in the western part of the State. Their owner is C. H. Springmeyer, who has about 100, headed by Minden Chief, purchased from W. Henderson of Berkeley. He was sired by Gen. Allen and out of Tahoe. The average litter has been 9 pigs.

The Poland China sale to be held at Modesto Sept. 20 during the Stanislaus Livestock Show, will include 6 boars and 35 gilts, yearling sows, and two-year sows, of large medium, and small types. Prof. J. I. Thompson of University Farm selected them from the owners' herds. Several will be shown at the State Fair.

Duroc Jerseys to be sold at the Modesto Fair Sept. 22 will include 5 males, 35 spring and fall gilts, and a few sows. Some of these will have been at the State Fair and all will be exhibited at Stanislaus Livestock Show. Prof. J. I. Thompson of University Farm visited the herds Aug. 22 and selected the consignment.

GENERAL LIVESTOCK NOTES.

Kern County sheep men have been paying \$10 per acre for alfalfa to pasture from August to the end of the season.

Joe Corey of Kings County, buying mules for the U. S. Army, predicts a shortage of big ones within two or three years.

Oregon capitalists have bought the Marysville woolen mill which has been closed 17 years. Bishop Bros. are behind the new company.

Dr. Polin of San Luis Obispo county is erecting a silo and other modern dairy buildings on his ranch. He has lately acquired a small herd of registered Holsteins with the intention of eventually having a large number of bulls to dispose of in the adjacent territory each year.



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SEND FOR CATALOGUE.

Beekeepers of Riverside and San Bernardino counties held a meeting Aug. 28 at Riverside at which papers and discussions covered every phase of honey production.

The coming year, all Placer County High School pupils living over two miles away will receive 1 cent per mile for every mile traveled.

Ten counties have installed exhibits in Agricultural Building at the State Fair. Placer, Fresno, and Yolo are making special competition.

The German Government is reported to have decreed the use of meat cards after Oct. 2, by which about half a pound per week will be allowed for each.

Professional Directory

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PHONE SUTTER 2299.

WATERS, FEEDS, DAIRY

Dairy Replaces Famous Vineyard.

[Written for Pacific Rural Press.]

The transformation of one of the most famous wine-making establishments in the State into one of the finest dairy establishments in the west is the interesting work now in progress on the former Linda Vista Vineyard, now known as the Stephens Dairy, located close to Mission San Jose in Alameda county.

The dairy barn and milk house which have been constructed are the last word in sanitation and convenience, being built of concrete throughout and located on a hillside so that perfect drainage is secured. They fully meet the requirements of the certified milk specifications, but certified milk is not being sold.

The barn has a capacity of 120 cows, being 210 feet long and 40 feet wide. Two 20x30-foot silos at one end will be filled with corn from 110 acres of corn planted this year.

Of the 1106 acres in the ranch, 100 are planted to fruit, the balance

being farmed to general crops and alfalfa. With the development of the dairy will naturally come a larger acreage of forage crops. Experiments made with Sudan grass last year and this indicate that this crop can be successfully and economically grown on the ranch for pasture, hay, and silage.

As the hill on which the buildings are located is underlaid with a large number of springs, many of which flow during the entire year, a concrete dam has been constructed across a small gully, by which water storage is made possible for summer irrigation of alfalfa.

At the present time, 140 cows are being milked, which number will be increased as soon as the feed supply will warrant it. Because of its nearness to the bay cities, the ranch is admirably situated for the production of whole milk, which is the practice at this time.

Napa Pig Club Winner Gives Details.

[Written for Pacific Rural Press]

In the Pig Contest of the Napa high school, which just closed, the winning pigs, owned by George Gosling, made a gain of two pounds a day for five months. The following essay, one of the requirements of the Contest, is the winner's own story of how he raised his pigs:

How I Raised My Pigs.—"When I decided to enter the pig contest the first thing I did was to consider the most desirable breed. After consulting my father, who has had some experience in hog raising and who

alfalfa which was steadily increased. This feed alone was fed for the first two months, giving them all they would properly clean up. At the end of this time tankage was added to the ration. This was put in a separate box and kept before them continually until fattening time which started at the age of five and a half months. At this time soaked corn was gradually added to the ration, and the tankage and pasture was discontinued. From this time until the end of the contest, corn and



Napa High School Prize Pigs and the Winner. The Young Men Will Continue Raising Purebreds.

greatly favored the Poland Chinas, this was the breed selected. I then began to look for some of the best pigs of this breed as I intend to continue raising Poland Chinas after the contest is over. I wrote to many of the most prominent breeders, telling them what the pigs were for, and received very favorable answers from all. The best of these I considered was from W. A. Young of Lodi, whose offer I gladly accepted. These were sent to me at the age of two months, directly from their mother. He did not have time to wean them as I had to have them at this age to enter the contest. Through Mr. Young's advice I started right in to feed them rolled barley soaked in sour milk. The fourth day I began giving them green al-

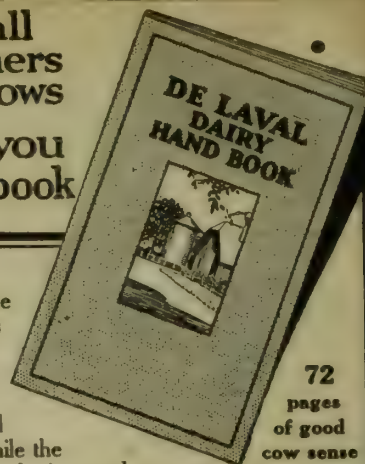
rolled barley soaked in milk was fed. They were given a cool wallow hole; and lots of fresh water was given them. Under these conditions and feed the pigs did very well, making a gain of three pounds each per day. During the entire contest charcoal, wood ashes, and salt were kept before them. The first 3½ months the pigs were given plenty of exercise; the last month and a half they were enclosed in a small pen. Several times during the contest the pigs were washed in sheep dip to keep them free from lice. The pen was kept as clean as possible and the pigs did nothing but eat and grow."

Miller and Lux have contracted for over 20 reinforced concrete silos for their San Joaquin valley ranches.

FREE

to all owners of cows

If you keep cows you ought to write for this book



THIS book was written for the man with only two cows just as much as for the man with twenty. In it has been gathered together a great fund of valuable information on subjects which are of vital interest to every cow owner. And while the various phases of dairying are treated by the best and highest authorities, it is not a technical treatise but is written in plain every-day language so that even the children can understand it. Here are just a few topics that will give you an idea of the practical nature of its contents:

"How a Dairyman Made Good"—a real story of a real farmer, who started with almost nothing, built up a fine dairy herd and made a big success.

"Year Around Feeding of Dairy Cows"—by an authority whose advice is well worth heeding. The importance of proper feeding deserves more attention from every cow owner.

"How to Judge a Dairy Cow."—shows by illustrations what points to look for in a dairy producer—explains the essential qualifications of a good dairy cow.

"Building Up a Dairy Herd"—a practical breeder gives some sound advice on this important subject.

"The Farm that Won't Wear Out"—shows that the farm where cows are kept, and the fertility returned to the soil, improves instead of deteriorates.

"The Care of Cream on the Farm"—quality is as important as quantity. It costs little and brings big returns.

"Silos and Silage"—one of the best chapters in the book. Full of silage facts that every farmer ought to know.

Then there are splendid articles on "Alfalfa," "Ventilation of Dairy Barns," "Breeds of Dairy Cattle," "Improving the Herd with a Good Bull," "Care of Freshening Cows," "How to Test Cows," etc. Numerous dairy rations, suitable for various sections of the country, are given, and various milk and dairy tables as well as tables of weights and measures, silo capacities, etc. that every farmer has occasion, at some time or other, to refer to.

Thousands of dollars have been spent in the preparation of this book, and if you keep cows you certainly ought to write for a copy and read it from cover to cover. The book is absolutely free. Just fill out the coupon or send the information requested on a post card, mentioning this paper.

The De Laval Separator Co., 165 Broadway, New York

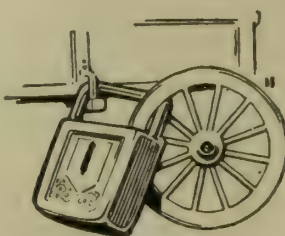
Please mail me, postage free, a copy of your New Dairy Handbook. I keep _____ cows I sell cream, make butter, sell milk (cross out whichever you don't do). The make of my

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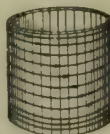


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MICA AXLE GREASE offers extra protection. By a special process, powdered mica is blended with highest quality petroleum grease. The mica forms a smooth coating on the spindle that keeps it cool and well lubricated. And the mica makes Mica Axle Grease last twice as long. Get a can from your dealer today.

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REDWOOD TANKS — SILOS. Thirty-five years in this Business in Stockton.—A 500-gal tank, \$8.00. A tank 6 ft x2½ ft., \$7.50. Other tanks equally cheap. I deal direct with the consumer, saving 10% to 25%. All sizes in stock. Clear dry redwood direct from the mill. Write for price today.

Latest improved machinery. Doors, Windows, Frames, Mouldings. R. F. WILSON. STOCKTON, CAL.

The veteran livestock breeder, James McCord of Hanford, says every farmer with 160 acres of land should have a hundred head of well-bred ewes to clean up the wastes. He says he is going to keep a small flock on his own ranch just for that purpose.

ALFALFA MEAL

If you use any alfalfa meal at all, in small amounts or in car lots, write to us and buy direct.

GREEN GOLD RANCH

Route "B," Box 283,

Modesto, California

AUCTIONEER

(Phone Farmers 394.)

Will conduct sales anywhere in California.

Purebred livestock sales given special attention.

For dates and terms address T. J. GILKERSON, Lemoore, Cal.



Purebred Registered HOLSTEIN CATTLE

The "Dairy Belt of the Northern States," so called in the past by various writers, has vanished. Holstein-Friesian cattle will thrive anywhere, and they are thriving and adding to the fortunes of mankind all over the nation, north, south, east and west. Big, hardy, healthy, consuming enormous quantities of feed and roughage, and transmuting it into large quantities of milk. Holsteins have proven to all the world that they are the dairy breed in all ways best suited to serve man, wherever he calls his home. There's big money in the big "Black and White" Holsteins. Send for FREE Illustrated Descriptive Booklets.

The Holstein-Friesian Association of America.
F. L. Houghton, Sec'y.
Box 230, Brattleboro, Vt.



"Good to the Last Drop"

Raise Your Calves on Blatchford's Calf Meal and Sell the Milk

More calves have been raised on Blatchford's Calf Meal than on all other milk substitutes combined.

100 lbs. makes 100 gallons of milk substitute, costing only one-third as much as milk. Prevents scouring and insures the early maturity of sleek, handsome calves.

It is steam-cooked and no trouble to prepare or use.

Write for Pamphlet "How to Raise Calves Cheaply and Successfully with Little or No Milk." At dealers, or Blatchford Calf Meal Factory, Dept. 117 Waukegan, Ill.

Napa County Farm Bureau

FAIR

will be held at Napa
SEPTEMBER 14, 15, 16.

Thursday, Friday,
Saturday.

Come and see the products of the Beautiful Napa Valley. Big Parade, Livestock Show, Barbecue, Dancing, Fireworks, etc., etc. Something doing all the time.

Send for Prize List.

H. J. BAADÉ,
Director General.
DR. BEN STETSON,
President.



THAT'S GREASE

Stay by the bridge that carried you over, and by the axle grease that took you on your journey and brought you home without friction. C. & S. is the oldest brand of axle grease made.

Use no other.

WHITTIER-COBURN COMPANY
San Francisco

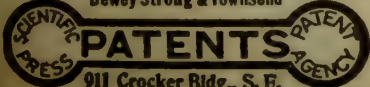


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Water Troughs,
Windmills, Frames,
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Steel and Wood.
Prices the lowest.

BROWN & DYSON
640 So. Center St.,
STOCKTON, CAL.

Dewey Strong & Townsend



Circular containing 100 mechanical movements mailed free.

A CALF NURSERY.

[Written for Pacific Rural Press.]

Calf-raising is one of the important considerations on the Escalon branch of Grapewild Farms because it is the belief of A. B. Humphrey, owner of the ranch, that the value of a cow depends largely on the manner she is cared for as a calf.

On this ranch a calf nursery is maintained through which every calf must pass before being turned onto pasture. This nursery is an addition to one of the feed barns, being enclosed on all sides and overhead but well ventilated and lighted.

The nursery is divided into four pens, all of which open into outdoor runways. Pen number one is for the calves directly after being born. Here they are allowed to suckle cows, kept especially for that purpose, for two or three weeks. After this they are gradually put onto skim milk and grain.

In pen number two the milk is cut down gradually and some hay provided. By the time they have gotten to the right size for pen number three they are on a grain and alfalfa ration entirely.

In the fourth pen they are also fed alfalfa hay and grain, but the latter is gradually reduced here, and when they finally leave this pen they are good growthy animals, in suitable condition to turn onto good pasture.

VIGOROUS SIRE NEEDED.

[Written for Pacific Rural Press.]

Does pampering the dairy bull make him a less vigorous and sure breeding animal? It is the opinion of F. Stenzel of San Leandro that it does; and because of that belief, his purebred Holstein bulls are not handled more than necessary, nor are they kept housed up and fed a lot of rich concentrated feeds.

They are turned into pastures by themselves, away from all of the females in the herd, where they are exposed to the weather, and fed pasture with a small amount of mill feed.

As a result of this system, every bull raised on the place for the past five years has been strong and vigorous and well able to take care of himself under the most adverse conditions that can be found on California dairies.

Quite the contrary to this was the experience of Mr. Stenzel in purchasing a bull for use on his own herd. This bull had been abundantly fed in a box stall in the East before shipment and upon arrival was sleek and fat enough for the show ring. But after repeated attempts to get cows in calf to him during a six months period he had to be finally replaced with another bull combining more stamina with his good breeding.

The first issue of the Imperial County Farm Bureau Monthly Sept. 1916 contains an article advising chloroform for calves which exhibit lung worm symptoms by hard coughing in early stages, softer coughing later, frothing at the mouth, necks extended, and rapid loss of flesh. The chloroformed worms are expelled by coughing, swallowing, and use of a purgative two hours after giving chloroform. Calves must be given only enough of the anaesthetic, through the nostrils, to make them act dozey.

REMCO

Air-Dried Redwood

PIPE

For Irrigation—Water Supply—Power. Sizes 2 inches to 12 feet. For pressures up to 400 feet head. Guaranteed for 100 per cent overload.

Costs less than any other pipe of equal capacity, efficiency and endurance.

Not affected by worms or insects, acid or alkaline soils, electrolysis or roots.

Withstands extremes of heat and cold, dryness and moisture.

Outlasts any pipe except cast iron, and maintains its full flow capacity to the end.

TANKS

for Water—Wine—Vinegar—Oil—Acids—Solutions. For Storage—Mixing—Fermenting—Pickling—Leaching. In all shapes and sizes—500 gals. to 500,000 gals.

SILOS

for Dairymen—Stockmen—Feeders. Sizes, 25 tons to 300 tons. THE BEST.

ALL REMCO PRODUCTS are manufactured to your order from CLEAR, AIR-DRIED REDWOOD.

Selected from our stock of forty million feet.

Their outstanding features are HIGHEST GRADE MATERIAL—MECHANICAL PERFECTION—SUPERIOR EFFICIENCY and MAXIMUM DURABILITY. Catalog sent on request.

Redwood Manufacturers' Co.

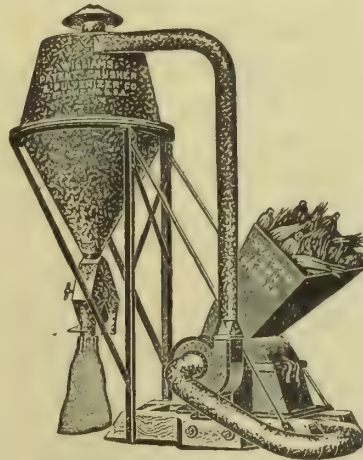
1608 HOBART BUILDING,

SAN FRANCISCO.

WILLIAMS FEED GRINDER

Cuts --- Shreds--- Grinds

Separately or in
Combination



Any kind of hay, straw, vines, beet tops, sheaf grain, and grain either shelled or in the head

Six sizes from 500 pounds per hour up to 10 tons per hour

The Alfalfa Meal receiving the Gold Medal at the P. P. I. E., 1915, was ground by a Williams Mill, which had then been in operation five years.

Write for Bulletin No. 752

Williams Patent Crusher & Pulverizer Co.

PACIFIC SALES OFFICE

268 Market Street,

San Francisco, Cal.



Three Hundred Million Bushel Crop in 1915

Farmers pay for their land with one year's crop and prosperity was never so great.

Regarding Western Canada as a grain producer, a prominent business man says: "Canada's position today is sounder than ever. There is more wheat, more oats, more grain for feed, 20% more cattle than last year and more hogs. The war market in Europe needs our surplus. As for the wheat crop, it is marvelous and a monument of strength for business confidence to build upon, exceeding the most optimistic predictions."

Wheat averaged in 1915 over 25 bushels per acre
Oats averaged in 1915 over 45 bushels per acre
Barley averaged in 1915 over 40 bushels per acre
Prices are high, markets convenient, excellent land low in price either improved or otherwise, ranging from \$12 to \$30 per acre. Free homestead lands are plentiful and not far from railway lines and convenient to good schools and churches. The climate is healthful. There is no war tax on land, nor is there any conscription. For complete information as to best locations for settlement, reduced railroad rates and descriptive illustrated pamphlet, address
Superintendent of Immigration, Ottawa, Canada, or apply to Gilbert Roche, Canadian Government Agent, Canadian Bldg., Exhibition Grounds, San Diego, Cal.

Canadian Government Agent.

Raising Poultry for Profit

SELECTING AND HOUSING HENS FOR WINTER EGGS.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

The person with a judgment for chickens can select the good laying hen now without waiting for the trap-nest. There are four points that nearly everybody can detect, namely, indications of sex development by the head, which is round and fine rather than long, eye alert and quick to notice, beak rather short; the pelvic bones must give room for the passage of eggs; if narrow and bones are crooked the hen will not be a heavy layer; vigor and good respiration always go with good layers; they must have a good appetite and capacity to digest and use the food eaten. A poor layer is never a big eater; she stands on the fringe of the flock at feeding time and picks food as if looking for dainties. Beware of the dainty hen; she is not worth the salt to season the feed you give her. To select pullets requires better judgment than to select hens, because it may be that one you would condemn as worthless might simply be a trifle less undeveloped than the rest, and time will change that.

Next to having the right hen for winter egg production, comes housing.

The Right House.—The right house for California, any section, must be open front without any fancy trimming by way of curtains. Leave the curtains for colder countries—they probably need them, but positively we do not. No matter where you live, place your houses with back to the storm direction; never have them so that rain and wind beat in on the fowls. It was wrong placing of poultry houses that led to closed houses, the most unhealthy thing for chickens of any age or kind. After placing the houses back to storm direction, comes the idea of depth, or width. I know several people that have real good houses, apparently; that means they are built of good lumber, placed right and have good roofs on; but are built long and narrow from front to back. In this case the wind whips around the ends of the building and causes a draft on the chickens as they roost. If the house had been two to four feet deeper, the roosts would have gotten the benefit of the

fresh air without the draft.

Drafts cause all sorts of catarrhal colds, roup, and sometimes pneumonia, because when a hen is on the roost her circulation is not as active as when on foot. So let the perches be at least six or eight feet from the front of the house. If you do this you will have no colds, no roup, pneumonia, or bronchitis—in fact all these things come from the one cause. But don't forget that your house must have a roof no matter where else it falls short.

QUESTIONS AND ANSWERS.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

Chicks Lose Feathers.—I hatched 125 Rhode Island Red chicks June 1, and have fed them the same as all other chicks I have hatched. They seem to lose all their feathers. Some have no feathers at all, but all seem healthy.—A. F. S.

The R. I. R. do not grow feathers as quickly as the small breeds like Leghorns. Sometimes one or two chicks will be almost nude, just growing a few wing feathers; then all at once they commence to feather and are generally among the nicest chicks. If your brooder was kept too hot that would account for it, but I have seen the same thing occur in hen-raised chicks, the heat from the hen's body proving too strong for the feathering. There is no disease and nothing can be done except to see that the chicks do not over-crowd. Keep their quarters clean.

Hens Stagger and Hang Wings.—One or two of my chickens have died. They are fed sprouted oats for morning feed. Egyptian corn and wheat at night, and a good mash before them all the time as well as grit, charcoal, etc. Their combs get dark red or bluish, they stagger and droop wings, are very thirsty and in two or three days they die.—J. G. A.

Your hens have inflammation of the liver. The best thing you can do is to cut out some of the mash, mix it with chopped alfalfa or clover and feed a certain amount each day. Don't leave it before them all the time. Put a little sulphate of magnesia in the drinking water for several days to clear out the bowels and regulate the feed. It is a case of too much mash.

Pullet Feed for Development.—Have about 300 pullets four and five months old; have plenty of green feed and twenty gallons skimmed milk a day. Would like to know the proper grain ration to feed.—J. E. B., Modesto.

You are a lucky man: plenty of green feed and milk; now if you will give those pullets one good meal of sprouted oats or barley a day, say in the morning,—it is easy to digest, so give them all they want—then let them have wheat and gyp corn in hoppers to run at all day whenever they feel like it, those pullets will pay you back in coin of the realm in a month or six weeks' time. Just be as generous with the grain as you can be and you will not hurt them no matter how generous you are. Don't stint them to any certain amount; if you do they will not develop near as soon nor lay near so well.

WINCHESTER

HAMMERLESS SHOTGUNS

MODEL 1912

Extra Light Weight

Made in 12, 16 and 20 Gauges

There's no need of carrying a heavy gun. The use of Nickel Steel makes it possible to get extreme light weight with great strength. But it costs more, and so is not generally used. Winchester Model 1912 shot-guns are constructed entirely of nickel steel, which makes it the lightest and strongest gun on the market. It is very handsome besides, and a reliable, fine-shooting gun. Be sure to see one before buying. Sold by all dealers.

THE REPEATER PAR EXCELLENCE



Keep Their Houses Clean

Mites and lice breed by the millions these early fall days. Don't let them get a foothold in your growing flock—the birds you expect to lay high-priced eggs this winter. Make their houses bright cheerful and sanitary and prevent the existence of all vermin and disease germs by painting and disinfecting at one operation with

CARBOLA

A snow-white mineral paint combined with the world's most powerful germicide. Rids the premises of vermin, yet cannot harm the birds. Comes in powder form. Mix with water and it is ready to use. Can be put onto any surface with brush or sprayer.

Use It Instead of Whitewash

in poultry houses, dairies, barns, cellars and piggeries. Will not blister, flake or peel. Used and endorsed by experiment stations and many of the largest poultry and dairy farms.
10 lbs. (10 gals.) for \$1 plus postage. 20 lbs. (20 gals.) for \$2 delivered free. 50 lbs. (50 gals.) for \$4 delivered free.
Your dealer will supply you. If not, send us his name and your order. Trial package, enough to cover 250 sq. ft. and booklet "The Disinfectant that Paints" for 25 cents.

Germain Seed & Plant Co., Wholesale Distributors, Dept. L., Los Angeles, Cal.

BRAVE THE WIND AND STORM
in the best wet weather togs ever invented
the **FISH BRAND REFLEX SLICKER**
(PATENTED) \$3.00
and **PROTECTOR HAT 75¢**
Dealers everywhere
Our 80th year.
A. J. TOWER CO. BOSTON

Try the Coulson System of Feeding
Our free book *Chickens from shell to Market* gives full particulars
Coulson Co. Petaluma Cal.

Right Now use DEVIL'S DUST
and Kill Lice and Mites
Devil's Dust is a deadly poison to all insect life; harmless to poultry, stock, plants
Globe Mills
Los Angeles, Cal.

BEEKEEPERS' SUPPLIES
Everything for the Honey-Bee.
Catalogue sent free on request.
THE A. I. ROOT CO.,
245 Mission Street,
San Francisco, Calif.

PACIFIC PIONEER FISH MEAT MEAL FOR POULTRY
BETTER THAN THE BEST BEEF SCRAPS
SEND FOR SAMPLE
WESTERN YALOW CO.
SAN FRANCISCO
ABSOLUTELY NO FISH FLAVOR

Turks Have Swelled Heads.—Have 30 young turks two to three months old. About two weeks ago half of them began running at the nose and a few days later swelling around the eyes. They eat hearty but do not forage much. They have well-ventilated coops, kept clean by spraying. Feed plenty of greens, lettuce, onions, cabbage, kale mixed with ground grains, feed plenty of whole wheat. We have 640 acres for range. Have used coal oil and lard on the heads, wiping it off; also used peroxide half and half. Gave permanganate of potash in water, but see no improvement.—R. S. U.

Turn your coops over and let the turks roost on top, cut out the feed and let them rustle. Turks two to three months old don't need coops; and a very little feed, night and morning, is enough. Put the coal oil on top of the drinking water so that every time they get a drink the oil cleanses the nostrils. Dosing will do little good now. It is too late. Let nature try.

POULTRY ITEMS.

Fresno county has a co-operative non-profit poultry association organized last May.

About 175 tons of chickens and 361 tons of turkeys were shipped out of Imperial Valley by express during the past 12 months.

The Oregon Agricultural College pen of hens at the Storrs (Conn.) Egg Laying Contest laid 61 eggs in the week ending Aug. 5, being the best pen record that week.

How to feed hens is to be taught in a six-weeks Short Course in Poultry to be given by the University of California at the University Farm, Davis, October 2 to November 14, short courses being in progress at the same time in Agriculture, Horticulture, and Dairy Manufactures.

Poultry Breeders' Directory.

RAISING FALL CHICKS PAYS.—If you know how. Write for particulars and our circular and prices, for it will interest you. Barred Rocks, Rhode Island Reds, Black Minorcas, White, Brown Leghorns—any quantity. Our breeding stock is in fine condition, and our hatching and shipping facilities are the best. We quote express-paid prices on request. Roodeen Poultry Ranch and Hatchery, Campbell, Cal.

BARRED PLYMOUTH ROCKS.—"The kind that Wins and Lays." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for catalog showing winnings at California's leading shows. Chas. H. Vadden, Box 396, Los Gatos, Cal.

MAKE AN EARLY START with your Fall chicks and get them right now. We have Baby chicks as well as chicks one and two weeks old with price same as baby chicks. No weak ones. All strong chicks—all varieties. Santa Clara Valley Hatchery, San Jose, Cal.

BABy CHICKS NOW READY.—Hatches every week. Write for special "Fall Chick" circular. See why Fall chicks pay. R. I. Reds, Barred Rocks, Black Minorcas, White and Brown Leghorns. Campbell Poultry Ranch, Campbell Cal.

CLOSING OUT—FOR SALE CHEAP.—3 Electric Incubators, 578 egg capacity each 16 Electric Brooders, 150 chick capacity each. Complete with circuit breakers, thermostats connecting sockets, etc. Address T. R. Jacobs P. O. Box 395, San Mateo, Cal.

CROLEY'S DRY MIXED INFANT CHICK FEEDS for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by GEO. H. CROLEY CO., Inc., Poultry Supplies, San Francisco.

MACFARLANE STRAIN WHITE LEGHORN Cockerels—April hatched, Hoganized. \$1.00 each, \$9.00 per dozen. Chicks to order. 10c each. Newton Poultry Farm, Dept. 1, Los Gatos, Cal.

SINGLE-COMB RHODE ISLAND RED EGGS for hatching from fine strain mature stock. Even, dark-red color. Good layers. Prices reasonable. Otto Schulz, Hollister, Cal.

DAY-OLD CHICKS—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma Cal.

EASTMAN'S REED TO LAY Barred Plymouth Rocks, Chicks, Eggs, Cockerels. Fairmead Poultry Farm, Fairmead, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS. Pea Powl, Pigeons. Wm. A. French, 545 W. Park St. Stockton, Cal.

WHITE WYANDOTTES.—Blue-ribbon winners. Eggs \$2 to \$5. Chicks, pullets, cockerels. R. W. Strawetski, Route 2, San Jose, Cal.

TURKEYS, DUCKS AND GEESE.

HART'S BRONZE TURKEYS AND EGGS.—Large reduction in price of stock. Order now for fall delivery. Free Circulars. Albert M. Hart, Clements, Cal.

PEKIN DUCK EGGS for hatching, \$1.00 per dozen. L. D. Collins, R. F. D., 54G, Denair, Cal.

PIGEONS AND TURKEYS ON SIX ACRES.

[Written for Pacific Rural Press by Bert S. Wolf.]

Purebred pigeons and turkeys on six acres have proved profitable for W. T. Kestell of Reno, Nevada. Mr. Kestell began breeding fancy pigeons in England more than 20 years ago; but has been in this country many years and has as lovely a collection of birds as the writer ever saw. They are Drogoon, Fantail, and English Pouters.

One of the carriers recently flew

from Virginia City to Reno in 20 minutes.

The Kestells have a collection of medals and blue ribbons won in Fairs even so far away as New Jersey; and many have been won in California at Sacramento and P. P. I. E. His birds won sweepstakes at Nevada State Fair a few years ago.

Turkeys.—In spite of wind and cold Mr. Kestell has now about 500 Mammoth Bronze turkeys. Three of these weighed 105 pounds.

All eggs are hatched by hens. In the past year 97½ per cent of

them were hatched and 90% raised. **Nests for Sitting.**—The turkey house is 80 feet long and contains 30 separated nests. Each one has a hinged cover so the sitting birds can get out 15 minutes at a time each day. The front of each nest is covered with a locked picket gate. Six inches of sand are used for the eggs to lie on.

Feed consists largely of two panfuls of grit, two handfuls of fine oyster shells to three gallons of bran mash once per day and frequent feeds of greens and grit.

26 Extra Features



MID-YEAR MODEL

73 New Conceptions

A Better Type of Car

The Result of 700 Improvements Made by John W. Bate

We ask you to see—for your own sake—a car vastly different from others. A car built by John W. Bate, the efficiency engineer, after 13 years of constant betterment.

We brought John W. Bate to the Mitchell plant to work out a lifetime car. And to build a plant and equip it so such a car could be built at the lowest cost.

He has built that plant—a model factory. It has cut our factory costs in two. And he has built the car. This Mid-Year Mitchell—his 17th model—shows the final result of his efforts. It shows the result of 700 improvements made since he started with us.

Don't make the mistake of buying a fine car without knowing this Bate-built type.

Every Part Perfected

Every part in this Mid-Year Mitchell has been studied, tested and revised until Mr. Bate pronounced it perfect.

The car is almost without castings. There are 440 parts—drop forged or steel stamped—which are three times as strong as castings.

In every part at least 50 per cent is added to the needed strength.

All important parts are oversize. The parts which meet the major strains are of Chrome-Vanadium steel. No Bate cantilever spring—which we use—has ever yet been broken.

The result seems to be a lifetime car—what Mr. Bate has aimed at. Six of these Bate-built cars have averaged

164,372 miles each—over 30 years of ordinary service. One has run 218,734 miles.

26 Extras—73 New Ideas

The next step was to make this a complete car—a car with every wanted feature. This Mid-Year Mitchell has 26 extras, all of which most other cars omit. Each is something you will want.

Then we combine in this one car all the new ideas and touches. In designing this model our experts examined 257 new models. This model embodies 73 new conceptions, all of which add beauty, luxury, comfort or convenience. So you will find in this Mitchell the most complete car built. And you will find all the new ideas.

No Extra Cost

The result is a car of wondrous endurance, a car of low upkeep, an almost trouble-proof car. It is the car which great engineers are buying. Your dealer will show you a list of them.

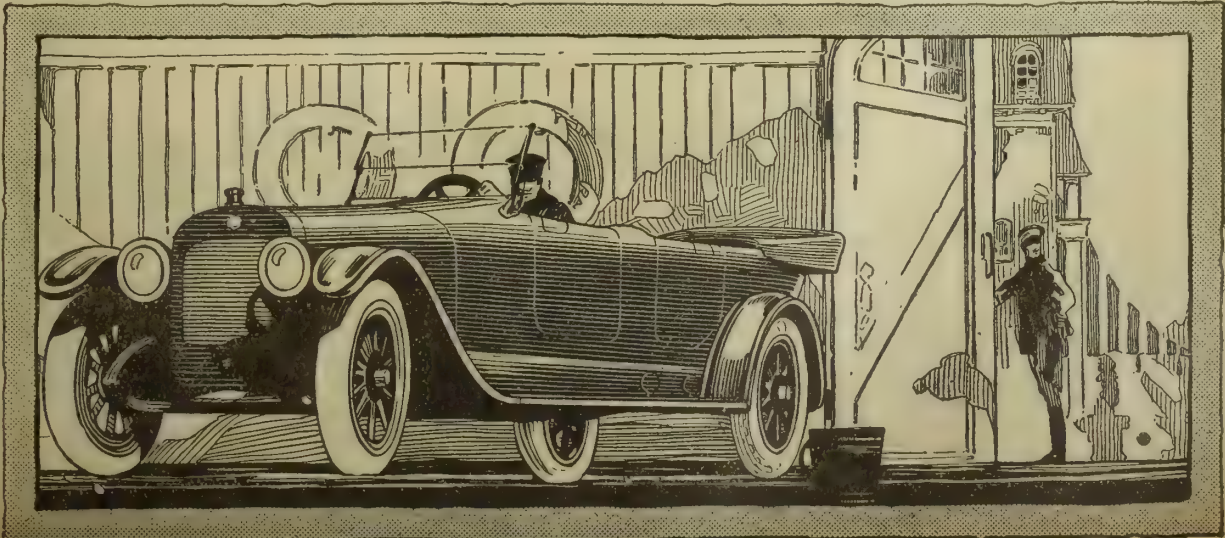
The extras alone—things other cars omit—will cost us this season over \$2,000,000.

Such a car at the Mitchell price would be impossible, save for our factory efficiency. About 98 per cent of this car is built in this plant, under Mr. Bate's efficiency methods. And all those savings go into extra value.

If you don't know the nearest Mitchell dealer, ask us his name. Let him show you all that John W. Bate has done. It will win your admiration.

Mitchell Motors Company, Inc. Successor to Mitchell-Lewis Motor Co. Racine, Wis., U. S. A.

\$1325 F. o. b. Racine
For 5-Passenger Touring Car or 3-Passenger Roadster
7-Passenger Body \$35 Extra
High-speed economical Six; 48 horsepower; 127-inch wheelbase; complete equipment, including 26 extra features.



THE HOME CIRCLE PAGE

IT'S ANONYMOUS.

The socks I darn for thee, dear heart
Mean quite a pile of work for me;
I count them over every one apart,
Thy hosiery;
Each sock a mate, two mates a pair,
To clothe thy feet in storm and
cold,
I count each sock unto the end, and
find
I've skipped a hole.
O carelessness, this is thy reproof;
See how it looms across thy sole;
I grind my teeth, and then in very
truth
I darn that hole, sweetheart,
I darn that hole!

'MANDA JANE.

None of us liked Manda Jane. We all said so the first day she came to school. Her dress was sort of old-fashioned, and too long for her; but it wasn't just how she looked that was the matter. I guess we thought there were enough of us without her, and we didn't want any more. You see, there were nine of us girls who brought our dinners,—just enough for the three playhouses out under the 'roop' and, besides, we all knew each other, and it's so much trouble to get acquainted with strangers.

"Well, we don't need to have her," said Delia Kelly. "We didn't ask her to come to our school, and we can go on just the same as if she wasn't here."

So when noontime came, and the teacher and the other little children went home, we hurried off and left 'Manda Jane to herself. She looked up as if she expected we'd ask her to come, too; but we didn't, and after a few minutes she sat down on the steps and opened her basket. She sat there nearly all noontime, and we couldn't help seeing her while we played. Little Kitty—she's always so tender-hearted—wanted to ask her to come.

"Whose playhouse can she have a part of, then?" asked Marie. "There are only three places, and it'll make one of 'em all crowded up to have four girls in it."

Well, none of us wanted her; and Kitty couldn't do anything without the rest of us, though she looked sorry. That's the way it went for four or five days. We found 'Manda Jane knew as much about her lessons as any of us, though her dresses were too long, and the other children liked her in games at recess; but we girls wouldn't pay her any attention. Our schoolhouse is in the country, in a nice woody place; and so we thought 'Manda Jane was going to look for wild flowers when she didn't stop on the steps one day, but walked right past where we were, farther in the grove. By and by we saw her moving about as busy as she could be, as if she was making a playhouse all by herself.

"I think that would be awfully lonesome," said Kitty; and I think we all felt a little sorry and sort of mean, only we wouldn't say so.

The next day 'Manda Jane hurried off just the same way, and the day after that, too; and we could see her flying about and fixing something. We pretended we didn't care what it

was; but, really, we could hardly play at all for watching her. But the next noon, when we were getting ready to go for our baskets, she stopped us.

"There's a new store started down near where you folks keep house," she said; "and, if you want tea, sugar, soap, or—or anything, the woman that keeps it'll give good measure and sell cheap."

"Store?" we all said at once.

She was leaning against the teacher's table, her eyes all twinkly and laughing; and she looked almost pretty,—ever so much prettier than Marie, who jumped up on the table beside her.

"Yes, I've started a store," she said, "and I should think you housekeepers would need to buy lots of things."

We began to crowd round her; but she wouldn't tell us much, only to "come and see," and we didn't wait to have her ask us twice. She had fixed up the prettiest place with moss and green branches!

There was a nice, smooth stump for a counter, and scales made of strings and birch bark. There was white sand for sugar and pebbles for coffee, and she had made, cunning little paper bags to put things in. Oh, it was such fun! We bought and

bought; and she gave us some real gingerbread—such good gingerbread that her grandmother made,—because, she said, storekeepers gave things when they had an "opening." We forgot all about not wanting her, and almost forgot to play house at all, because we were all the time running to the store. She had so much custom that she said one of us might be a clerk; but everybody spoke for the place, and so we had to take turns. It was the very nicest noontime we had, and nobody ever thought of leaving 'Manda Jane out after that: we couldn't do without her.

"How did you ever come to think of anything like that?" Delia asked her one day.

"Grandma made me think of it," she said. "You see, I felt a little bit lonesome, and I thought"—her face grew red and sober, and she stopped a minute; then she said the words right out—"I thought you girls didn't like me, and wouldn't ever be friends; and I told grandma there wasn't any place for me. 'Make a place, then,' she said. 'All the world wants the ones that are willing to make themselves wanted.' So then I stopped thinking how you ought to make it pleasanter for me, and began to plan how I could make things nicer for you."—Kate Hamilton, in Sabbath School Visitor.

Use a teaspoonful of ammonia in the water in which dishcloths are to be washed and the dingy look will soon disappear.

MRS. BEST'S LETTER.

My dear Friends:

Practically all summer garments have disappeared from the shop windows and each week brings a new and fresh supply of articles for winter wear.

One store had a whole window full of blouses made of Georgette crepe in the new fall shades of Roman Gold and Grey. These were very stunning looking, but of course are suitable only for wear with certain colors. Much more utilitarian and almost equally as pretty are the crepe blouses of dark blue and green. These are made with clusters of fine tucks and have white collars and cuffs with a touch of colored embroidery on them.

But nothing could be more dainty than the white ones, of which there is an ever-increasing number. Many of them have soft revers down the front and large, soft collars—a style particularly becoming to girls and slender women.

With the exception of a few net waists, practically all the dressy waists are made of Georgette crepe; and while it many times is wonderfully thin and sheer, it really wears pretty well. It launders well also, but if you have a nice garment, it pays to dry-clean it for awhile.

For street wear with tailored suits, the new striped silk waists are very modish. These silks are dark with lines of bright color and are strictly tailored—high neck with turn-over collar and long sleeves terminating in a tailored cuff. A pretty finish at the neck for these waists is a band of ribbon with a made bow in front.

It looks to me as though the soft full revers were the first step toward the old-fashioned jabot that did do wonders about dressing up a plain waist.

The white broadcloth collar and cuff sets are here in full force—some of them have a touch of embroidery and others are perfectly plain. They are finished with a picot edge usually, but I saw one set with the old-fashioned "pinked" edge and very pretty it was. Being a novelty, the price is correspondingly high, but they could be made at home. So far, they are worn mostly on dresses, but I was told they were to be used on tailor suits as well.

As to tailor suits, there seems to be considerable latitude as to style—some of the coats are long, others short and the same is true of skirts, so there seems to be a style for all ages and figures, and all any of us need to do, to be well dressed, is to find our style. Yours devotedly,
Rosabella Best.

EAST INDIA CHUTNEY.

Pare and core twelve sour apples. Peel one mild onion. Remove seeds and stems from three peppers, one of which should be red. Seed one cup raisins and extract the juice of four lemons. Chop the apples, peppers, raisins and onion very fine. Add one pint cider vinegar and one-half cup currant jelly and let simmer very gently for one hour, stirring often. Add one pint cider vinegar, two cups sugar, one tablespoon each salt, ground ginger and cayenne; cook another hour, stirring constantly. Store as canned fruit.



"Young man, the best tonic for you is the right kind of food. I suggest for Breakfast

Ghirardelli's Ground Chocolate

It's easily assimilated — it's extraordinarily nutritious — and it is supremely delicious."

It comes PROTECTED—as all chocolate should—in ½-lb., 1-lb. and 3-lb. hermetically sealed cans.



Since 1852

D. GHIRARDELLI CO.

San Francisco

GOOD HEALTH.

[By H. E. Pastor, M.D.]

Power On The Farm—Of Two Kinds.

It was gratifying to read in a recent issue of the Pacific Rural Press of the growing popularity and expanding use of the tractor and other forms of farm machinery designed not only to accomplish the maximum of work, at the minimum of cost, but to lessen, also, the exhausting physical drudgery of farm labor. The writer spent twelve to fourteen hours many a day trudging along the furrow behind a single moldboard plow on the prairies of Illinois, and again later in the season dreamed away the hours of an Indian summer day on the soft cast-iron seat of a mowing machine. He remembers well the aching toil of the one, and the pleasurable exercise afforded by the other in contrast. The expenditure of physical energy called for on the old farm was heart-breaking as well as suicidal. Little wonder that the grown-up boy and girl fled the farm home at the first opportunity. Many a man, and woman too, succumbed prematurely to this exhausting round of daily drudgery. Such work leaves no reserve force to withstand the invasion of germ diseases and other varieties. Every man should accumulate a store of reserve energy for emergency occasions, which occur in the lives of us all. When some part of our internal gearing goes wrong, or a swarm of disease-generating germs have stolen into our interior unawares, it behooves us to be in a state of physical preparedness to repel the invader, or to promptly readjust the disturbed mechanism. This a store of reserve strength will do most effectually, and anything that lightens labor on the farm contributes to this end.

The Cold Sore.

An esteemed correspondent hands in the following useful item: "The

cold sore, or fever blister, in its early stages, will yield to an application of baking soda. As soon as the swelling is noticed moisten the spot and apply as much soda as will stick; repeat frequently, and after the swelling has subsided use a good cold cream. Spirits of camphor will overcome a cold sore, also, if applied before the skin has a chance to break."

Brieflets.

Alcohol, strong coffee, tobacco, and a too full diet are common causes of heat prostration.

Give the baby plenty of good, pure water, but don't give it too much food, nor give it too often.

If the baby is troubled with a persistent colic and diarrhoea, with greenish stools, and you are using cow's milk, try stopping the milk and substituting a good condensed milk, with some reliable cereal food prepared expressly for babies.

Don't use cracked or chipped crockery or glassware; these broken places afford a nidus for all sorts of disease germs, often the cause of serious ailments.

NOVELTIES IN THE SHOPS.

Ostrich feather capes about 18 inches long, with high collars, are shown in one of the exclusive shops.

Baskets covered with fancy cloth and trimmed with gilt braid are being shown for candy receptacles.

The "Lucky Dog" fad seems still to flourish. These are little figures of dogs worn on a ribbon and supposed to bring good luck to the wearer.

The new silk hosiery has a drop stitch pattern that makes the stocking appear to be full of runs.

A new card table cover is of white linen, with a flet square in each corner, with a spade, club, diamond and heart design and a flet square in the center of the cloth has the number of the table in it.

Bordered wool challie is one of the new attractive materials. It comes mostly in light grounds with designs in colors.

Hand-crocheted yokes for night-gowns and chemises are shown in the needle shops.

CAULIFLOWER PICKLE.

Cut two heads cauliflower, one pint small onions and three red peppers into small pieces. Dissolve one-half pint salt in enough water to cover and let all stand over night. In the morning, drain off brine. Heat two quarts vinegar and add slowly four tablespoons mustard and one tablespoon flour. Add enough tumeric to color and boil fifteen minutes. Then pour over vegetables and seal.

HINT FOR PIE SHELLS.

In baking crust for lemon pie, invert the pie tin and put the crust on the bottom of the pan. This way it never puffs or crawls down as it is apt to do if baked inside the pan. After baking, it is easily slipped off.

Even Your Wear Can't Faze These Socks

If there's any work that makes a man's socks look "all-shot-to-pieces," it's farm work. You're on your feet most of the time, doing the jobs that are hard on shoes and even harder on socks. Don't put up with sore feet and quickly worn-out hose. Buy socks that are built strongest where the wear is hardest.

DURABLE DURHAM HOSIERY

has heavily reinforced heels, soles and toes—securely knit-on tops. Buy Durable Durham Hosiery for the whole family. It gives everybody longer wear because it is made from the stretchiest, sturdiest yarn we can make. It sells for 10, 15 and 25 cents. If your dealer hasn't Durable Durham Hosiery, ask him to get it.

When you're in town have the storekeeper show you the 25-cent Mercerized Durable Durham Hosiery.

DURHAM HOSIERY MILLS
Durham, N. C.



Points of Hardest Strain



At the Fair—

KODAK

Get pictures of all the things that interest you. The prize winning horses and cattle and sheep and hogs—pictures of machinery and whatever may help you in your farming.

Yes and pictures of the friends you meet at the fair, and the incidents in coming and going. There's a worth while album full of Kodak pictures on every such trip.

Ask your dealer to show you the new 2C Kodaks and 2C Brownies. The pictures are 2 1/2 x 4 1/8 and these cameras are right up to the minute. They have all the worth while new features and make pictures of the size and shape you want at a low cost. They sell at \$9.00 to \$19.00.

EASTMAN KODAK COMPANY,

ROCHESTER, N. Y.

The Well Fed Man

IS THE CONTENTED MAN.

THOUSANDS of California and Nevada housewives, watchful of the family's nourishment, and men folks who love GOOD THINGS TO EAT, know that the GROCERIES supplied them by FREESE & CO., are the BEST obtainable, and can be bought at much LOWER PRICES than elsewhere.

OUR NEW CATALOG

is ready for YOU—and we are sure that a close study of it will result in mutual advantage. SEND FOR IT NOW—It's free for the asking.

Our Well-Equipped

Mail Order Department.

is at your service. 16 years of experience back of each order.

FREESE & CO.

The Mail Order House

S. E. Cor. Divisadero & Ellis Sts.
SAN FRANCISCO, CAL.

HE ONLY is advancing in life, whose heart is getting softer, whose blood warmer, whose brain quicker, whose spirit is entering the living peace.—Ruskin.

CUT FLOWERS

Cut out the Middleman. Buy direct from the Grower. All varieties of cut flowers in season direct from the plants, sent by parcel post or express. Also floral work of all kinds. Try a sample order. 40 varieties of ferns in 4-inch pots now ready, 25c each.

GEO. N. TYLER.

Brookdale Nursery, Los Gatos, Cal.

A Watch-It-Get'-Em

Ant Destroyer—is slow acting—does not kill instantly, but gets the nest as well as the parent. Does not lose strength. Positively non-poisonous—no danger to children, house pets, or foodstuffs. Send 6c for trial can. Ask your neighbor. She uses it. At your dealer. Accept no substitute. DEPT. P, 19 to 25 MINNA ST., S. F.

FIGURES GIVEN
ARE INDEPENDENT
AND RELIABLE

Pacific Rural Press Market Report

PRICES QUOTED
AS PAID TO
PRODUCERS

San Francisco, Aug. 30, 1916.

Wheat.

Changes in the war situation have caused a very nervous and irregular market in the East, reflected to some extent on the Coast. Notwithstanding this, prices are still rather firm, and sharp advances are noted in Sonora, Northern red, and bluestem, the latter being very scarce.

[f. o. b. San Francisco.]

Sonora wheat \$2.07 1/2 @ 2.10
Northern club 2.07 1/2 @ 2.10
Calif. club, ctl. 2.05 @ 2.10
Northern Bluestem. 2.30 @ 2.35
Northern Red 2.10 @ 2.30

Barley.

Barley is much easier than last week, as regards both spot and future grain, and feed is quoted somewhat lower. The prospect of delay in shipping to the East is curtailing business, and export business is very light.

[f. o. b. San Francisco.]

Shipping, ctl. \$1.75 @ 1.80
Choice seed, ctl. 1.67 1/2 @ 1.70

Oats.

The only change is a slight advance in Texas red seed. The movement of feed is of moderate proportions, but seed is in good demand, with offerings rather limited.

[f. o. b. San Francisco.]

Red feed \$1.75 @ 1.80
Red seed 1.95 @ 2.05
White 1.70 @ 1.75
Black seed 3.00 @ 3.25
Texas Red seed 2.25 @ 2.35

Corn.

Eastern corn is little more than nominal, with little demand, and not much offered here. A railroad strike would of course prevent further shipments. This would probably strengthen the sorghum grains, but has not yet had that effect.

[f. o. b. San Francisco.]

Eastern Yellow, ctl. \$2.05 @ 2.10
Milo Maize 1.75 @ 1.80
Egyptian 1.90 @ 1.95

Beans.

With the old season about at an end, and stocks getting down to very narrow limits in most lines, the bean market is little more than nominal.

[On wharf, San Francisco.]

Bayos, per ctl \$5.40 @ 5.50
Blackeyes 3.50 @ 3.60
Cranberry beans 5.25 @ 5.40
Horse beans 4.25 @ 4.50
Small Whites (south) ... Nominal
Large Whites Nominal
Pinks 5.70 @ 6.00
Limas (south) 5.30 @ 5.40
Red Kidney 8.00
Mexican Reds 5.25 @ 5.40
Tepary beans 4.50 @ 4.75

Seeds.

Old stock scarce, with not enough new offered to justify change in quotations. Larger offerings expected shortly.

[Wholesale prices, S. F.]

Alfalfa, per lb. 23 1/2 c
Oregon Vetch 6 c
Mellilotus Indica 8 c
Mellilotus Alba 12 1/2 c
Bur clover, re-cleaned 10 1/2 c
Canada Field Peas 5 1/2 c

Hay.

Local offerings are still light, with few cars to be had, and impending railroad troubles threaten a shortage in the city market. Arrivals are mostly of common and inferior stock, but clean up quickly at well sustained prices. Local dealers report some sales in the country at a little easier prices than have been asked, owing to the desire of growers to clean up the fields before the rains begin; though a great deal of hay has been stored in the country and will be held back until needed.

[Wholesale prices per ton, carload lots, San Francisco.]

Wheat, No. 1 \$13.00 @ 14.50
No. 2 10.00 @ 12.00
Tame oats 11.50 @ 15.50
Wild oats 10.50 @ 13.00
Barley 10.50 @ 13.00
Alfalfa 10.00 @ 14.50
Stock hay 8.50 @ 9.50
Straw, per bale 35 @ .50

Quotations furnished by Nicholls-Loomis Co., Los Angeles, under date

of August 29th.

Barley hay \$10.00 @ 14.00
Wheat hay 10.00 @ 14.00
Tame oat hay 12.00 @ 16.00
Northern Alfalfa 11.00 @ 13.00
Local Alfalfa 12.00 @ 15.00
Stock hay 6.00 @ 9.00
Straw 5.00

Feedstuffs.

All lines as last quoted, with an active demand in the jobbing trade. [Wholesale prices, per ton, carload lots, San Francisco.]

Beet pulp, per ton. Nominal
Alfalfa meal, per ton. \$18.00 @ 19.00
Bran, per ton 28.00 @ 29.00
Oil Cake Nominal
Cocoanut cake or meal 23.00 @ 25.00
Cracked corn 44.00 @ 45.00
Middlings 35.00 @ 38.00
Rolled barley 34.00 @ 35.00
Tankage 45.00
Rolled oats 34.00 @ 35.00

Vegetables.

Arrivals in several lines have been far in excess of local needs, resulting in weak prices. Cucumbers are practically given away, large lugs going as low as 15c; tomatoes not much better, though cannery demand helps out. Bell peppers weak and hard to clean up, eggplant is cheap. Summer squash and okra holding up comparatively well, green corn rather firm, little good stock offered.

Celery, Alameda, bunch. 20c
Cucumbers, lug 15 @ 30c
String Beans 2 @ 4c
Summer Squash, lugs 30 @ 40c
Peppers, bell, box 25 @ 30c
Eggplant, lugs 30 @ 40c
Peas, lb. 4 @ 5c
Tomatoes, lugs 25 @ 50c
Green Corn, sack 50 @ 1.50
Okra, box 40 @ 60c

Potatoes and Onions.

The potato market is easing off a little, with prospect of shipments to outside markets being stopped and River surplus being turned this way. Onions have stiffened up a little,

with moderate supplies. Sweet potatoes dropping on larger receipts.

[On wharf, San Francisco.]

Potatoes, ctl., Delta \$1.25 @ 1.75
No. 250 @ 1.00
Salinas 2.25 @ 2.35
Sweet Potatoes, per lb. . 2 1/2 @ 2 3/4 c
Onions, yellow 1.05 @ 1.30
Garlic, new crop, per lb. . 4 @ 5c

Poultry.

A good many turkeys are arriving, moving readily. Receipts of chickens eased up at close of last week, but some were carried over; with increased offerings this week values show little strength. Young stock is doing a little better, as the flood of chickens from nearby points seems to be about over.

[Wholesale prices, S. F.]

Turkeys, live, lb 22 @ 25c
Broilers, 18 lbs. to doz. and less, lb. 23 @ 25c
do, over 18 lbs. to doz. 22c
Fryers 22c
Hens, extra, per lb, colored 18 @ 19c
Small leghorn 15 @ 17c
Smooth Young Roosters, per lb. (3 lbs. and over) . . . 23 @ 24c
Squabs, per doz 2.00 @ 3.50
Geese, per pair 2.25 @ 3.00
Ducks 13c
Old 12 @ 13c
Belgian hares 10c

Butter.

Arrivals have slowed up considerably; with Los Angeles bidding for supplies prices have jumped 2c for extras, lower grades being unchanged.

Thu. Fri. Sat. Mon. Tu. Wed.
Extra 27 1/4 27 1/4 27 1/4 27 1/4 29
Prime 1st 26 1/4 26 1/4 26 1/4 26 1/4 26 1/2
Firsts 26 26 26 26 26

Eggs.

The egg situation about normal, prices gradually advancing on the seasonable decrease in production. Some Eastern eggs have been coming in, but movement is not large.

Thu. Fri. Sat. Mon. Tu. Wed.
Extras 33 1/4 33 1/4 33 1/4 34 34 1/4
Sel. Pul. 30 30 1/4 30 1/4 31 31 1/4

Special Deciduous Market Report.

By J. L. Nagle.

Sacramento, Cal., Aug. 28, 1916.

[The following letter was written before the railway strike situation became acute. On Tuesday the western railroads placed an embargo on eastern fruit shipments.—Editors.]

As previously reported the movement of Malaga grapes continues heavy, in fact unnecessarily so, with the result of depressed markets. The quality also is inferior, due to unseasonable weather during the ripening period. The demand, however, in the smaller markets is greater than was anticipated, but prices at private sale are more or less regulated by the auctions.

The shipment of Tokays is moving at the rate of twenty cars and will probably increase to forty cars daily by the latter part of this week.

Mountain Bartletts are moving in light supply and crop will be practically cleaned up this week.

tically cleaned up this week.

Some few cars of clings are being shipped East but the majority of the stock is going to the canners.

The following prices have ruled for the week:

Chicago.—Bartlett pears averaged \$2.56; B. Hardy, \$1.70; Grand Duke Plums, \$2.06; Kelsey, \$1.48; Lovell peaches, 88c; Phillips cling, \$1.20; Malaga grapes, \$1.08; Tokays, \$2.16.

New York.—Malaga grapes averaged, \$1.05; Thompson Seedless, 88c; Tokay, \$1.50; Bartlett pears, \$2.72; Elberta peaches, 98c; McDevitt clings, \$1.32; Orange clings, \$1.17; Lovells, 83c; Susquehanna, 96c; Crawford, \$1.07; Kelsey Plums, \$2.07; Grand Duke, \$2.10; Gross, \$2.12.

Total shipments to Aug. 29, 9817 cars; total shipments same date 1915, 7441 cars.

Special Livestock Market Report.

San Francisco, Cal., Aug. 30.

No change in local quotations this week, but the threatened railway strike will bring a shortage unless enough livestock can be obtained by river and sea.

All hogs purchased by Western Meat Company are subject to seller standing one-half of any loss occasioned by any of the hogs being condemned for disease.

This has been somewhat rigidly enforced since May 1 on account of the high percentage of tubercular hogs which come from dairies where they are fed unpasteurized skim milk. Arrivals lately have not been so tubercular, but growers still show wasteful haste in taking stock off from stubble.

Practically all lambs arriving here are from Nevada and are good stock.

Shipments from Nevada to Chicago were embargoed by the railroads Aug. 25.

Cattle dropped hard in central western markets last week, but the effect was not felt here.

Wool markets show no change.

North Portland, Ore., Aug. 28.

Cattle.—Steers in many cases somewhat lower. Cows slightly advanced. Steers \$6.25 to \$6.75; Cows \$5.25 to \$5.40.

Hogs.—The swine market was steady to at least ten cents better than last week's close. Receipts twenty-two hundred today. Prices \$9.75-\$9.85.

Sheep receipts small and no change recorded. They were only ordinary in quality. Lambs \$8, ewes \$4.50.

Cheese.

Demand is very light, current offerings are slow to clean up, though prices are maintained on about former level.

[S. F. Dairy Exchange prices.]

Y. A's, fancy 17 c
Fancy Calif. Flats, per lb. . . 14 c
Monterey Cheese 14 1/2 @ 15c

[Los Angeles Dairy prices.]

Wed. Thu. Fri. Sat. Mon. Tu.
Butter 28 28 28 28 28 28
Eggs 32 32 32 32 32 32

Deciduous Fruits.

Little change is noted in values at present writing, but a general demoralization of the market is expected before the end of the week, as the railroads have refused to accept eastbound shipments of perishable goods, and the fruit is already being diverted to this market, causing a rather panicky situation. Local dealers say they can take care of cling peaches in good shape, as canners are anxious for more stock; but there will be an excess of free-stones, and heavy glut of grapes expected.

[Wholesale prices, San Francisco.]

Huckleberries, fancy, lb. . . . 8 @ 10c
poor stock 5 @ 6c
Currants, chest \$3.00 @ 4.00
Blackberries, chest 2.50 @ 4.00
Raspberries, chest 5.00 @ 6.50
Strawberries, chest 2.50 @ 4.00
Apples, Grvnstein, 4-tier 1.15 @ 1.25
Alexander60 @ .75
Bellflower, box75 @ .90
Jonathans65 @ .75
Pears, Bartlett, bx, No. 1 1.75 @ 2.00
No. 250 @ 1.00
Peaches, lugs60 @ .85c
Quinces50 @ .75c
Figs, Cal. black, box double layer60 @ .75c
White, single layer 40 @ 50c
Plums, crate75 @ 1.00
lugs75 @ 1.00
Prunes, crate85 @ 1.00
Nectarines, crate75 @ 1.00
Cantaloupes, std. crate70 @ .85
Casabas, crate'75 @ 1.00
Watermelons, doz 1.00 @ 2.00
Grapes, Malaga, small box 60 @ 75c
Muscat, small box 60 @ 75c
Grapes, Thompson, crate. . . 60 @ 75c
Tokay, crate 75 @ 90c

Dried Fruits.

Dried fruit market continues in lethargic condition, with some apprehension of a serious interruption of shipments through the railroad strike. With the outlook so uncertain, Eastern buyers have not been induced to change their waiting policy, local packers are lying low until ability to make deliveries is assured. Aside from this the situation looks favorable, as it is coming to be generally recognized that the growers are in a strong position, that their views must be met before much fruit is to be had. Apricots have been boosted a little from last week's figure, and the inside figure on prunes quoted last week is also omitted, as it is impossible to get anything at that price. Figs retain former firmness, with great shortage in country's supply.

Apples, new crop 4 1/2 @ 5 1/2 c
Apricots, per lb. 1916.11 @ 12 c
Figs, white, 1916 5 @ 5 1/2 c
Figs, blk, 1916 4 @ 4 1/2 c
Calimyrna, 1916 9 @ 10 c
Prunes, 4-size basis, '16 5 @ 5 1/2 c
Peaches, old 5 @ 5 1/2 c
1916 5 1/2 @ 6 c
Pears 6 1/2 @ 7 c

[Associated Raisin Co. prices]

Fancy Seeded, 16 oz. 7 1/2 c
London Layers, 3-crown, 20-lb. box, 1916 \$1.35
Imperial Clusters, 6-crown, 20-lb. box, 1916 2.50
1 crown loose muscatels, 50-lb. box, per lb. 7 1/2 c
Sultanas, 50-lb. cases, per lb. . 8 c

Citrus Fruits.

The Eastern auctions are still paying fine prices for California oranges and lemons, ranging from \$6.90 down to \$3.90 for valencias, and \$7.15 to \$5.50 for lemons per box. Shipments have been going East at the rate of 60 cars of oranges and 10 cars of lemons daily. So far this

is conceded to be the best price year for several last passed, and if the railroad strike does not interfere, the rest of the season will be very good. There are about 2,500 cars of valencias yet to be shipped, with practically no holdover stock of lemons on hand.

San Francisco movement rather slow, but oranges show a slight advance in sympathy with primary markets. Lemonettes are slightly lower.

Oranges, Valencia, fancy, box	\$3.75 @ 4.00
choice	3.35 @ 3.50
Grapefruit, fancy	3.25 @ 3.50
choice	2.50 @ 2.75
Lemons, fancy	6.50 @ 7.00
choice	5.75 @ 6.25
standard	4.00 @ 4.50
Lemonettes	3.50 @ 4.00

Honey.
Values firm but unchanged, with stocks light and a very fair demand both locally and for shipment.

[Wholesale prices, San Francisco.]

Water white, comb	13 @ 15 c
Amber	10 @ 12 c
Water white, extracted	8 @ 9 c
Light amber, new	6 @ 7 c
Dark	3 1/2 @ 4 c

Livestock.
[Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.]

Steers, No. 1	6 3/4 @ 7 1/4 c
No. 2	6 1/2 @ 6 3/4 c
Cows and Heifers	5 3/4 @ 6 1/4 c
No. 2	4 1/2 @ 5 c
Bulls and Stags	4 @ 4 1/2 c
Calves, light	8 @ 8 1/2 c
Medium	7 @ 7 1/2 c
Heavy	6 @ 6 1/2 c
Hogs, grain-fed:	
100 to 150 lbs	8 c
150 to 250 lbs	8 3/4 c
250 to 325 lbs	8 1/4 c
Prime Wethers	7 @ 7 1/2 c
Spring Lambs, f. o. b.	
country points	\$5.00 @ 5.50

Horses.
Local market in poor shape. This week brought another auction, closing out entire outfit of a big stable; many firms that have been using horses are gradually substituting motor power. The week's offerings include several cars of wagon horses and drafters from the country, many of them very attractive animals. Local prices have been up to the range quoted, but sales are not easy to close. Outside demand is good, further military buying is reported around the country.

[Approximate values in San Francisco, based on auction sales.]

Drafters, 1700 lbs and up	\$ 250
Drafters, 1550 to 1650	150 @ 200
Chunks, 1350 to 1500 lbs	150 @ 175
Wagon horses, 1050 to 1350 lbs	110 @ 150
Green Mountain range horses, 950 to 1200 lbs	20 @ 75
Farm workers	50 @ 100

Hops.
Values the same for old and new crops, but hardly any sales.

Sacramento	7 1/2 @ 8 1/2 c
Mendocino	8 @ 10 1/2 c
Oregon	8 @ 10 1/2 c

Hides.
Market fairly strong, with all offerings cleaning up readily at range quoted.

Heavy Steers, wet salted, 56 lbs and over	18 @ 19c
Medium steers	18 @ 19c
Heavy cows, over 48 lbs.	18 @ 19c
Light hides, 25-48 lbs.	18 @ 19c
Kip	20 @ 21c
Veal	27 @ 28c
Bulls and Stags	16 @ 17c
Dry Hides, 15 lbs. and up	31 @ 32c
Kip	34 @ 35c
Calf	38 @ 40c
Long wool pelts, each	\$1.75 @ 2.00
Short wool pelts	.85 @ 1.10
Lamb skins, long wool	.90 @ 1.10
Horse hides, wet, large	5.00 @ 5.50
Horse hides, dry, large	3.00 @ 3.50

Groceries.
Coast milling interests have again made a 20c advance in flour, family extras being held at \$7.20 to \$7.40 per bbl. New prices on canned salmon from first hands are: Reds, \$1.50 per doz.; Medium Red, \$1.30; Pink, 90c. The first lot of new Alaska salt salmon has arrived. Cured meats firm.

Publishers' Department.

Two hundred and five new subscribers were added to our list the past week.

Writing from Hanford, Mr. F. M. Barney says: "I am enclosing check for one dollar for renewal of my subscription to the Rural Press. Am highly pleased with same and so continue."

The following letter from Wm. A. French, the well known poultry fancier of Stockton, tells of his satisfaction in the use of our columns, also points out a new angle why it is successful. Here it is: "Mr. Frank Honeywell: They can talk all they want to about a poultry paper for advertising in, but give me an agricultural paper. I have tried them all and I find nothing to quite equal the Pacific Rural Press. More than 75 per cent of my inquiries say 'I saw your ad in the P. R. P.' Outside of what fowls I sell at shows, a large per cent of my orders come from your paper. My ad. will not be stopped. It will go right on another year just the same as the past. I am very busy getting 75 birds ready for the State Fair, or I would write a longer letter. Will I have the pleasure of meeting you there? Wishing the good old Press a very prosperous year."

In a recent issue of the Santa Rosa Democrat the following fine endorsement appeared of our old friend Yandle's prune grader and dipper: "Made in California, right here in Santa Rosa, home product, no getting around that! Yandle's prune grader and dipper, a revelation and revolution in prune-drying methods. Yandle's new machine puts the old time methods on the scrap-heap. Even 'craping,' uniform grading, greatly increased speed in handling, are the main attributes of Yandle's

new machine. So says Charles Ware, one of Bennett Valley's most enterprising horticulturists and foremost prune growers. Mr. Ware is highly pleased with this new twentieth century innovation in prune handling methods and labor-saving invention of Mr. Yandle, the local foundryman. You can pass this word around to the Sonoma county prune growers."

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BUY DIRECT AND SAVE SEVERAL PROFITS.—Lumber, lath, shingles, moldings, doors, windows, frames, and finish at rock-bottom prices. Quality and satisfaction guaranteed. Send your lists for estimates. Sam Connell Lumber Company, Portland, Oregon.

GAS ENGINES.—I can furnish rebuilt Fairbanks, Morse, Otto, Peerless, Samson, Union and other good makes in all sizes. All investigators buy and all buyers are delighted. Pay when satisfied. J. J. Pottinger, 189 2nd St., San Francisco.

LIVING EXPENSES REDUCED THROUGH CO-OPERATIVE BUYING.—Write for catalogue and particulars. Pacific Co-operative League, D236 Commercial St., S. F.

BUY ROASTED COFFEE WHOLESALE.—Best, 10 pounds, \$3.00 delivered. Order with remittance. WM. J. SCHROTH CO., 112-B Market St., San Francisco.

REBUILT GAS ENGINES from 3 to 50 h. p. Thoroughly overhauled and guaranteed. We handle only high grade engines. Write us your requirements. Motors, Gas Engines bought, sold and exchanged. Mechanical Installation Company, 181-89 Second St., San Francisco.

SECOND HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SPECTER PIPE WORKS, 306-8 Howard St., San Francisco.

FOR SALE—EXCHANGE.—Forty acres Chowchilla, California, improved level land. No waste. Well watered. Price of raw land. No alkali. Owner, Box 47, Rural Press.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency, Savings and Loan Building, Stockton, California. Established fifty years.

TO REDUCE THE HIGH COST OF LIVING, send for our Wholesaler to Consumer Catalog. SMITHS' CASH STORE, 106 Cay St., San Francisco.

FOR SALE.—A good, strong surrey, almost new. \$75. Address Mrs. J. C. Larsen, Rt. 2, Box 80, Napa, Cal.

EVERY SIZE WROUGHT IRON WATER PIPE and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a SQUARE DEAL. Weissbaum Pipe Works, 160 Eleventh Street, San Francisco.

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WANTED—ABOUT SIXTY YOUNG MEN and women to enter WESTERN NORMAL on August 28, 1916, to prepare for teaching. Western Normal graduates secure and hold good positions. We assist graduates to secure good positions and promotion. We also give a two-year high school course. For information, address WESTERN NORMAL, J. B. Humphreys, Principal, Record Bldg., Stockton, Cal.

WE WILL PAY YOU \$120.00 for congenial work in your own community. 60 days or less. Man or woman. No capital required. Opportunity for promotion. Spare time may be used. Full particulars free. International Press, 302 Winston Bldg., Philadelphia.

AGRICULTURAL COLLEGE GRADUATE.—three years' experience, two as foreman in large deciduous fruit orchard, open for engagement after Nov. 1, 1916. Box 228, Pacific Rural Press.

WANTED.—Reliable solicitors for country paper. Must furnish bond. 217 Underwood Building, San Francisco.

COUNTRY LANDS.

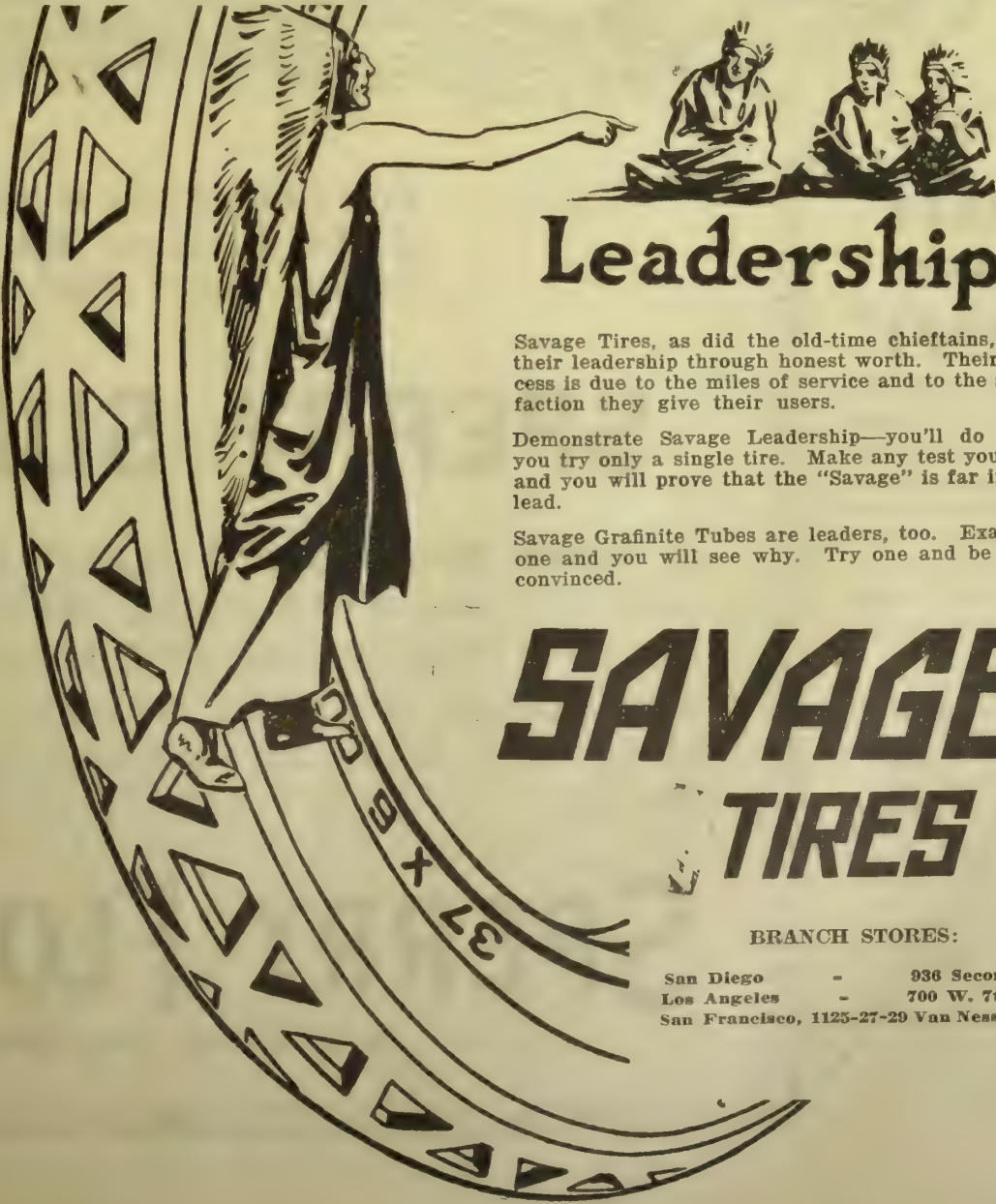
RANCH FOR SALE.—50 head of horses and machinery. 2000 acres of rich, sandy loam land for sale, on the east shore of Washoe Lake, Nevada, between Reno and Carson City, 1000 acres being cultivated, in alfalfa, grain and potatoes. The land is irrigated by a 400 H. P. Hydro Electric Pumping Plant, which belongs to the property, and the cost of pumping is less than 60 cents per acre. Fine cattle and sheep range outside of ranch property. Will sell this property as a whole or in small lots. Water right of 2000 inches goes with the land. Address W. G. Douglass, Virginia City, Nevada.

FOR SALE.—In the heart of California, 560 acres eighteen miles from Sacramento; no bed rock or gravel proposition; but deep, light adobe and red soil. The choicest of upland, finely situated for subdivision. Very little leveling to plant alfalfa; water never lower than 14 feet in driest season. Address Box 533, R. F. D., Route 3, Elk Grove.

WANTED.—Farms, large and small, in all parts of the State. Our system of placing owners in direct communication with buyers has brought us hundreds of applications for farms. What have you to offer? Write for our listing blanks. Western Farms Bureau, 680 Market St., San Francisco.

STATE SCHOOL LAND MAP, \$2.50.—County Sectional Map, showing Government land, any county, \$2.50. Free New August Booklet. Write Joseph Clark, Experienced Record Searcher, Sacramento.

FOR SALE.—36 acre ranch, well improved. For particulars, address W. K. Wheeler, Knight's Ferry, Stanislaus Co., Cal.



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in **Yellow Striped Sacks**, contains the proper food elements that make strong, healthy chickens and produce the greatest number of extra fancy, large eggs. The analysis is printed on every sack and what's on the sack is in the sack and that's what makes the egg.

SPERRY FLOUR CO.

STOCKTON, CALIFORNIA

THE PACIFIC RURAL PRESS

SAN FRANCISCO.

SEPTEMBER 9, 1916.

LOS ANGELES

California State Library 7-1-1

Opening Day at the State Fair.

[Written for Pacific Rural Press.]



IT'S the largest, most enthusiastic crowd I ever saw on the opening day of a California State Fair," said Director Chenu last Saturday. Women's and children's interests received unusual attention. Over 5,000 children are estimated to have been admitted free. They overflowed the grounds and made the day bright for everyone. A chorus of perhaps 200 of them sang for the large audience at the dedication of the Women's Building. A great tent was devoted to the handiwork of children—cooking, sewing, metal working, drawing and painting, wood work, etc. The large attendance of adults at this tent, as well as of children, indicated its popularity.

The significant event of opening day was the dedication of the Women's building. During the ceremonies Governor Johnson paid tribute to the women of California, and certain of their leaders in particular. It was open house for all visitors, and a constant stream of men as well as women expressed admiration of its conveniences for the comfort of woman visitors at the Fair. A nursery for babies, a kitchen, an emergency hospital, an art gallery, easy chairs, piano, etc., are features of the building. It is hoped to dedicate at least one new building at each State Fair.

Much to See.—If you should climb the big tower, which makes a blaze of light, to be seen far and wide at night, you might look over the Fair Grounds, and think that you could see it all in a day. Then you begin to go the rounds, stopping to ask questions about things that are interesting, and the day is gone before you are well started.

With all the extraordinarily increased exhibit space afforded by new buildings, big tents, and improvised shelters, there was scarce room for any more exhibits. The awards must be printed in next week's issue since we go to press too soon this week.

The Manufactures Building and the big tent behind it were filled with the latest and best things, of absorbing interest principally to our home-makers; but including also cement, irrigation pipe and well casings, exhibits by half a dozen State Departments, and other things too numerous to mention. There was a "haystack" of condemned short-weight scales which have been cheating the public. There was an exhibit on the care of the baby, and another on accidents to adults.

The Machinery Building was scarcely filled, but its big deep floor-tank was surrounded by pumps of great variety varying from pygmies to giants. The roofed and floored open-air addition to this building con-

tained silage-and-alfalfa-machinery, dairy equipment, concrete mixers, cultivation machinery, etc. Along the Fair Grounds fence was a very complete exhibit of dairy separators, engines, silage cutters, testers, etc. A 16x32 silo was newly erected, and a silage cutter was run by an auto. The automobile tent nearly 100 yards long, was comfortably filled the first day, and a special tent for auto trucks contained four different makes.

Tractors and tractor machinery had an exhibit field for themselves, and a demonstration field outside the grounds. On the opening day there

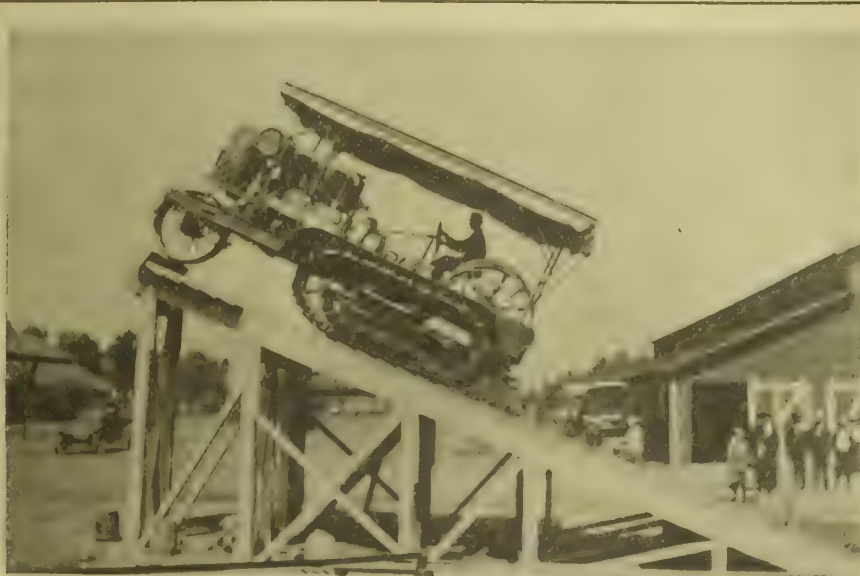
were about 20 tractors of eight or ten makes, besides cultivating machinery, tractor land levelers; a combined harvester, which would cut a 16-foot swath and contained a 45 h.p. motor to operate it besides a tractor which was to pull it. An olive grader and almond huller were also shown here. Two inclined platforms were ready to show what tractors could do. One was pivoted across center, so the tractor could tip it and then come down the other side. Several of the tractors were busy on the race track field.

The Agricultural Building could not contain all the magnificent county exhibits, which overflowed into the annex. Names of fruits exhibited did much to improve their educational value. These were not complete on the opening day, but Fresno had perhaps the finest fruit display, besides alfalfa and grains. Placer had a long panorama of its fruit districts made at infinite pains, and a good bit of fresh fruit under a pergola. Nevada had some pears, plums, apples and peaches so brightly colored that they seemed painted. Butte featured rice growing, having small fields growing in the customary water, at differing stages of maturity. Yolo featured fresh and dried fruit, butter, and nuts. The High School at Winters was finely reproduced in four or five kinds of dried fruit. Alfalfa, bees, grains and vegetables were also prominent. Colusa featured grains and nuts. Sacramento emphasized fresh and canned fruit, grains, and bees. Sutter displayed hemp fiber and plants, grapes, fruit and grain. Alameda had probably the greatest area and variety of exhibits, including fruit, vegetables, model poultry farm, and municipal and school displays. The Fancher

Creek Nurseries decorated a booth with ferns, palms, moss, and subtropical plants that made the air smell fresh, moist, and woodsy. There were a number of other agricultural and industrial displays more or less complete on opening day.

The Poultry Building, commodious as it was before, was well filled to the capacity of its large addition and was resonant into the night with praises sung by waterfowl in their new cement tank.

(Continued on page 280.)



Two Kinds of Power at the State Fair. Both are Necessary on the Farm.

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Member Audit Bureau of Circulation.

Entered at S. F. Postoffice as Second-Class Mail Matter.

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J. C. LOOMIS - Assistant Editor

EDITORIALS

THE WEEK.

CALIFORNIA is making a new record this week by going on at full speed with her State Fair after the center was burned out of it by a conflagration which destroyed the main pavilion and its rich collection of exhibits, just as the fair was opening. To go on with the fair; to refill the place of a half a million dollar loss as far as possible; to throw more emphasis on other features of the fair, of which comments are given in other columns; and to use the fact of the great fire as unique advertising for the exhibition—all these acts betoken the California spirit in its force and buoyancy.

Otherwise also the State is wide-awake this week. The lifting of the rail embargoes on perishables set the fruit cars to moving even before Congress had actually shunted the trainmen's strike upon a siding. The expectation to make a record with fresh deciduous shipments for the whole season is likely to be realized, and average return of \$200 or \$300 per car beyond the normal of \$1200 will have a tendency to hold confidence and interest in fruit planting this fall and winter. It is announced that on the evening of Monday, the day the strike was to have taken place, between 600 and 700 cars of fruit and vegetables were started East by rail over three railways. This is 50 to 75 per cent more than the daily average of about 400 cars, which was maintained up to the time that the railroad companies laid their embargoes on perishable freight last week.

Assurance of railways wide open also comforts nearly half a million tourists who, it is said, are summering in our State—climbing the Alps of California instead of Europe. Continued flush times at the East not only make a capacious market for our fruits and fruit products, but stimulate the interest of Eastern people to see where they come from. And so it appears that not only during this summer but during the winter just ahead of us, California will shine large in the eyes of the country.

LAWS MADE WHILE YOU WAIT.

THE threat of railway operatives to arrest transportation unless their demands were complied with, has been appeased by the congressional enactment of their chief contention into the law of the country. It has been a phenomenon new and strange in human experience. A certain number of men, generally held to be less than one-half of one per cent of the population of the country, has, by organization, alertness and insight, grasped and wielded an industrial and political situation, through which it could coerce the supreme power of the nation to enforce its claim. Whether its claim was just, relatively to rights of others who are also operators in transportation, and to still others who are patrons of it, directly or indirectly, no one can really know—though all may have strong convictions, one way or the other. Therefore one cannot know whether the new act of congress, made while those who ordered it waited, will be in the end a blessing or a curse to this country. It had the obvious aspect of a na-

tional hold-up with an act of intimidation, which is usually accessory before the fact to a hold-up. In our judgment, as stated last week, it should be made a crime to menace the operation of a great public utility, but of course some other recourse or direction of appeal should be provided, for consideration of alleged grievances and final action thereon. This would seem to have been the rational thing to do when first sign of the recent menace appeared, but that was overlooked and the trouble allowed to drift until it became a matter of political life and death to the party having legislative power, to close the struggle with an anesthetic.

DOES THE END JUSTIFY THE MEANS?

EVERYONE is glad indeed that the railway strike has been averted, millions of value saved from destruction and millions of people saved from misery. But that does not at all signify that all people justify the menace nor the means by which it has been silenced. Both may have been necessary to arouse people from their lethargy to a consciousness of the fact that public rights require fuller regulation of both ownership and operation of public utilities and that reasonable regulation does not consist in invoking hasty legislation to quell threatened disturbance, but in discovering both absolute and relative rights and in requiring every man, and every organization of men, to walk in proper pursuit of its own rights without encroachment upon rights of others and without menace to the public interest. Whether the enactment of the proposed railway strikers' claim into a law is fair to their employers, to the patrons of the roads, who must ultimately pay the bill, or to other laborers in other fields who will get no advantage from the new law, has still to be determined. It is now stated that the trainmen will rally their forces to help their employers get an increase of rates and that puts the public in the position of being bitten by both. We are frankly glad that the strike was prevented. It now is a national duty to find out exactly what it cost everybody's rights to prevent it, in the way it was done, and to safeguard the country against ever having to buy its rights again in that way. "Eternal vigilance is the price of liberty!"

FARMING AND FIGHTING.

IT IS both interesting and important that a world which is constantly increasing in population should become more conscious and appreciative of its growing need of food supply. Now and then, for the last half century, chemists with statistical tastes have warned us that the world is fast approaching the time when its population must live on rocks which chemistry could make nutritive—but people have not been much scared by such announcements. But now we have assurance that the world is waking up and that war, not chemistry, is the alarmist. Marquis Capelli, president of the International Institute of Agriculture at Rome, is cabled as saying:

I look for development of agriculture similar to that which the world has seen in industry during the past quarter of a century. The war has educated the world and has made it realize the immensity of the problems connected with food supply. In my opinion, among the ultimate results of this war will be the increasing interest taken by governments in the development of agricultural wealth, namely, by the encouragement of co-operation and association, by promotion of instruction in agricultural matters, by the creation of many model farms and agricultural intelligence bureaus. So may this vital national industry be built up at last, on its legitimate foundation, on a really scientific basis.

And a fair conclusion is that when all these agencies are developed to the ends, which may now be fairly anticipated, we shall have food production and distribution on such a foundation of efficiency and fairness, through the application of the sciences, natural and economic, that those who are engaged in these lines of ministration to world needs will embody such spirit and influence that the war-making classes will be under their control. Then there will come the test of the truth of the claim that there always will be war. It is a fact that in all the warring ages of the world, food producers and distributors have been held in slavery by political or religious dominators. Kings and priests have made the wars for the sake

of dominion, temporal or spiritual, or both combined, and have sacrificed food producers in the making of it. If food producers, through science and economics, gain ascendancy, they will be likely to insist that if kings and priests declare war they must fight it for themselves.

ATTRACTIVE, BUT NOT YET SAVING.

IT IS perhaps not strange that in undertaking to establish a thesis that agricultural education is the crowning need of mankind, we should encounter some difficulties and apparent contradictions. For example they have a course of agricultural instruction in San Quentin prison and the agricultural pupils publish a very interesting agricultural journal. To establish the uplift in the farming study it would be necessary to show that graduates of San Quentin fly to rural scenes and never appear again in prison precincts. But in Judge Ogden's court in Oakland the other day three men were convicted of burglary and sentenced to Folsom prison. The transcript of the transaction is in this wise:

When sentence was pronounced by Judge Ogden, the three arose and requested that they be sent to San Quentin instead.

"We have all been there before, your honor," they said, "and have taken up educational courses which we would like to finish. We would like to have a chance to complete our work while serving time."

"Well," said Judge Ogden, "when a man of the age of 23 or 24 honestly desires to take up school courses, I shall never refuse the request. You may have your request and go to San Quentin."

The judge evidently took the youths at their best and did not raise the question as to how far a burglar could be expected to cherish honest desires. We are quite willing to accept his avoidance of that question also, but it is more difficult to explain the efficiency of the reforming agency when it leads a man to commit crime so that he can get back under the influence of it. It is surely a glowing tribute to the charm of the process, but not so clear as to the uplifting power of it. Still we have admitted that we could hardly expect that everything should sustain our contention at first. It may come around that way later.

WORLD HUNGER MAY MAKE SEAS FREE.

OUR own very narrow escape from agricultural ruin, through arrested produce-movement by rail, ought to give us a more realizing sense of the enormity of the wrongs visited upon non-combatant populations by the manner in which the current European war is being waged. All the belligerents seem to have had a share in these wrongs, either by seizing food ships or proclaiming embargoes or by submarine explosions—to such extent that the seas have ceased to be a public highway and all peoples, both warring and peaceful, have been made to suffer wrongs new to the world's history. It is quite possible that the same development which lifts food producers from slavery to Mars may also make them rulers in the dominion of Neptune, to the end that warships shall fight their own kind and none others. In his announcement of the International Institute of Agriculture, to which we have just alluded, President Capelli says this:

The rate of freight for a ton of grain from Buenos Aires to Genoa, Italy, was in June, 1914, 9.98 francs, while a few weeks ago the rate was 245 francs or 25 times more. Every man interested in agricultural matters has become anxious as to the serious drawbacks caused by these enormous fluctuations in ocean freights, and at the initiative of David Lubin, the United States Congress has adopted resolutions requesting this Institute in Rome to study the matter in all its bearings and to invite the Governments of every country to participate in an international conference with the view of making suggestions on the stabilizing of ocean freights.

If the food-rights of the world's masses are maintained by such international effort under the auspices of agriculture, it may be very influential with tribunals summoned after the war to write a new law of nations. The old law of nations is at the bottom of the ocean. If the points of view of the new tribunals are simply drawn from airships and submarines as war tools, without due reference to their dreadful infringement of peaceful peoples' rights, the roots of current cruelty will not be reached. The high seas must be free for peaceful traffic.

By
the Editor

QUERIES AND REPLIES

INQUIRERS MUST
GIVE FULL NAME
AND ADDRESS.

A Scourge of Wireworms.

To the Editor: I have about an acre of rich sandy loam, always damp enough to raise corn or any kind of garden truck without irrigation, but the land is infested with small, slick, yellow worms about an inch long which kill anything I plant. We tried corn, potatoes, melons, pumpkins and beans. They killed everything but the weeds. Please tell me if there is anything I can put on the ground that will kill the pests.—A. L. M., Elizabeth Lake.

Your description indicates that your land is alive with wireworms which continuous growth of vegetables which they like has induced to multiply. The best thing to do now is to plow up deeply (for the worms go down as far as eight inches) and expose the soil to autumn heat and drouth as much as possible. Leave it rough and let it bake and blister in the sun as much as it can, and fence the fowls on it, if you have fowls enough to work it over well. This winter put on grain, cut it early for hay and then plow up the stubble and disk it deeply at intervals next summer to continue the drying and burning process on the worms and keep on the fowls to do the catching also. If you keep at this for a year from this date, vegetables will be reasonably safe the year following. There is no application which can be trusted, though systematic use of carbon bisulphide, poured in holes made with a bar and then covered in, would probably kill a great many. This process would be reasonable, but we are not aware that it has been demonstrated. The best natural enemies of wireworms are frogs and toads, and the horned toad is particularly good at them. Possibly you could herd them on your patch from the adjacent Mojave regions to advantage.

Trees in Desert Conditions.

To the Editor: I have an orchard of about eight acres of different kinds of deciduous fruits. The soil is a sandy silt lacking in humus. Some of the trees grew for a time and then all of a sudden dried up and died. I could find nothing the matter with the roots, or any holes around them. On some there is a black line around the trunk just at the surface of the ground. We irrigate by hand and dig a trench around each tree. What is the best commercial fertilizer to put around the fruit trees when we irrigate?—C. B. H., Gray Mountain.

You are in the Mojave desert region and are encountering conditions which are probably pretty near the line of tolerance by fruit trees. Certainly in such a soil you are not likely to give the trees by hand nearly as much water as they need to keep them growing in fierce heat and drouth—especially as the dry soil-mass all around draws away so much of the water which you do pour on. The black line you speak of may be alkali-burning or a scald by the sun before the water sinks away. If we were trying trees under such conditions we should whitewash from the main roots upward and cover the ground four feet around the tree with a litter of fine brush or dry weeds so that the sun could not get at the soil, and then pour the water through this litter. In this way you will keep the soil cooler and protect the bark from reflected heat. Do not put any commercial fertilizer around the tree. The desert soil is rich enough to grow young trees, if you can keep it cool and moist enough—unless it is loaded with alkali, which is also possible.

About Manure Pits.

To the Editor: I note in a recent issue that one man uses a pit with false bottom to hold manure up out of the liquid. Why so? I find that manure even in small quantities, without sufficient moisture, heats and burns, thereby driving off ammonia and burning up humus, two of the most valuable parts of the manure. The problem with me is to have a pit that will hold all the liquid and manure, and I think a pump to pump the liquid over the solids would be of value. By keeping manure in this condition, would it not prevent the breeding of flies, also an important problem?—E. E. G., Merced.

It depends upon the amount of liquids which go to the pit. If this is increased by flushings, the

pit will fill with liquid and submerged solids. Submerged solids will not compost properly and the mass will be heavy and mean to get out of the pit. Therefore, under certain conditions, a false bottom and a pump would be very desirable to get out the excess liquids for spreading with a cart or an irrigation ditch over grass lands, etc. Where the amount of liquid is not relatively large, your plan of using a pump would be reasonable, but probably not necessary, for the coarse stuff would be likely to currently absorb and hold it. Keeping the solids submerged would prevent fly-breeding, but keeping it moist enough for slow fermentation would not bother the flies, but they do not operate usually in manure which is more than about ten days old.

Cutting Back Acacias.

To the Editor: This spring I planted acacia trees and they are inclined to grow very tall and spindly and have to be supported by tall stakes. I would like to know if it will do to head them back: to cut them off, say, seven or eight feet from the ground. If this is practicable, when is best time to cut them off?—A. W. M., Hughson.

Our experience indicates that acacia trees do not care how much they are cut back or when. We should cut as soon as it seemed to us desirable. But though the tree does not care the grower ought to. That, however, depends upon what kind of acacia it is. If it is a species which naturally makes a tall, pyramidal tree (like the melanoxylon or black-wood) it makes an ugly tree to cut back the leader. Perhaps the most grotesque trees we have ever seen are some street trees of black-wood acacia which were topped off by the electric light wiremen and then undercut by the street department for the protection of circumambient millinery. On the other hand there are other acacias which will stand forming like a peach tree and still look well. Leaving out all questions of taste, we should say: cut your acacias when you like and the sooner the better.

Sour Cherries for Elevations.

To the Editor: You recently said in answer to a question that sour cherries are good in frosty places. How will they do at elevations of 4000 feet which are good for grain and alfalfa but only make a fruit crop about twice in five years?—C. E. B., Petaluma.

Sour cherries are probably best for hard places because the trees have natural sense enough to remain dormant through the occasional warm spells in the winter. When such high temperature is followed by hard freezing many trees, both fruit and ornamental, are apt to be hurt. Trees which keep quiet then and start late in the spring are most likely to come through with fruit. But at elevations there are also, in some years, sharp frosts in late spring or early summer which kill young fruit which has started reasonably late. Apples sometimes are lost that way and when they go we should expect to lose sour cherries also. But it is still true that where there are hard winters you may get sour cherries when you have practically no chance with sweet cherries.

Action of Lime and Sub-soiling.

To the Editor: Will lime or anything else applied to red soil with clay near surface help toward making porous the underlying clay so as to keep trees from sour-sap? Will sub-soiling help drainage much?—L., Esparto.

Lime in solution will promote friability of clay so far as it comes into contact with it, near the surface or below, but the effect will be too slight to prevent sour sap from lack of drainage. Sub-soiling might help drainage very much if it reached below a thin hardpan layer and broke it up, admitting water to pervious layers below. Otherwise it would not help drainage much. It would, however, increase the water-storage capacity of the land.

Knobby Peaches.

To the Editor: I send a peach, showing a disease that has ruined one-fifth of my crop this season. It was worse on my Muir peaches than the Crawfords or Elbertas. This is a seedling peach I am sending you, and it is not so bad on them.

I sprayed for curl leaf last spring, and had very little of it, but this canker, or whatever it is, has spoiled a great many fine large peaches.—J. G. L., Arroyo Grande.

The knobby appearance is due to the fact that when the peach was very small it was bitten into or punctured here and there by some small insect. Wherever the bite or puncture was placed the flesh refused to grow—leaving pits here and there because the rest of the pulp enlarged naturally. The result is the knobby, warty, or pitted peaches. It is not known what insect does this, and until it is caught at work, cannot tell whether it is a "biter" or a "puncher," and therefore cannot say whether it can be poisoned, as is the codlin moth larva, or not. The spray for curled leaf naturally would not bother this pest.

Red Spider Makes a Clean Sweep.

To the Editor: A few days ago, one of my fine, healthful bean plants changed entirely to the condition of this leaf which I send. The next day they all went the same way. Since then everything, such as peas, tomatoes, turnips, lettuce, cabbage, etc., seem to have perished. The plants are in the midst of an orange grove; soil red and fertilized with horse manure and commercial fertilizer; irrigation regular and careful cultivation. If it is a disease, please let me know how it can be prevented or cured.—J. M., Oroville.

This bean plant has made large growth and the root is healthy. The foliage has gone yellowish white and is roughened or scarified. The injury is apparently due to red spider, which is abundantly present. In the interior this pest finds heat and dry air, which enables it to multiply marvelously. The protection of the plants can be secured by sulphuring the leaves just as almonds are sulphured for the same pest and grape-vines are sulphured for mildew. This must be begun much earlier in the season, as soon as the weather gets dry and hot, and continued at intervals as the plants make new leaves.

Grasses for Wet Land.

To the Editor: Will Italian rye grass do well on very wet ground, and what is its feeding value? Will it reseed itself and when is the best time to sow? The meadow now grows wild grasses; in the drier parts grasses such as mesquite, clover and wild timothy; on the wet part of the meadow all kinds of slough grass and plenty of it. Will rye grass do or is something else better?—W. W. B., Kelseyville.

We know nothing better than the rye grasses for such a place. They will grow on wet, cold ground; they will stand overflow and summer baking of a heavy soil also, if there is moisture underneath. We should sow Italian and English rye together, half and half, and add a little alsike and common red clover also, for sometimes they hold on well on land where water kills out alfalfa. Get in the seed in advance of the rains or very soon after they start, so as to start the plants well before there is enough cold water to rot the seed.

Woman Apricot Grower.

To the Editor: I am a woman farmer. I harvest over 7½ tons of dried apricots from eight acres, and 300 crates of green fruit. I do all the managing—have followed the farming business for over 15 years. The land seems well adapted to apricots, though they make a specialty of almonds here. It is going right ahead as a fruit country. This is my second year here. I hope to have a record crop next year by heavy pruning and spraying.—Mrs. P. J. M., Arbuckle.

How you prune and spray, and why, might make your story complete and of value to our readers.

Lime and Flies.

To the Editor: Would sprinkling the manure pile with lime keep flies from breeding? Would the lime injure the manure?—F. P. W., Soulsbyville.

Lime has no standing for treating manure to prevent fly-breeding. If it is caustic lime it will injure manure by setting free ammonia.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., September 5, 1916.

STATIONS	Past Week	Rainfall Data		Temperature Data		
		Seasonal To Date	Normal To Date	Max'm	Min'm	
Eureka .....	.12	1.78	.26	70	50	
Red Bluff .....	.06	.68	.07	96	56	
Sacramento .....	.00	.07	.02	90	46	
San Francisco .....	.01	.33	.01	76	50	
San Jose .....	.00	.01	.06	82	48	
Fresno .....	.00	.07	.00	98	58	
Independence .....	.00	.20	.00	90	44	
San Luis Obispo .....	.00	.00	.05	86	48	
Los Angeles .....	.00	.00	.00	82	56	
San Diego .....	.00	.00	.00	70	58	

California Fruit Growers' Exchange, 1916.

[Extracts from Annual Report by General Manager G. Harold Powell.]

During the year ending August 31, 1916, there were shipped from California 37,279 cars of oranges and 7,258 cars of lemons, making a total of 44,537 cars. The Exchange shipped 24,056 cars of oranges and grapefruit and 5,812 cars of lemons, consisting of 9,666,722 boxes of oranges, 75,533 boxes of grapefruit, and 2,363,173 boxes of lemons. The money returned by the Exchange to the shippers approximates \$27,500,000, which is nearly 7 million dollars more than the largest preceding year, or an increase of approximately 33 per cent. The delivered value of the fruit is approximately 38½ million dollars. Using the Exchange returns as a basis for computing the value of the crop, the amount returned to California for the citrus crop of 1915-16 equals \$41,000,000.

Figuring on a carload basis, Exchange growers forwarded 67 per cent of the total shipments, which is an increase of 4½ per cent over last year in the proportion of the crop handled. This increase represents the largest annual gain in membership in recent years and brings the proportion of the crop handled by the Exchange to the highest percentage in the history of the industry. Since the close of the shipping season several associations of growers whose fruit is not included in the proportion given have joined, while no association has withdrawn from the Exchange. There are more than 8,000 growers in the Exchange.

In thirteen years the Exchange has returned to California \$192,500,000 and during this period the losses from bad debts and from all other causes have amounted to only \$7,688.56, or two-fifths of one one-thousandth of one per cent of the total returns. This business represents transactions with 2,500 jobbers in the United States and foreign countries.

Cost of Exchange Service.—It cost Exchange shippers approximately 4½ cents per packed box to distribute and sell oranges, and 5¼ cents per packed box to sell lemons to 2,500 jobbers. This makes an average marketing cost of 4.65 cents per packed box. The growers also paid an average of 1 cent per box for the District Exchange service, making the total average distributing and selling cost 5.65 cents per box, or 1.73 per cent of the delivered value of the fruit.

In addition to the above approximately 2½ cents for every box of oranges and 4 cents per box for lemons was invested in national advertising and in the dealer service work through which the publicity is made more effective and the jobber and retailer are brought into closer relationship with the Exchange. The Exchange service, including that of the central office and the 77 sales agencies in the United States and foreign countries, is not only the most comprehensive that has been developed for any agricultural crop, but it is also less expensive than any other general marketing service, even when the cost of the "Sunkist" advertising is included.

Exceptional Conditions.—There has been a wide difference between the conditions under which the cit-

rus fruit crops were marketed in 1915-16 and in 1914-15. Abnormal prosperity has been general this year. Men were unemployed, buying power was low, and the demand for citrus fruits was at low ebb. Weather conditions throughout the United States and Canada have been favorable for the movement of the crop. Excessively hot weather in July and the first half of August, which contrasted with the abnormally cold summer in 1915, created a strong market for lemons and Valencia oranges, both of which are used in large quantities during hot weather in cold drinks. There has been little frosted fruit to market, the quality of the navels, Valencias, and lemons has been good, and the distribution backed by the accumulative effect of national advertising has been wider and more uniform than in any previous year. The high point in the country's prosperity which has caused extraordinary demand for food products by the laboring classes should not be considered an index of what the industry may expect when trade conditions again become normal.

Navel Conditions.—There are in California 40,000 acres of Washington Navel orange trees below the bearing age. The crop must be marketed in the face of rains in California and cold weather in the East, which interfere with the most uniform daily distribution. It must also be marketed in competition with the Florida crop which is slightly more advanced in maturity. The shipment of only mature oranges early in the season, coupled with national advertising, is fundamental in increasing the consumption of the fruit and successfully meeting Florida competition. Improvement in cultural methods will bring about better oranges, the control of brown rot by orchard treatment and a more careful handling of the fruit to prevent blue mold will help raise the low prices generally realized in February, while the growth of the Exchange will make it possible to market a larger proportion of the crop under the most desirable conditions.

The 1916 Valencia Crop will be the largest in the history of the industry and will aggregate between 13,000 and 14,000 carloads. In 1915, the Valencia shipments equalled 9,500 carloads, and in 1914, 12,000 carloads. The crop as a whole is of excellent quality. Notwithstanding an increase of over 40 per cent over the crop of 1915 and a predominance of small sizes, the Valencia grower's average return has been equalled only once in recent years. This is due to the unusual prosperity of the country, the national advertising of the Valencia as a summer fruit, the development of a very large consumption of orange juice as a result of the Exchange's advertising and promotion work, and to the uniform distribution of the crop week by week. Hundreds of orange juice stands have been established throughout the country during the last two years, fresh orange juice as a beverage has been pushed by drug stores, soda fountains and restaurants, and the

custom of drinking orange juice in the home has been established by a campaign inaugurated by the Exchange three years ago.

The Lemon Crop shipped by the Exchange growers, amounting to 2,363,173 boxes, is larger than that of any previous season. The number of lemon shippers who have joined the Exchange this year is the largest in the last ten years. The demand made it possible to ship freshly picked fruit throughout the season, and as a consequence it has been received with general satisfaction. The year-round distribution has never been so wide or so uniform. There has been an unprecedented demand for lemons during July and the first half of August as a result of the extreme heat east of the Rockies. Exchange shipments during the period of high

prices were the heaviest of the season.

The demand for lemons in the summer time depends primarily on weather conditions because the fruit is used largely in making cold beverages. When the summer is cold, as in 1915, the demand for cold drinks is lessened and a large crop cannot be moved at satisfactory prices. In 1916, the total supply of California and foreign lemons sold in June, July and August was approximately 192,907 boxes above the average of the last five years, notwithstanding the higher prices. The receipts of foreign lemons have been lower than the average of the last five years.

Note: As this report was prepared a few days prior to the end of the fiscal year, data regarding shipments may be slightly changed.

Fall Irrigation Helped Peaches.

[Written for Pacific Rural Press by J. P. Duff, Fowler.]

[Mr. Duff got fall growth four inches long on two acres of his seven-year Muir peach trees, by flood irrigating them Sept. 1, 1914, after the light crop had been off about 10 days. The soil is sand twelve feet down to water. The trees had stopped growth, not having been irrigated since June. The four-inch 1914 shoots grew thriftily through 1915. They were located along the main limbs, protecting them from sunburn, and where the fruit did not exert destructive leverage on the limbs. The irrigated trees were in 1915 noticeably thriftier in growth and greener in foliage than those nearby which had not been fall irrigated.]

"Two years ago I irrigated two

acres of peach trees after the fruit had been picked. I got a good crop last year and this year too. The trees look fine—no red spider or little-leaf on them as on a good many trees that have not had plenty of water.

"This summer I intended to irrigate my entire orchard after the fruit was off, but help was so scarce that I didn't get it done till the water was gone.

"I certainly would advise any one to irrigate in late summer if at all possible.

"Summer Pruning.—We thin out the inside branches on young peach trees and avoid much heavy pruning in winter. Also prune apricot trees in July after the fruit has been picked.

THOSE DATE PRICES.

There seems to have been something fearfully wrong with our date price figures in the issue of Aug. 19. We print below, extracts from a letter written by Carl R. Loop, Deputy Consul General at London, England, to Prof. J. Eliot Coit of the University of California under date of April, 1914.

"The quantities of dates imported into the United Kingdom in 1912, the latest year of which statistics are available, were as follows:

	Cwt.	Value
From France	37,052	\$ 351,785
From Turkey, Asiatic	525,012	1,574,006
From Egypt	11,381	64,451
From Tunis	90	720
From Persia	30,887	84,535
From Other Foreign Countries	2,756	8,234..
From Gibraltar	868	12,653
From British India	10,774	31,545
From Other British Possessions	331	881
	619,158	\$2,128,810

1 cwt equals 112 lbs.

The quantity received from year to year, however, shows considerable fluctuation; in 1911 only about a quarter of the above total was imported. In years when the crop is small, and the imports correspondingly low, prices necessarily rise. At the present time whole sale prices of dates range as follows:

Sayir (Persian) ...	\$2.43 to \$2.67 per cwt.
Khadrawi (Persian) ...	3.18 to 3.65 per cwt.
Halawi (Persian) ..	3.77 to 4.02 per swt.
Tunis (in boxes or cartons, each containing 1 lb.)	2.92 per case of 50
Dates from Asiatic Turkey averaged about	\$3.00 per cwt

In 1913, for the first time, dates were imported into London from the

United States to the extent of 4,237 cwt., valued at importation at \$7,971, or approximately \$1.88 per cwt.

The Deglet Nur date, I am informed, is not known in this country. It is stated that the market here is very well supplied with Algerian and Persian and other dates, and there is not a very good demand for a high class article such as the Deglet Nur date is understood to be.

MALAGAS GOING WRONG.

To the Editor: I have Malaga grapes and fear that something is lacking in the soil. Stable and green manure they have had quite a good deal each year. Vine growth is usually heavy but there is not sufficient setting of fruit, and so much of the fruit this year softens, shrivels and has a sour, bitter taste. Some berries do not develop and mature in size and quality as they should—M. H. M., Reedley.

[Answered by Prof. E. T. Bieletti.]

As the vines are making good growth this fact may be taken to indicate that the soil is probably all right. The failure of the fruit to set may be due to spring frosts or to improper pruning. Strong growing Malaga vines require spurs of three or four buds. The poor quality of the grapes which do grow, however, cannot be accounted for in this way. It may be that there is some disease present, but I am unable to say from the writer's description. If he will send me a small sample of the grapes, leaves and canes I may be able to determine whether any disease exists.

Cover Crops for Soil, Fruit and Livestock.

Alfalfa and Oats Have Softened a Cementy Soil, Helped Rejuvenate the Apricot and Prune Orchard, and Furnished Hay for Livestock on the Ranch.

(Written for Pacific Rural Press.)

The soil in F. R. Shafter's apricot and prune orchard six years ago "would cement together like a road after every rain." The trees of both kinds of fruit were in bad shape, half dead. He took out half of them. They had been 20 feet apart. The rest are in fine shape now, and the soil takes water better and works finer.

There are 25 tons of red oat hay in the barn now, which will feed the livestock. It was taken from the 10 acres of prunes; and he expects two tons per acre of dried prunes this season from the trees, which were planted some 30 years ago.

From five acres of apricots, he was taking the fourth cutting of alfalfa about the middle of July. Some of the alfalfa not yet cut stood over hip tall and in full bloom, with new growth from the crown 6 to 12 inches tall; and a good stand close to trees as well as in the middles. This was fed to the cows through summer and winter.

For six years this alfalfa has furnished hay, shaded the ground, and subsoiled it without injuring the tree roots. The trees are vigorous, healthy, and clean with plenty of big dark leaves and good wood growth.

A heavy crop of fruit set last spring, but the rains rotted it, so the crop is light, in common with the rest of the State.

An uncultivated orchard in Santa Clara Valley is rare in summer. It seemed a sign of shiftlessness to neighbors, who prophesied ruin of the orchard when they saw Mr. Shafter's alfalfa and oats growing after they had plowed their orchards.

Alfalfa in the orchard was not an experiment with Mr. Shafter six years ago, for he had been growing it on a half-acre back of the farm buildings for five years before. This half-acre was not plowed up until 1914. It was sowed again, and pastured too close for hay. In the 5-acre piece, alternate rows of trees are checked, with trees in the levees. The first irrigation in spring takes

three days. The soil is not yet sufficiently improved; for later irrigations require only two days. Probably this is due to use of the hay instead of disking it in. It takes five or six hours for water to reach the lower end in spring when winter rains have softened the plowpan; but in summer it gets there in three hours. Every cutting of alfalfa is irrigated twice, with some variation in both irrigation and cutting at apricot picking time.

Alfalfa among prunes, looked to Mr. Shafter like too much unnecessary work and injury to fruit at harvest.

Oats Among Prunes.—When oats were first sowed among the prunes six years ago, Mr. Shafter hadn't gotten a crop in two years from the trees, and the ground was so poor and hard that even oats wouldn't grow well. They had to be sowed two or three times.

Now they yield so well that the hay stored in the barn will last two years; and this fall a legume cover crop will be planted to turn under in the spring.

Last winter, 12 sacks of red oats were planted on the 10-acre prune orchard after the first rains, Dec. 23. They were cut just before May 25, 1916.

This ground was then irrigated in the three days ending June 20, and as soon as dry enough it was plowed. Then it was worked down fine, finishing the cultivation July 18 with a clod-masher, ready for fruit to fall on the smoothed ground. Plowing was charged to the hay, so only cultivation was charged to the fruit.

Horticultural Commissioner Day of San Benito county reports the total bearing acreage of fruits in his county as follows: prunes 2400 acres, apricots 1500, peaches 525, apples 325, pears 250, almonds 125, cherries 70 and walnuts 25. There are 1100 acres of non-bearing prunes in the county and 1258 acres of non-bearing apricots. Last spring there were planted 42,153 prune trees, 28,100 apricot trees, and 20,066 pear trees, besides a smaller acreage of walnuts and almonds.

ACREAGE, YIELD, AND VALUE OF HORTICULTURAL AND AGRICULTURAL PRODUCTS OF RIVERSIDE COUNTY, 1915. (Compiled by County Horticultural Commissioner D. D. Sharp.)

DECIDUOUS.				
Variety	Acreage	Bearing Percent	Yield (Tons)	Price
Almonds	1,405	60	225 1/2	14c per lb.
Apples	3,330	24	487 3/4	3c per lb.
Apricots	6,011	44	8,430 1/2	\$36 per ton
Cherries	363	8	13	10c per lb.
Dates	600 trees		12 1/2	\$1 per lb.
Grapes	2,448	96	15,102	\$10 per ton
Olives	2,062	75	1,664	\$50 per ton
Peaches	2,894	63	6,152	\$22 per ton
Prunes	615	79	504 dry	\$80 per ton
Pears	948	32	825 1/2	\$30 per ton
Walnuts	2,002	20	91 1/2	12 1/2c per lb.
Totals	22,087	51	34,260 1/2	
Value				
				\$871,612
CITRUS				
Lemons	4,954	52	486,972 boxes	\$2 per box
Oranges	19,475	84	1,636,830 boxes	\$1 per box
Citrus	24,429	77	2,123,802 boxes	
				\$2,610,774
AGRICULTURAL				
Alfalfa	25,384		118,897 tons	\$12 per ton
Cotton	1,700		1,631 bales	12c per lb.
Beans	1,111		234 1/2 tons	\$100 per ton
Beets	750		9,000 tons	\$6 per ton
Potatoes	856		29,960 sacks	\$1.56 per sack
Grain & Hay	78,620		628,960 sacks	\$1.15 per sack
				\$2,372,115
Total value of Products				\$5,854,501

*The yield and value of the Hay and Grain crop is computed as entirely of grain, as it is not possible to segregate the two, but estimating the yield of hay for the entire acreage at 1 1/2 tons to the acre and the value at \$10 per ton, the result is not materially altered, the returns being approximately the same, with slight favor to grain.



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Aspects of Fruit, Nut and Grape Crops.

[Written for Pacific Rural Press.]

Compiled on the basis of the estimated per cent of a total normal crop of those counties in which more than two per cent of the respective fruits, nuts, and grapes are grown, the September report of Geo. P. Weldon, Chief Deputy State Horticultural Commissioner, shows all of them with the exception of walnuts, to be a below normal yield.

Almonds in the 10 counties growing 76 per cent of the total acreage average 66.5 per cent of a full crop, Butte with 12 per cent of the total acreage having 15 per cent of a crop, Colusa 4 per cent acreage and 75 per cent crop, Contra Costa 11 per cent acreage and 70 per cent crop, Los Angeles 2 per cent acreage and 80 per cent crop, Riverside 3 per cent acreage and 90 per cent crop, Sacramento 6 per cent acreage and 65 per cent crop, San Joaquin 12 per cent acreage and 50 per cent crop, Stanislaus 6 per cent acreage and 80 per cent crop, Sutter 9 per cent acreage and 75 per cent crop, Yolo 11 per cent acreage and 65 per cent crop.

Apples in seven counties having 90 per cent of the total acreage average 85½ per cent of a full crop, Humboldt with 2 per cent acreage having 100 per cent crop, Los Angeles 2 per cent acreage and 100 per cent crop, Monterey 12 per cent acreage and 65 per cent crop, Nevada 3 per cent acreage and 100 per cent crop, San Bernardino 4 per cent acreage and 50 per cent crop, Santa Cruz 51 per cent acreage and 85 per cent crop, Sonoma 16 per cent acreage and 100 per cent crop.

Figs, in eight counties with 84 per cent of the total acreage averaging 90½ per cent of a normal crop, Butte with 3 per cent acreage having 100 per cent crop, Fresno 53 per cent acreage and 100 per cent crop, Madera 3 per cent acreage and 60 per cent crop, Merced 9 per cent acreage and 90 per cent crop, Stanislaus 5 per cent acreage and 90 per cent crop, Sutter 3 per cent acreage and 100 per cent crop, Tulare 6 per cent acreage and 95 per cent crop, Yuba 2 per cent acreage and 90 per cent crop.

Peaches, in 13 counties, with 85 per cent of the total acreage, average 66 per cent of a normal crop, Butte with 3 per cent of the acreage having 30 per cent of a crop, Fresno 29 per cent acreage and 60 per cent crop, Kings 6 per cent acreage and 90 per cent crop, Los Angeles 4 per cent acreage and 85 per cent crop, Merced 3 per cent acreage and 70 per cent crop, Placer 6 per cent acreage and 75 per cent crop, San Bernardino 5 per cent acreage and 60 per cent crop, San Joaquin 8 per cent acreage and 75 per cent crop, Santa Clara 5 per cent acreage and 75 per cent crop, Siskiyou 3 per cent acreage and 5 per cent crop, Sutter 2 per cent acreage and 75 per cent crop, Tulare 9 per cent acreage and 85 per cent crop, Yolo 2 per cent acreage and 75 per cent crop.

Pears, in 12 counties with 76 per cent of the total acreage average 66 2-3 per cent of a normal crop, Alameda with 2 per cent of acreage having 80 per cent of a crop, Butte 2 per cent acreage and 70 per cent

crop, Contra Costa 6 per cent acreage and 65 per cent crop, El Dorado 3 per cent acreage and 60 per cent crop, Lake 8 per cent acreage and 40 per cent crop, Napa 4 per cent acreage and 70 per cent crop, Placer 7 per cent acreage and 70 per cent crop, Sacramento 18 per cent acreage and 60 per cent crop, Santa Clara 9 per cent acreage and 50 per cent crop, Sonoma 6 per cent acreage and 80 per cent crop, Tehama 2 per cent acreage and 75 per cent crop, Yolo 9 per cent acreage and 80 per cent crop.

Prunes, in seven counties with 82 per cent of the total acreage average 55 per cent of a normal crop, Butte having 2 per cent of acreage and 35 per cent of a full crop, Napa 4 per cent acreage and 40 per cent crop, San Benito 3 per cent acreage and 60 per cent crop, Santa Clara 55 per cent acreage and 55 per cent crop, Sonoma 12 per cent acreage and 45 per cent crop, Tulare 4 per cent acreage and 95 per cent crop, Yolo 2 per cent acreage and 50 per cent crop.

Walnuts, in five counties having 100 per cent of total acreage average 78 per cent of a normal crop, Los Angeles having 30 per cent of the acreage and 70 per cent of a full crop, Orange 38 per cent acreage and 100 per cent crop, San Bernardino 2 per cent acreage and 90 per cent crop, Santa Barbara 10 per cent acreage and 65 per cent crop, Ventura 20 per cent acreage and 65 per cent crop.

Grapes.—Percentages of a full crop in the various varieties are given by counties as follows: Butte, 70 per cent raisin crop, 70 per cent table; Fresno, 100 per cent raisin, table and wine; Kings, 100 per cent raisin and table; Los Angeles, 100 per cent raisin, table and wine; Madera, 110 per cent raisin, 90 per cent table, 110 per cent wine; Merced, 100 per cent raisin, table and wine; Napa, 35 per cent wine; Sacramento, 25 per cent raisin, table and wine; San Diego, 100 per cent raisin, table and wine; San Joaquin, 50 per cent table, 70 per cent wine; Santa Cruz, 50 per cent table and wine; Sonoma, 70 per cent raisin, table and wine; Stanislaus, 125 per cent raisin and wine and 110 per cent table; Sutter, 100 per cent table and wine, 90 per cent raisin; Tulare, 100 per cent raisin, table and wine; Yolo, 80 per cent raisin, table and wine; Yuba, 100 per cent raisin, table and wine.

WHY THOMPSONS AND NOT MALAGAS?

To the Editor: I have some Malagas and Thompsons on so-called dry-bog land but which is mixed with the heavier red soil. Thompsons did finely this year, but the Malagas do not yield much. Is it the fault of the soil or can it be improved? Is it possible that the vines did not get enough water? Is the soil too rich? The vines make a lot of wood in the stem, but did not throw out the wood that yields the crop. Would you graft them, or can you assure me that the soil is good for that kind of grape?—S. W., Fresno.

[Answered by Prof. F. T. Bioletti.]

From the indications of your correspondent's letter there seem to be

two possible explanations of the failure of his Malaga grapes to bear well this year. The forcing out of a lot of water sprouts from the stems might be caused by a spring frost destroying the fruit shoots or by too short pruning. If the fruit wood of the Malagas is lower than that of the Thompsons the latter might be high enough to escape the frost, which would account for their bear-

ing when the Malagas do not. If the soil is good enough to give good crops of Sultanina (Thompson Seedless) there is no reason why Malagas should not do well also.

Yuba and Sutter counties are facing the total destruction of their vineyards by the root-louse, or phylloxera. No effective remedy has yet been found for this pest.

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VETCH
BUR CLOVER
CANADA PEAS
RYE

and

MELILOTUS INDICA (Yellow Sweet Clover)
MELILOTUS ALBA (White Sweet Clover)

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ORCHARD TILE IRRIGATION.

To the Editor: I wish to irrigate a side-hill orchard so steep that surface water will run off rapidly and cut. Is tile irrigation pipe practicable if laid well below the plow?—E. H. W., Escondido.

[Tile irrigation is practiced in Florida truck gardens, but we know of none in California. For your steep hillside orchard we see no reason, unless it is first cost, why you shouldn't tile it on gentle contours with a line of small tile above each or alternate rows. It would be much more economical in maintenance and operation than surface irrigation, and will be more effective in reaching the roots, as well as in preventing evaporation of the water and baking of the surface soil.

That roots would not interfere seriously seems indicated by orchard drainage experiences. Among these G. Bray of Santa Clara county, whose drain tile were placed about three feet deep in adobe soil among two-year prune trees in 1891. Alfalfa roots plugged the tile in a field through which it ran, but in the orchard, prune roots never bothered. You could not do a half-job of irrigation very long, however, for the roots would naturally concentrate around the tile if moisture is lacking elsewhere.]

NEW PROLIFIC ALMOND.

To the Editor: A successful orchardist near Knightsen, George Smith, has been propagating a new variety of almond having a remarkable combination of good qualities. It is called "Smith XL," resembling IXL, but somewhat rougher and darker, with a heavier kernel.

It is a most prolific bearer, beginning the year after grafting, and the parent tree, a seedling, has had bumper crops every year for 18 years.

I grafted about 150 trees to this variety in 1915 (January) and this season gathered from one unusually vigorous tree a sack and a quarter of almonds and hulls.

These almonds are far superior to Texas, being surer bearers of much larger and softer nuts. We should show some appreciation of the good work done by Mr. Smith, as he has distributed scions generously gratis.—E. W. R., Oakley.

BLACK BEETLES ON STRAWBERRIES.

To the Editor: I lost my berry patch every fall for six years and now have had a patch that can't be beat for two years. The first berries we had were Climax and the bugs just live on them. We then tried Klondike, Clarke's seedlings, Dollar, and Ettersburg No. 121. The bugs didn't affect Dollar and Ettersburg, but they took all the others, so we beat the bugs and planted nothing but Ettersburg and Dollar. Catch every black beetle you see, as they lay the eggs. Jack Moungovan. Point Arena.

GRAPES ON SPRING GRAFTS.

[Written for Pacific Rural Press.] "I know a number of growers who are planning to dry Zinfandels this year, because they can make more money out of the poor quality

raisins than by selling for wine making," says one of the De Lano Bros. of Fresno county. Not many are interplanting trees among vines, but many are grafting their wine varieties to table and raisin varieties. One of my neighbors grafted some last spring and has a few bunches on the new grafts this first season. Some vines now have as many as four fairly good sized bunches on each. The sooner the rest of our wine grapes are grafted over, the better it will be for our raisin market, by eliminating the

poor quality raisins that are being made from wine grapes."

SPANISH MEASLES ON MALAGAS.

To the Editor: I am sending you a bunch of diseased Malaga grapes. Kindly tell me the trouble and a remedy.—M. H., Livingston.

[Answered by Prof. F. T. Bioletti.]

The spotting and drying up of the berries is what is usually called Spanish measles and the cause is not well known. It seems in some cases

to be due to an injury to the trunk or roots of the vines. Plow wounds or severe pruning wounds will sometimes be followed by these symptoms. Also, too much water in the soil in summer causes this trouble.

The head of the Fresno Internal Revenue District has sent out 17 gaugers to as many wineries in that district where the crushing of grapes for the manufacture of sweet wine has started. It will be their chief duty to check the brandy used for fortifying the wines.

THE CAR AHEAD A Hudson Super-Six

When you buy a car in the Hudson class you buy that car to keep. So the question is a big one. What that car is or isn't matters much for years and years. Let us look facts in the face.

Always the Master

The Hudson Super-Six, under every condition, will or can be "The Car Ahead."

No other stock car ever went so fast. None ever went so far in one day. None ever climbed such hills on high gear. And none ever picked up so quickly.

Those are facts based on official tests. And no car built can successfully dispute them.

So the Super-Six owner, in traffic or on highways, on hills or on levels, feels himself the master of the road.

Why You Should Care

We hear men say, "Well, I don't care. I don't want speed. I don't need that power."

But you do want—don't you?—the best car in your class, when you pay about the price that gets it.

Let the extra capacity remain latent capacity. Keep the speed and the power in reserve.

You can out-distance your rivals without going faster, because of the quick pick-up. In traffic and in hill-climbing you have less change of gears. Everywhere you get effortless performance. And you rarely tax the motor to half its capacity. That means long life and economy.

80% More Efficiency

The Super-Six invention—patented by Hudson—has added 80 per cent to this motor's efficiency. It does this by reducing vibration, the cause of motor friction. So it adds just as much to motor smoothness. And it adds just as much to endurance.

Our radical tests—like those cited below—seem to prove that the Super-Six doubles endurance.

The motor is the heart of your car, and the life of it. The leaders of motordom have always led on motors. Why should any man buy a fine car now without demanding that motor supremacy?

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More than 14,000 Hudson Super-Sixes are now in the hands of owners. You can anywhere learn how men like them. Parts are ordered or on hand for 31,000 more. So there will be no change in the Super-Six so far as we can see ahead.

By quadrupling our output we are now, for the first time, keeping close to the demand. So fine car buyers can now get the car they want.

No Feats Like These Ever Before Performed

All made under A. A. A. supervision by a certified stock car or stock chassis, and exceeding all former stock cars in these tests.

100 miles in 80 min., 21.4 sec., averaging 74.67 miles per hour for a 7-passenger touring car with driver and passenger.

75.69 miles in one hour with driver and passenger in a 7-passenger touring car.

Standing start to 50 miles an hour in 16.2 sec.

One mile at the rate of 102.53 miles per hour.

1819 miles in 24 hours at average speed of 75.8 miles per hour.

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Touring Sedan \$2000
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(All Prices f. o. b. Detroit)

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DETROIT, MICHIGAN

Imperial Valley---A Land of Promise.

[Written for Pacific Rural Press by D. N. Morgan, Assistant Professor of Agriculture, Berkeley.]

Never before have prospects for the farmer appeared brighter in Imperial Valley than at present. The speculators have nearly all pulled up stakes and the farmers are commencing to really work their land. The speculator is not needed to keep prices of land up, but the productivity of various places is now the deciding factor when a sale is made.

Land that has been scraped with a disc for all these years is being plowed with almost unbelievable yields resulting. Bermuda grass is recognized as one of the serious problems and instead of trying to sell the land to one who did not realize its effects, the farmers are plowing their Bermuda-infested alfalfa fields and planting crops that require cultivation, thus overcoming its evil effects. This spreading of Bermuda grass has been aided by the system of renting land to dairy and stock men who would pasture exclusively. It is actually looked upon by some, however, as a blessing in disguise, inasmuch as it has forced a desirable crop rotation on the exclusive alfalfa farmer. For years many dairy cows did not receive any feed other than alfalfa in one of its forms. They were profitable in a measure, but now other crops are used in the rotation so that more cows to the acre are being run and the land is increasing in productivity.

Greatest Year Yet.—Cantaloupes have been shipped in greater quantities than ever before. The banner day saw 218 cars leave the valley. All cantaloupes were standardized under the supervision of the U. S. Department of Agriculture. Good prices have resulted. Grapes have been going forward. The frost injury to grapes in the northern part of the State increased the prices of Imperial Valley grapes. The asparagus growers had their most successful year this past winter and spring; and the increasing acreage being prepared for winter tomatoes indicates their profitability. There are more cattle and hogs in the valley than ever before. More sheep were fed this winter than in the history of the valley; despite this increase in livestock 100,000 acres were withdrawn from raising feed and fodder and planted to cotton. The cotton prospects were never better. This indicates that better farming is the order. The plow, once believed unnecessary for best results under desert conditions, is rapidly replacing the disc in preparing land for crops. The manager of one of the leading implement houses in the Valley states that his firm has done more business in the past six months than in any twelve months preceding; that their sales have consisted principally of better farm implements to the successful farmers.

Silos are appearing here and there. Better dwellings are building. The critical period for the man who pioneered in the Valley has passed. He is now able to provide comforts for his family and improve his livestock.

One man, who seven years ago found it necessary to work out for his neighbors in order to secure food for his family, has brought his prop-

erty to such high cultivation that its production has paid off large portions of his mortgage each year for the past three years. Next year he will be out of debt, with his three hundred and twenty acres clear. He, of course, secured his land from the government for practically nothing and it will have taken him thirteen years to pay up for land, improvements, and equipment.

Another case is that of a man who struggled a number of years raising barley and milo, and finally saw that alfalfa and the dairy cow were needed. So well has he planned and worked that today his three hundred and twenty acres is free from debt, his improvements amount to \$25,000, and his gross income from the sale of cheese and sweet cream is better than \$1000 a month. His calves, hogs, etc., are additional revenue. This man has taken twelve years to accomplish this remarkable feat. He, also, received his land almost as a gift from the government and required this time to make it so productive.

Farmers Largest Bank Depositors.

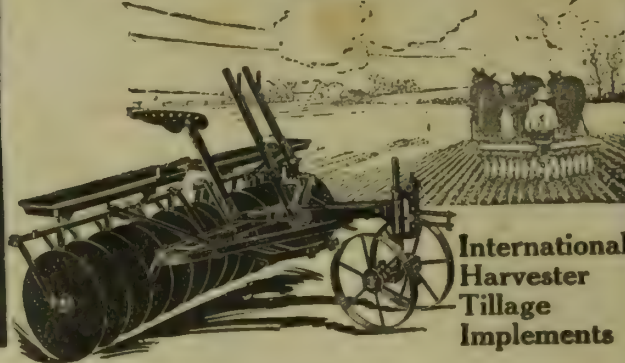
—There are many such successful cases coming to the front now. The bank deposits in the Valley exceed three million dollars and farmers are the largest depositors. Farmers are not trying to unload productive property, but are making long desired improvements, purchasing equipment, better stock, and increasing conveniences for their families. The banks of the Valley, with their very large deposits, are now amply able to take care of the needs of these men who have struggled through these years and have at last acquired property that can be offered for security.

Finances Needed for Strugglers.

But the bank laws do not permit their financing the small man over the critical period necessary to bring his land to full production. There are, however, in the Valley thousands of acres on which men are having a tremendous struggle against odds that did not appear when the first settlers came. They, like their predecessors, have come into the Valley with limited capital, and made the too frequent mistake of paying down on the land too large a percentage of it. Not having provided funds to live on until they could prepare their land and raise their crops, they have been forced to sacrifice their equities, move on to other places as renters or get out of the Valley. For men with adequate capital to purchase and stock their farms, an exceptional opportunity exists today.

Many renters who have had sufficient ability to acquire funds to buy stock after arriving in the Valley, have succeeded in building up their herds and saving a small amount of cash. They are the present buyers of Imperial land and would profit to the utmost if an adequate system of rural credits were put into effect. The community and the government would be farther ahead if these industrious men could be given financial encouragement in the acquiring of a farm home as soon as their thrift and honesty of purpose has been demonstrated. As it is, they

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THE better your seed beds the more money you make from the same acreage. The best seed beds are made with **International Harvester** disk harrows, spring-tooth harrows, and peg-tooth harrows. Our tillage catalogues explain fully, but read here a few reasons why these machines give the best field service:

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must struggle along under conditions that are not conducive to the highest development of citizenship. Their families are not given equal opportunity with their brothers who are employed in the industrial plants of our cities.

Adequate assistance of this nature furnished the farmers of Imperial Valley at this opportune time will make of it an empire little dreamed of by its founders.

TRANSPLANTING BIG PALMS.

To the Editor: How should we transplant palm trees about two feet in diameter to a place three miles away, where the soil is red and gravelly? Can we do anything now to improve that soil for the palms? What time of year is it best to transplant?—E. F. L., Esparto.

[Answered by John McLaren, Supt. Golden Gate Park.]

[Following is the method pursued throughout our work in Golden Gate Park:]

Four to six months before the palm is to be moved, it is prepared for moving by digging a trench around the stem, three feet deep and about four feet from the stem, and the side roots are cut with a sharp instrument. After the roots have been trimmed, a box made of two-inch lumber is placed three inches from the ball of earth. Between the ball and the box this three-inch space is filled with light rich soil. The plant is then thoroughly watered and kept well watered until the time for removal.

In about four months' time the newly placed soil is filled with young roots. As soon as the box is well filled with roots we dig down outside and below the bottom of the box and cut the tap roots and then board up the bottom of the box. In order to protect the leaves of the palm from being broken in the course of its removal, we place four standards, one at each corner of the box, sufficiently long to protect the tallest leaves and place enough braces between the standards to protect the palm. When this work is thoroughly completed, the plant is ready for moving.

When planting in its new situation, the lower side boards of the box should be removed and the top board left on all four sides of the box, so that all water given the plant will be forced to go through the ball, thereby keeping the whole ball moist.

Great care is taken that water in abundance is given each palm for at least a year after transplanting, not only throughout the summer months, but also during the winter, as the space which the roots can reach is very limited and any rain water which can reach the soil through the leaves will be absorbed by the roots much faster than the rain can supply. After the first year, provided the plants are doing well, the new roots reach out and summer irrigation is sufficient.]

[Note.—We transplanted young palms into decomposed red granite soil in Placer county in February, 1914. When seen in June, 1916, the ones that had been watered were in fine shape while two or three not watered were very much dwarfed. We dug holes considerably larger and deeper than the balled roots,

mixed loose dirt with manure in the bottom of holes, set the plants so when settled they were no deeper in the ground than they grew, and protected them from cows with latticed frames.]

BASTARD HOPS.

To the Editor: Are bastard hops caused by improper fertilization, a disease, or are they a degenerate variety? A number of people claim that they are caused by planting upside down.—E. J. P., Los Molinos.

[Answered by H. C. Yandle.]

Bastard hops, sometimes called sport hops, are a cross between a

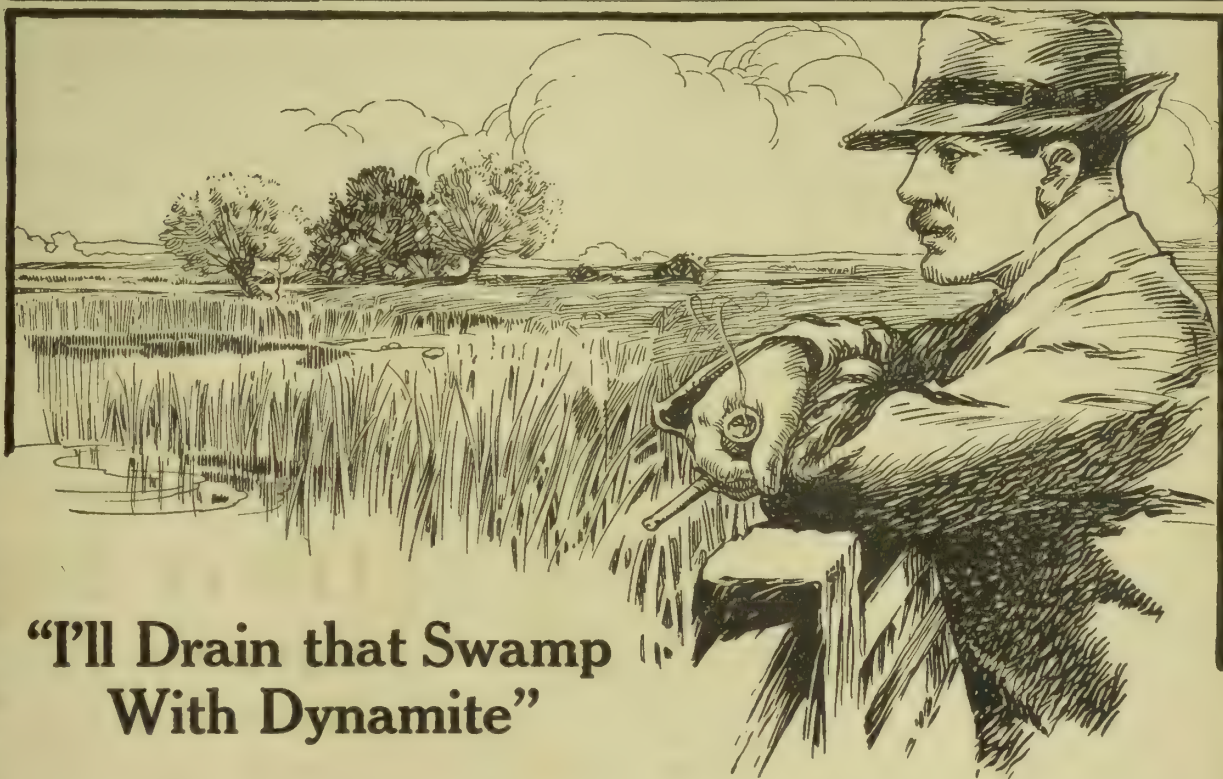
male and a female; same produce no hops, the bur never maturing. There seems to be no cause for this variety, simply being a freak. From what I can learn from our superintendent, fertilization or planting upside down would not produce this variety of hops.

LIME ON CLAY SUBSOIL.

To the Editor: Will lime of any kind help make underlying clay more porous, thereby helping to keep a young almond orchard from sour-sapping?—E. F. L., Esparto.

Air-slaked lime or ground lime-

stone will be most satisfactory for your purpose in general. Burnt lime or hydrated lime would act more quickly and powerfully, but is more dangerous to trees and burns out humus more. Apply two to four tons of ground limestone or air-slaked lime per acre, before the rains if convenient. It will open up the clay as far down as the water which dissolves it goes. If there is no natural or artificial drainage for the orchard, the granulating action of lime on clay will only open spaces for water and the last state of the soil will be worse than the first.



"I'll Drain that Swamp With Dynamite"

The man who is familiar with the use of dynamite on the ranch or farm finds that it serves many purposes. Not the least of these is the draining of swamp land.

If there is any low, wet land on your place, land that heretofore has been unproductive, drain it with Hercules Dynamite and make it pay its way. You will find that by using dynamite you can do the work more quickly, more thoroughly, and at less expense than by any other method.

HERCULES DYNAMITE

naturally gives as good results when used for running irrigation ditches as when used in drainage work. Until you have tried it yourself or seen it done it is impossible to imagine how quickly a ditch can be run with dynamite. There is no dig-dig-dig about it. A line of charges is planted—exploded by means of a blasting machine—and there's the ditch. Or if the land is very wet no blasting machine is necessary; simply fire the center charge with cap and fuse; it will fire the next one, and so on down the line.

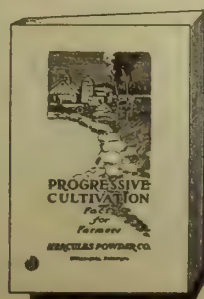
Oftentimes wet places can be drained with one charge

of Hercules Dynamite by shattering the impervious subsoil. This involves even less trouble and expense than ditching.

If you have never used Hercules Dynamite in agricultural work write for our 64 page book "Progressive Cultivation". It is sent free on request. It tells in detail how to drain land; remove rocks, trees and stumps; subsoil; plant trees, etc., by the use of Hercules Dynamite. It is fully illustrated and is well worth reading. When you write please use the coupon below.

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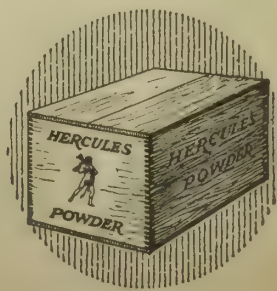
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General Agricultural Review.

GRAIN AND FIELD CROPS.

There was a free-for-all melon fete at Turlock on Sept. 6.

A flour mill for the town of Orland is said to be assured.

The Alfalfa Meal Mill of Orland has practically completed its season. It plans big improvements.

Two new irrigation districts are planned for Glenn county which will water approximately 40,000 acres.

On a late trip the steamer Colusa took two carloads of rice harvesters consigned to rice growers of Colusa and Sutter counties.

Up to the 1st of this month there had been shipped away from the sugar factory of Oxnard 491 cars of sugar and 265 of beet pulp.

The Sacramento Valley Sugar Co. at Hamilton promises to reopen next season if adjacent landowners will put in sufficient acreage to justify the move.

A crop of 48,000 sacks of grain (wheat and barley), valued at \$85,000, has just been harvested by Myers & Kalfsbeek near Arbuckle, Colusa county.

Butte county wheat and barley are selling at record prices this year. Above \$1.63 has been paid for barley, and as high as \$1.85 for good wheat.

A St. Louis company is considering the erection of a \$40,000 kelp-treating plant at Summerland, Santa Barbara county, with a view to the production of potash.

New irrigation projects which would water about 250,000 acres will be taken up at the annual meeting of the Northern California Counties Association convening in Alturas Sept. 25.

The Visalia sugar factory is now running at full blast. The beet growth has been heavy, and the factory is anxious to clean up the crop, as ripe beets standing too long in the ground deteriorate.

The Whitehall Estates have offered to build a sugar beet factory in the vicinity of Tracy if the farmers there will co-operate in raising the necessary acreage of beets to justify the step.

The Yolo Co. rice growers have decided to sell their 1916 crop independently of the Pacific Rice Growers' Association. They have organized as the Yolo Co. Rice Growers' Association.

The Western Canal Co. has surveyors running lines from the present terminus of the ditch in the Dodge Rice Plantation to the Sacramento River near Butte City. Butte City land owners are eager to get water from the ditch.

The Spreckels Sugar Company is constructing at the town of Graves, near Salinas, a new type of beet dump for the benefit of beet farmers in that locality. The device is new there, and is worked by a system of balanced weights and controlled by levers.

The Pacific Rice Growers' Association will pool the rice this coming season, along the lines employed by the raisin growers' association and the California Fruit Growers' Exchange, and will co-operate with the mills of the State toward the standardization of a clean product.

Lima beans in this State are to be five cents a pound f. o. b. the coast until Jan. 1, 1917. This price is announced by the Lima Bean Growers' Association, which controls 1,000,000 of the 1,750,000 sacks estimated to be the State's crop this year.

The Pacific Rice Growers' Association, which maintained headquarters at Biggs last year, is to transfer its offices to Sacramento. It is expected that 2,500,000 sacks of rice will be marketed through this

office. The acreage of rice is estimated as follows: Butte, 30,000; Yolo, 14,000, Colusa, 14,000; Glenn, 10,000; Yuba and Sutter, 8,000; San Joaquin, 5,500.

DECIDUOUS FRUITS.

Buyers are now offering from 5 to 5 1/2 cents for prunes around Visalia.

Buyers for peach-canning interests are canvassing the vicinity of Visalia for next year's crop. They are feeling out the growers for prices.

The Stewart Fruit Company of Hanford has shipped \$80,000 worth of peaches from Hanford and Armona this season—the best since its organization thirteen years ago.

Currant culture in Northern California promises soon to rival rice-growing. Recently inspected samples compare favorably with the Greek importation.

On a single day last week the McNeill & Libby packing house at Selma canned 9,213 boxes of peaches, or about 15 carloads. The hot spell caused rapid ripening of the fruit.

The Sebastopol Berry Growers, Inc., reports that during the past season it handled a total of 2,725 tons of berries. Lawton berries sold for \$75 per ton, Loganberries for \$93, mammoth blackberries \$103, and raspberries \$163.

Horticultural Commissioner Fred P. Roullard of Fresno has filed his report relative to fruit conditions and inspections in his district. During the month 1,872 sugar beet tests were made; 254 samples were condemned owing to failure to reach the 17 per cent standard.

Apricots were light in some sections of Riverside county this year, peaches fair and apples promise to be a good crop according to Horticultural Commissioner D. D. Sharpe. About three-quarters of the peaches of that county are of the canning varieties and about one-quarter of the apricots are sold for that purpose.

Orchardists of New Zealand have formed an association with headquarters at Wellington. The following points have been suggested for increasing the consumption of fruit: (1) High-quality fruit; (2) attractive packing; (3) suitable-sized unbroken package; (4) standard grades of fruit; (5) regularity of supply; (6) prompt delivery of orders; (7) reasonable and uniform price to the consumer.

CITRUS, NUTS, SEMI-TROPICAL.

The shipment of pomegranates from the Porterville district began early this month.

A contract for a new irrigation district to water about 16,000 acres near Lindsay has just been signed.

The warehouse of the Sutter Almond Growers' Association has opened for the season, and many nuts have come in.

The Oakdale Almond Growers' Association is loading its first car of almonds for the season. It is made up of IXL and Nonpareil varieties.

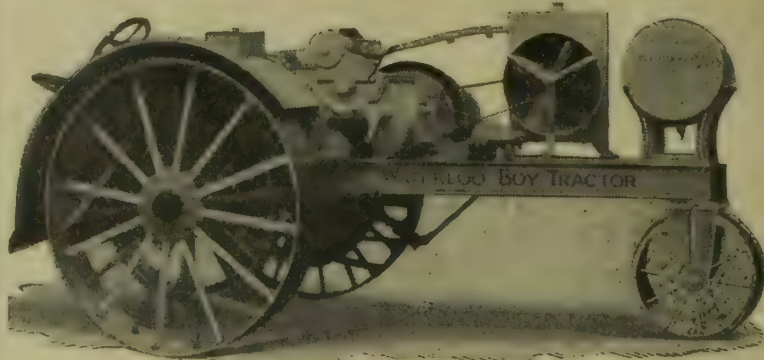
A cannery to be operated by the Northern Calif. Olive Corporation has been started at Palermo. Up-to-date machinery has been installed.

Lemons valued at \$30,000 will be taken from the 41-acre grove of Messrs. Parr & Shippey near Porterville at one picking this month.

Plant Pathologist Ralph E. Smith of the University of California states that Sutter county conditions of soil and climate are excellent for walnut growing.

Greece exported 27,111,467 pounds of dried figs in 1915, as against 17,678,100 in 1914. Of the 1915 exportation the United States received 3,173,374 pounds. The 1915 exports of olives were 19,954 gallons, of olive oil 402,217 gallons,

Waterloo Boy Tractor



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AFTER YOU have reached the conclusion you cannot find an Engine Gang that will handle your difficult conditions.
AFTER YOU have experienced every disappointment in your effort to find a serviceable and reliable plow.
THEN LET US furnish you a plowing outfit that will do your work thoroughly, steadily, reliably, and to your entire satisfaction.

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Tule ground or grit, foul stuff or adobe,
Rolling ground or level, orchard work or vineyard—

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Plows to suit your
power and soil.

We guarantee
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Machine with 12 H. P. Gas Engine.
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Williams, Cal.

ALFALFA MEAL

If you use any alfalfa meal at all, in small amounts or in car lots, write to us and buy direct.

GREEN GOLD RANCH

Route "B," Box 283,
Modesto, California

of which the United States received 18,543 and 262,476 gallons respectively. From the same country the United States received 14,823 tons of currants last year.

The new tract of 475 acres for a citrus experiment station at Riverside is now being made ready. Buildings to cost \$125,000 are now under construction.

The State average condition of lemons is 91 1/4 per cent of normal and oranges 91 per cent, as figured by Acting State Horticultural Commissioner Geo. P. Weldon.

There is being built for the Goleta walnut house a nut cracker capable of turning out 400 lbs. of meats an hour. The annual output of this house is 60,000 lbs. or more.

The Western Walnut Growers' Association, in session at Portland, Ore., has resolved to fight the "unfair competition of unscrupulous dealers who sell Chinese walnuts under the label of the Oregon product."

Indians are harvesting a crop of nutmegs from trees grown at Enterprise, Butte Co. In September the Indians gather the nuts, dry them in the sand, and leave them until January, when they are properly seasoned and ready for use.

Shipments of pistache nuts are soon to be sent from the United States Plant Introduction Gardens at Chico to all parts of the country for propagation purposes. The pistache nut is used for coloring and flavoring.

The Jamison lemon ranch of 160 acres located in the Carpinteria valley, in what is known as Gobernador canyon, has been sold to Santa Barbara citizens. The new owners of the ranch will put out more fruit trees.

A while back some interest was manifest in the injection of cyanide into citrus trees for the purpose of killing scale. Experiments along this line have led to the conclusion that cyanide injection for this purpose is not only impracticable, but is a dangerous procedure.

A strong popular protest is being voiced against the action of the Tulare Co. Board of Supervisors in rescinding the law which requires spraying and fumigating outfits to secure a license to operate. It is claimed that irresponsible operators may severely damage the groves.

The Cal. Almond Growers' Exchange have notified their members that they must deliver their shelled and unshelled almonds to the Exchange, without sorting or separating, but in original condition. "Stick-tights" of shelling quality must be delivered clean. They will be pooled and returns made accordingly. Almonds will not be received unless thoroughly cured.

The California Associated Olive Growers have been permitted to sell 40,000 shares of its common stock at par, \$5 per share, and to issue 20,000 shares of its preferred stock at par. It has in view a plant in the Fair Oaks district, one at Palermo, and a third at Fallbrook. Crop contracts call for minimum payments of \$37.50 per ton for pickling olives, and \$12 a ton for oil olives.

According to the report of commissioner Sharpe of Riverside county citrus growers there have the best prospects for a heavy crop the coming season that they have had for years. He says that they are still bothered some with black scale, but that fumigation has been general and that orchards are getting back to normal, the first time since the heavy frosts of a few years ago. By next year he expects the county's yield to be where it was before the freezes.

Aphis has bothered walnut growers in Santa Barbara county more this year than the blight according to Secretary Doolen of the Goleta Walnut Growers' Ass'n. The association has installed a new cranking machine this year that is guaranteed to crack about 80 per cent halves. The bleaching apparatus also been improved by the installa-

tion of new machinery which blows the spray on the nuts instead of the old method of immersing the nuts in the solution. Last year 61,000 pounds of meats were marketed by this branch of the State association.

GRAPES.

The raisin-making season has begun in Yuba county, and will last for several weeks. The yield per acre is fair.

Fair weather has started grape-picking in the district roundabout Dinuba. The quality of all varieties is good and the sugar content high.

A reduction of 40 cents a ton on carload lots of raisins and dried fruits between valley points and San Francisco has been announced by the Santa Fe. The new rates apply on intra-State shipments only.

The wineries at El Pinal, Mokelumne, Victor and San Joaquin near Lodi opened this week for grape-crushing. Growers are offered \$12 per ton for grapes averaging the required 23 per cent sugar content.

The Santa Clara Co. Grape Growers' Protective Association have sent a protest to the Conference Committee of Congress on the House revenue bill against the wine tax in this bill as amended in the Senate, which they claim will ruin the industry.

MISCELLANEOUS.

The California Public Employment Bureaus filled 20,962 positions during the first six months of their existence.

The first piece of paved highway in Ventura county has just been completed. It lies between Santa Paula and Fillmore.

The cities of Sacramento, Stockton and Fresno are making strenuous efforts to secure each in its own city the location of the Rural Credits Bank to be established in the Western division.

The city of Fresno has been granted a permit to use a 15-acre camp in the Sierra National Forest where it is planned to provide low-cost camping for schoolchildren and their parents.

The Pacific Gas & Electric Co. is to add 35 feet to the height of its 225-foot dam in South Yuba River at Lake Spaulding. Before winter it is hoped that another 33,000 h.p. initial power may be harnessed.

Representatives of most of the States met recently in Washington at the invitation of the U. S. Office of Public Roads to criticize and revise regulations under which the new Federal appropriation for roads will be administered.

With the passage of the appropriation of \$75,000,000 by Congress for the building of good roads interest in road development has been aroused anew. States accepting the benefit of this act must appropriate amounts equal to those received.

The Diamond Match Company of Chico is building a new warehouse a block long for bee supplies alone. The company already has a big warehouse. Beekeepers' supplies will be made from the company's own timber. The latest automatic machinery has been installed.

It is reported that a royalty of 12 1/2 cents a wet ton has been offered the board of supervisors of Santa Barbara county by the International Potash & Fertilizing Co. for kelp cut off the Santa Barbara coast, which would mean a revenue of \$25 a day, or \$7,500 a year, on a proposed cut of 200 tons a day.

C. R. Rookwood, engineer for the Imperial Valley Irrigation District recently submitted a report showing that more dredging had been done in the seven months January to August than in the seven years it was under receivership. Heavy silt had been getting ahead of the receivers, who with their attorneys drew surprising salaries.

It practically has been decided that all managers of Federal irrigation projects, all engineers in charge of reclamation work and all heads

SEE THE TRACKLAYER at PUENTE DEMONSTRATION

See them in actual operation and verify what we say about the compact flexibility of the **TRACKLAYER**.

Look well into the "All Steel" construction of these tractors and note that together with this feature of high grade materials we have embodied simple sturdy design.

See the ease with which the **TRACKLAYERS** are operated and do not overlook the fact that the different models are the most powerful tractors for their size on the market.

Ask our representative to demonstrate the "Rocker Joint" that eliminates friction between the track links—and the "Oscillating Tracts" that conform to the uneven contour of the ground.

The little **TRACKLAYER** for orchard cultivation will be there as well as the big **TRACKLAYER**.

See the line of tractors that are built for "Service" with "Minimum Up-keep."

C. L. BEST GAS TRACTION CO.

STA. G, OAKLAND.

LOS ANGELES

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"HEADQUARTERS" FOR WOOD PIPE AND TANKS

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PACIFIC TANK and PIPE CO.

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318 Market Street,
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LOS ANGELES, CAL.

of legal departments connected with the many reclamation projects now under direction of the government throughout the United States, will meet in force in El Paso during the annual convention of the International Irrigation Congress.

G. M. Eastman of Fairmead Poultry Farm writes: "From the way inquiries and orders are commencing to come in, it bids fair to be a good year. We have our incubators run-

SILO FILLING POWER

Don't buy any engine at any price till you get our new free book "Why." It tells in simple words and pictures the facts that distinguish good engines from poor ones. WITTE Kerosene engines are lower in price and fuel expense. Ask for Free Catalog and prices.

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Pittsburgh, Pa.

ning, as people are beginning to appreciate the value of fall-hatched chicks."

The Tractor Demonstration at Puente.

[By Sec'y W. L. Cleveland of the Los Angeles Traction and Implement Dealers' Ass'n.]

From the time that the starting gun is fired at 1 o'clock Tuesday, Sept. 19th, until the sun sets on Saturday night, the 23rd, there will be something doing all the time at Puente.

A great demonstration of tractors and tractor-drawn machinery such as this will be, has never yet been held in California. Last year a demonstration of this class of machinery was pulled off at Farmington, near Los Angeles, in a small way, and proved vastly interesting to the few thousand people who were privileged to attend. This year, however, dealers in traction engines and heavy machinery have organized an enthusiastic association, and are going to pull off a demonstration that will be of particular interest to every man and woman, either owning or operating farm lands or orchards.

This is to be a demonstration pure and simple, and no contests of any kind will be held. It is the purpose of this gathering to show to the farmer and orchardist the various sizes and types of tractors and tractor-drawn machinery, and to demonstrate that they are adapted to their use. Traction manufacturers and dealers realize that the successful use of this machinery in Southern California will depend upon its being adapted to the various kinds of work to be performed, and hence it has been arranged so that, at the Puente gathering, opportunity will be afforded the interested farmer or prospective buyer, to see these machines operating at different kinds of work, such as plowing, disking, cultivating, subsoiling, etc.

Demonstrations have been held this year in a large number of Eastern counties; and the attendance at these gatherings has averaged more than fifty thousand. What has been done elsewhere it is hoped to repeat at Puente, where it is confidently expected there will be a gathering of not less than twenty thousand.

An opportunity will be afforded for a close inspection of the mechanical construction of the various machines that are shown, together with accessories of every kind which are expected to be exhibited on the grounds, such as carburetors, magnetos, spark plugs, etc. All these things are helpful and are of particular interest to possible buyers. One thing should be carefully considered by every farmer or orchardist before buying, and that is the size that is best adapted to his services. There is no use of buying a big, heavy machine to do light work, and it would be equally foolish to buy a light machine for heavy work. The careful buyer should make an estimate as to the work he expects a machine to do, and then buy a tractor with that end in view.

The program for the demonstration at Puente provides for private demonstrations of tractors and machinery during the forenoons, during which time the managers of the different machines on exhibition will operate the various tools, to show what they can do. Exhibition of short turning, harrowing of loose ground, disking, etc., will be given during these morning hours.

At 12:55 every tractor that is to

be shown in the plowing demonstration, will be lined up on the land assigned to it, for the afternoon work. At 1 o'clock, upon the firing of a gun, the entire line-up of 20 or more machines, will begin plowing, and will continue to do so until 3 o'clock, after which, for thirty minutes, an opportunity will be afforded for the inspection of the machines that have been in the demonstration. After this inspection, the tractors will be taken to the headquarters of the company being represented for either further inspection or private demonstration.

It will thus be seen that every opportunity will be afforded to witness the operation of various tractors, under different conditions, and in connection with tools of various

pillar, one 45 h.p. Caterpillar, one 75 h.p. Caterpillar.

W. L. Cleveland Co., two 12-24 Waterloo Boy Tractors and one Waterloo Gang Plow.

Samson Sieve-Grip Tractor Co., one 6-12 Sieve-Grip Tractor and one 10-25 Sieve-Grip Tractor.

C. L. Best Traction Co., one 8-16 C. L. Best Tractor, one 16-30 C. L. Best Tractor, one 40-75 C. L. Best Tractor.

Dauch Mfg. Co., two 15-30 Sandusky Tractors.

Wm. Gregory Co., two 10-22 Lambert Chain Tread Tractors.

Hughson & Merton, Big Bull Tractor.

A. F. George Co., Yuba tractors.

Dixon & Griswold, entering for Puente, full line of P. & O. Implements. Silo Filling Machinery, Tractor Drawn Plows, Power and Lever Lifts Disc Harrows for orchard and field use.

kinds.

For the comfort and pleasure of the inner man, a restaurant will be provided on the grounds, where first-class food can be had at the right price.

Every man or woman who, at any time, anticipates being in the market for a traction machine, or is, in any way, interested should plan by all means to be at Puente.

The following firms (a partial list only) will exhibit at the Puente Tractor meet:

Killefer Mfg. Co., one 5 Standard Subsoil Plow, one 3 Standard Subsoil Plow, one 1 Standard Subsoil Plow, set of Double Tractor Discs, one 4 Bottom Extra Heavy Mold Board Plow, one 2 Bottom Extra Heavy Mole Board Plow, one Tractor Chisel Cultivator, one Tractor Orchard Cultivator.

Bates Steel Mule Co., one 13-30 Steel Mule.

Holt Mfg. Co., one 18 h.p. Cater-

A. F. George Co. entering 1 Yuba 12 h.p., 1 Yuba 18 h.p. Full line John Deere Implements, Alpha Sprayers, 3 sizes Schmeiser Land Levelers, 1 Hart-Parr Wheel Tractor and full line of Keller-Thomason Irrigation Equipment.

International Harvester Co., entering Mogul Tractors and line farming implements.

Entries closed for this demonstration on Sept. 5th. It is more than likely that several other firms, selling tractors, farming implements, irrigation machinery, etc., will be represented at this meet, and all exhibitors will be announced in our issue of September 16th.

20 PERCENT FARM DYNAMITE.

It used to be that the man who blasted out stumps thought he was doing well to get the most condensed and most powerful explosive he

could find. A great many people still think that the standard dynamite or powder for this and all other farm purposes is what is usually called "40%." But experience has shown that there are other considerations much more important than the "strength" as indicated by the percentage of nitroglycerine.

For blasting out stumps, except in the light, dry, sandy soil, you will get much the best results with a 20 per cent powder. And if it is an ammonia powder instead of a nitroglycerine one, the results will be better yet. As compared with the work of other powders or dynamites, such as 30 per cent, 40 per cent, 60 per cent, or 75 per cent, the finished result will cost you less money, and the job will be done in a superior manner. Contrary to what one would think, from the figures, the 40 per cent is not twice as strong as the 20 per cent. In practice you can use them stick for stick, or with not over 10 per cent more of the 20 per cent powder.

Twenty to 25 per cent ammonia powder is the thing to use in all tillage blasting—for trees or for regular farm crops. Its gas action is superior for this purpose to that of 40 per cent or other grades.

On the other hand, for making ditches, 50 per cent is best. Where the propagated method of detonation is used, nitroglycerine powders are best because they are more sensitive. But if an electric blasting machine can be used for all or part of the charges, 50 per cent or lower ammonia powder is the best grade to buy.

For breaking big stones 50 per cent should be used. The lower percentage powders do not have quick enough action for this purpose.

As it happens now, owing to the war in Europe and other causes, the ammonia powders are much cheaper than those with a nitroglycerine base. The 25 per cent ammonia powder sells now at \$13.75 per cwt. while the nitroglycerine powder of equal strength but greater speed, sells at \$16.75. The 40 per cent nitroglycerine explosive sells at \$3.75 per hundred more than the same strength of ammonia explosive.

The "propagated method of detonation" mentioned above means that high percentage powder is used in a number of separate holes with a cap to set off the charge in the first hole only. One experienced man has set off 100 such charges placed three feet deep in mud in holes made with a shovel-handle 18 to 24 inches apart. In one case in Monterey county it threw the dirt 250 feet from the ditch being opened.

TRACTOR FOR BEANS, HAY ORCHARD.

[Written for Pacific Rural Press.]

"I would investigate the motor of a tractor first, if I did not know the various makes," suggests R. L. Owen of Los Angeles county. "Then I would find out how much it would pull, for there is not much uniformity in the meaning of tractor horsepower, and the rated horsepower of the engine is only a general indication as to how much the tractor will pull."

After investigating the engine and traction, he would look over the general construction and material used in the tractor. "I want to see if it

transmits its engine power to the draw bar economically, and if the material is strong enough without being too heavy. All surplus weight takes part of the engine horsepower to move it.

"We have used a 30 h.p. tractor one year to work 300 acres of beans, 120 of hay, and 80 acres of orchard. We find it very economical and ef-

ficient; but we keep six horses for planting, cultivating, and harvesting hay. We use the tractor for all kinds of work, including plowing, working down, and hauling.

"Our repairs have cost us less than we expected—\$34 during the running season, and \$62 for overhauling at the end of the season. Have had no trouble with bearings.

Prefer gear transmission entirely. I should say that a track type tractor is very satisfactory."

POWER NOTES.

A gas engine was mounted on the rear platform of a Schmeiser power land leveler drawn by a tractor in a hurry-up job of leveling on the Fair

grounds. The engine worked the air compressor which raised and lowered the scraper.

C. H. Burman of Oakland recently drove a Hudson Super-Six from Broadway to Broadway over the Skyline Boulevard entirely on high gear. This includes several steep "hairpin" turns and a long hard grade.



ONE MAN AND "BATES STEEL MULE"

FOR EVERY FARM
OPERATION

Bates Steel Mule Company
OF CALIFORNIA
320 N. San Pedro Street
LOS ANGELES, CAL.



COME TO PU-EN-TE SEPTEMBER 19-20-21-22-23 AND SEE THE BIG TRACTOR DEMONSTRATION

THIS demonstration has been arranged to help you solve the problem of better and cheaper farming.

It will be a liberal education in efficient farming.

You will learn how and why tractors make farming more profitable.

You will have an opportunity to see for yourself the actual performances of the different makes and the different classes of tractors—as well as all kinds of farm machinery.

Mechanical power has been applied to the factories of America—making America the greatest manufacturing nation on Earth.

Mechanical power is now being applied to the farms of America—it will make America the greatest farming nation on Earth.

It is your duty—the duty of every farmer—to do your share toward reducing the high cost of living, and to cut the cost of living you must cut the cost of production. This demonstration will show you how to do it.

Come to Puente. There you will see in operation the biggest array of farm machinery ever assembled in California.

Reduced fares on all railroads.

PU-EN-TE

Twenty miles east of Los Angeles on the Main Valley Boulevard, Southern Pacific, Pacific Electric and Salt Lake R. R.

Don't miss this Big Event
Sept. 19, 20, 21, 22, 23

State Fair Tractor Demonstration.

Hot Weather and Hard Ground Did Not Worry the Tractors, Though No Stop Was Made at Dinner Time, but Most of the Plows Were Not Equal to the Task. It was a Capital Chance to Compare Merits and Learn Advantages.

(Written for Pacific Rural Press)

The visitors broiled in their shirt sleeves, but the tractors didn't mind the hot weather at the State Fair Tractor Demonstration Sept. 4. We were invited to hold our hands on the radiator of a Bates Steel Mule for two minutes. We didn't want to, but it wasn't much hotter than we were, after it had plowed several rounds. Its driver sat on the plow, safely behind this Mule's heels.

The ground hadn't been plowed for eight years, but the 75-35 Best tractor forgot about that and broke the cable to the plows twice. It was repaired both times, so it broke the drawbar next, and then stopped to see what its fellow tractors would do.

The plows, most of them wouldn't cut through the surface crust only intermittently, but the Big Bull acted like there was a red rag cavorting around in front of it, and we thought that with less unseemly haste, it might have made a deeper dent in that brick-like ground. People said, however, that because they had not been allowed to find out about the field, their plows were not adjusted right.

The Invincible and Paragon walked along with their plows until the demonstration started. Then they balked temporarily and quit early.

The 75-40 Caterpillar wasn't so frisky, but with the grim determination of Fate, striking awe to the visitor's heart, he grunted along with 15 disks, each cutting ten inches and doing a good of the deep

plowing without becoming winded.

The Yubas were both frisky and nonchalant about the way they turned over their dirt as if it were a before-dinner job. (The demonstration started about noon). Their disk plows, like the Davis plows, following the Caterpillar, were built for the conditions, and caused much favorable comment.

The Samson Sieve Grips didn't look much bigger than a minute, for they were close to the big 75-40. They didn't even choo-choo very stridently, but there were no flies on them, and they asked no odds of anybody. They were in the game to the end and didn't sweat a hair.

The big Sandusky didn't pack the soil with its wheels 30 inches wide, but loosened soil for the plow by digging it up more or less with the long pointed grousers. This machine wasn't sorry it came all the way from Ohio, for though the soil is different, the Sandusky was as game as any.

Plowing Only.—The world seems to have gone mad on plowing at tractor demonstrations. Plowing alone was allowed at the noon exhibit of mechanical tractive power. Probably it was because this is the best and most universal way to determine the relative strength of different machines. But when you draw conclusions from such a demonstration, consider the number of bottoms, watch how deep they go, and see whether the leader of a gang

is going as deep as its rear companion. We did not notice any of the last mentioned tricks-of-trade, but there was a difference in the average depth plowed, and considerable stretches were merely scraped over. This, however, was due to the hard-heartedness of the ground rather than to efforts to save power.

More Varied Uses Should Have Been Shown.—But we had been told by half a dozen different manufacturers, that the consideration which would make the difference between loss and profit in the use of a tractor on the farm, is the numerous use it could be put to after plowing is done. In spite of this, these same manufacturers did nothing else so far as we observed, except spectacular stunts which truly proved the flexibility and power of their machines. These stunts suggested nothing by which a farmer would be able to supplement his plowing in order to make a tractor a profit-making investment. Such uses there are and their name is legion; and many of them will be demonstrated at Puente Sept. 19-23.

Parade.—The Tractor Day started about 10 a. m., with an elephantine parade twice around the Fair grounds, of tractors totaling 318 drawbar horsepower and 650 h. p. on the belt, as figured by L. J. Fletcher, who assisted Prof. J. B. Davidson of the Power Department at University Farm in supervising the demonstration. Among them was the youngest baby elephant, the 6-12 Bean Track Pull. The biggest part of this machine is its track. Its engine clings to one side at the front end of the track while the radiator clings to the other side. The machine is guided by an operator sitting above two apparently over-heavy spraddled-

out wheels, who simply turns the whole machine with a hand wheel, and the rear wheels follow. It is a surprisingly lusty infant, but did not take part in the demonstration.

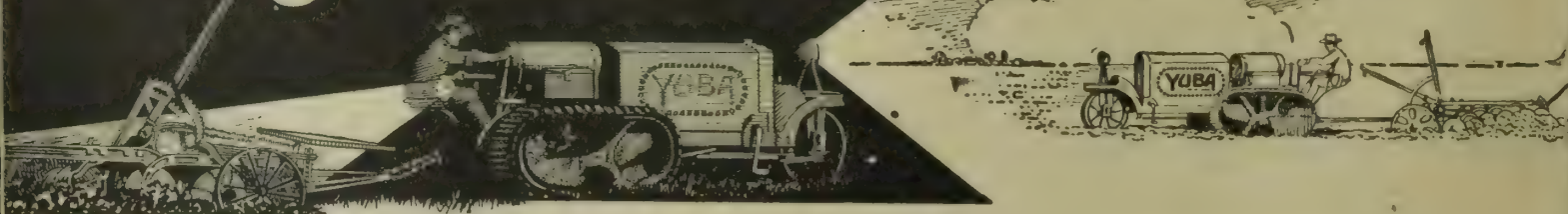
Life of Tractor Unknown.—An interesting feature is that the life of a tractor is principally an unknown quantity. The California-made machines have not been in the field long enough to furnish definite data widespread enough to determine a fair average; while the Eastern-made ones put this aside as one man did, by saying that the past few years have shown the weak points in materials and construction, so that the lives of the recent models will be far greater than those which have already been in use a few years.

And the life of a tractor cannot be measured in years any more than the number of furrows it will turn at once indicates its power. The life of a tractor is the number of days and nights it is profitably used until the multiplicity of parts to be replaced shall eat up all profits. And the profit from a tractor will be much greater if such number of days and nights can be found in the fewest number of years.

The Power of a Tractor is displayed by the number of inches of plows it will pull at a given depth and considering its speed. The number of acre-inches per given time shows its relative power, soil conditions being equal.

Consider Varied Soil Conditions.—But the power and life of a tractor are not all. Its ability to be used under all farm conditions will determine its relative value, other things being equal. In a plowing demonstration like that at the State Fair on hard ground, orchard trac-

Doing double duty with a YUBA



There are times when the days are not long enough on the farm—when the ability to do night work means all the difference between a seasonal loss or a seasonal profit.

The tired horses cannot work two shifts a day, but the right tractor can. Some farmers do not work their tractors nights because even a slight breakdown means leaving the tractor stand until daylight.

The Yuba Ball Tread Tractor—substantially and honestly built—works right through until morning.

There is no carburetor trouble on the Yuba. The carburetor can be adjusted, from the seat, for the cooler and heavier night air.

Sometimes night operators find adjustments troublesome, but not on the Yuba. There are only 5 grease cups to watch.

Doing double duty with the Yuba in the cool damp night air—That is something to look forward to.

THE YUBA
BALL TREAD TRACTOR

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DEPARTMENT A-101

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Gentlemen: Kindly send me a copy of your booklet, "The Yuba Ball Tread Tractor."

Name	Check Main Crop Raised
P. O. Box	Fruit.....Rice.....
Town	Grapes.....Alfalfa.....
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THE YUBA CONSTRUCTION COMPANY

433 CALIFORNIA STREET, SAN FRANCISCO

tors had little opportunity to show their value. The ones that showed up best here might be of less value in an orchard or on a farm where occasional soft or slippery spots need drainage. This is not minimizing the value of such a demonstration, except that it did not adequately represent the uses or varied conditions for which tractors are valuable.

Among the 700 or 800 visitors who inspected and followed the various tractors on their rounds, were a large number who had come long distances to the Fair largely to make up their minds which tractor would do their work most economically. One man with a ten-acre vineyard, in which he works two horses 60 days per year, came to learn whether he could invest in an iron horse which will not have to be fed in idleness five times as many days as it is worked.

Operators Questioned.—There was no lack of questions fired at operators and demonstrators whenever the machines stopped (not for a breathing spell). And there was utmost courtesy and full information in the answers.

But with all this, one of the most valuable features of the demonstration was the lecture by which one man pointed out the advantages of his machine, and showed visitors some of the unsuspected features which would have otherwise escaped their observation and questions. The value of these lectures ought to be equal, to both the manufacturers and visitors.

Plows Needed Adjustment.—The farmers at the Fair noticed and remarked on the good plowing done by two of the machines. All of the tractors were in fine mettle, but some were handicapped with plows not adjusted for hard ground. Representatives of the two which did highest class plowing, agreed separately on the points that disk plows for hard ground should be set more nearly square with the line of draft and more nearly vertical, than the others in the demonstration were used. Moldboards seemed not to do any better work than disks in this soil, where not a moist inch of dirt was turned. Weight is of less consequence than adjustment.

Entrants in the demonstration were: Bates Steel Mule 30-13, operated from a three-gang moldboard plow; Sandusky 35-15, pulling three moldboards; Best 75-35-50, which would have pulled 18 disk plows; Best 45-20, pulling 5 disk plows; one Big Bull with 3 disks; an Invincible with 3 disks; a Paragon with 4 disks; a Yuba 20-35 with 6 disks; a Yuba 12-20 with 5 disks; a Caterpillar 75-40 with 15 disks; a Caterpillar 45-20 with 6 disks, and a Samson 10-25 with three disks.

Southern California Demonstration.—Many of these machines will be at the Southern California Traction and Machinery Manufacturers' demonstration Sept. 19-23, and will run not only plows but subsoilers, pumps, and other machinery, to show the capability of tractors for increasing farm profits.

The Holt Mfg. Co. had a self-propelled combined harvester with 55 h.p. motor and track, ready for the State Fair; but a hurry-up order took the machine too soon.



Make Your Own Comparisons

You have read tractor advertisements—you have studied tractor catalogs. Now, at the big tractor demonstration at Puente, near Los Angeles, Sept. 19 to 23, you may see the machines engaged in actual work. Compare them there, side by side.

See how far superior the Caterpillar is, in construction and design.

Note its ease of handling, its simplicity, its complete accessibility.

Study the features that made this tractor Grand Prize winner at

both 1915 Expositions. Learn how motor power is turned into pull,

in the Caterpillar, with least frictional loss—how soil packing and miring are made impossible.

Then Make This Further Test:

We know you will be convinced that the Caterpillar is superior if you compare it, point by point, with other tractors. But still surer proof of a tractor's merit will be found in talking with the owners and operators of the machines.

Caterpillar owners will tell you that this tractor is built for service, that it will work in any season, regardless of weather or ground conditions, that its fuel and upkeep costs are light.

There are more than 1200 Caterpillar owners in California alone—let us give you the name of the one nearest you. Or, if you haven't read the Caterpillar Catalog, send for it today.

CATERPILLAR

Reg. U.S. Pat. Off.

Don't Say Caterpillar Unless You Mean the Tractor Holt Builds

The Holt Manufacturing Company, Inc.

Stockton, California

San Francisco, Calif.
Spokane, Wash.

Portland, Ore.
Peoria, Ill.

Los Angeles, Calif.
New York, N. Y.

A Scene from the Sacramento State Fair. Similar Scenes Will Prevail at the Puente Fair, September 19th to 23rd, inclusive.



\$725.00

BUYS A

6-12

SAMSON SIEVE-GRIP

\$1250.00

BUYS A

10-25

SAMSON SIEVE-GRIP

Samson Sales Co., 320 N. Los Angeles St., Los Angeles, Calif., will display and demonstrate our Tractors to your satisfaction.

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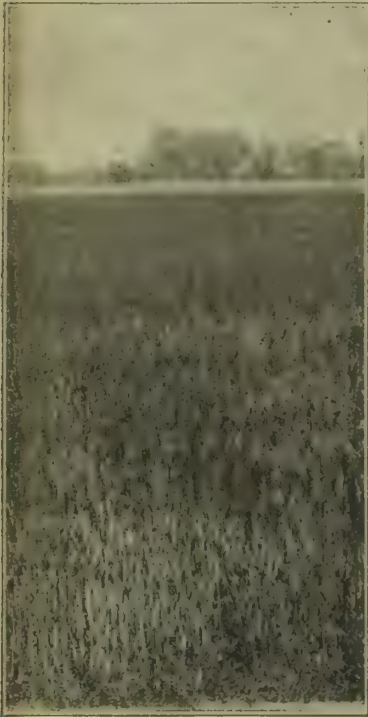
Mechanical Power on the Farm.

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of your experiences and troubles.

AUTO—TRACTOR—CORN SILAGE.

[Written for Pacific Rural Press]

A visit to the Capital Dairy will convince anyone that Albert Meister is a progressive dairyman. Year by year he has added improvements to his plant until it is one of the most complete and up-to-date in the country. His barns are models of lighting and ventilation, with concrete floors and the latest sanitary



First a Crop of Rye was Harvested. devices. His clarifying and pasteurizing plant is right up to the minute.

Yet it was only a year ago that he adopted the feeding of corn silage. It can hardly be regarded as a discredit to the man, to say that he was so taken up with the problem of furnishing the best and purest milk possible to five thousand or more of Sacramento's families that it required a hard jolt to direct his mind

never taken much stock in the idea. Like many others, he had been firmly of the opinion that corn couldn't be successfully grown in California. However, as no other solution of his feed problem presented itself, he decided to investigate the corn proposition.

His good auto quickly took him to the corn sections he had read about. He was sufficiently convinced so that on his way back home he ordered a 30 h.p. Caterpillar and immediately started breaking up the worst of the alfalfa land. He put in 40 acres of corn. Though planted so late, most of the corn made silage, cutting about 500 tons. By the time it was ripe, four Ideal Green Feed Silos were up ready to receive it. Thus he proved to his satisfaction that corn could be raised in California—and on his place.

He now decided to test its feeding value. Only a part of the herd was fed silage. Each string of 28 cows received per day 780 pounds silage and 300 pounds hay. The strings not fed silage received 900 pounds of hay per day. All were fed a mash consisting of 100 pounds beet pulp (or alfalfa meal), 80 pounds ground barley, 60 pounds bran, and 30 pounds oil cake meal for each string. The hay fed was first-class alfalfa. Not only did feeding the silage save over 60 per cent of the hay, but the silage-fed cows gave decidedly more milk and came through the winter in decidedly better shape than the others.

Mr. Meister is now enthusiastically converted to corn silage. This year he has made provision for 30 pounds per day for every cow in his herd during the dry feed season. Four additional silos of the same make as the first, but larger, are being put up, almost tripling his capacity; and to fill them he is growing 80 acres of corn that will compare favorably with the best in the corn belt or anywhere else, for that matter.



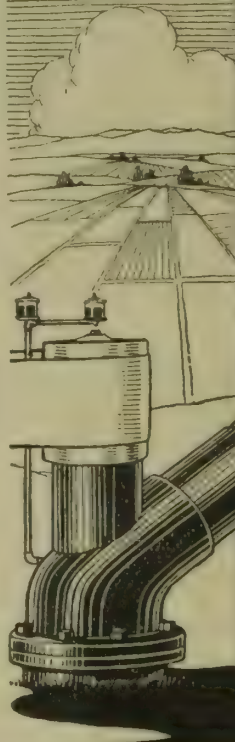
Then a Crop of Corn was Grown the Same Season.

to his feeding problem.

That jolt was given last June when his faithful alfalfa fields, which had for the past seven years yielded six or more good crops per season, suddenly gave out and threatened the food supply of his army of four hundred black-and-whites. He says that he had read a good deal from time to time in the farm journals about growing corn and the value of corn silage as a dairy feed, but had

Last season he had no time to do more than break up the ground and get in the seed. For this season's crop, the ground was well manured during the winter and treated to a ton of lime per acre. A big crop of barley was first raised, and as fast as this was cut, for green feed, the corn was put in. The planting was done at intervals through April, May, and June. About a ton of seed was put on the 80 acres, the principal

Layne & Bowler PUMP



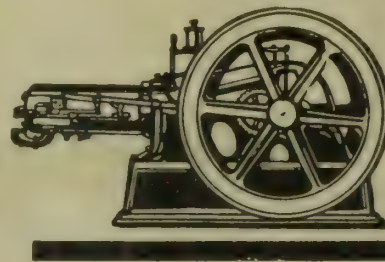
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The Layne & Bowler pump is constructed to stand constant wear, to work perfectly without trouble under every condition. This insures you against an insufficient water supply. This pump has been subjected to the most severe tests and has proven beyond a doubt its superiority. The final choice of discriminating ranchers is invariably the LAYNE & BOWLER SYSTEM. We can show you how you can save the greatest amount of money, produce a larger supply of water, and eliminate all pump trouble. Consult with our Engineering Department. Let the world's largest water developers solve your pumping problems.

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and low cost of operation are two of the most important considerations in the purchase of an engine. The Commercial has only 150 parts—most other engines have 250 to 750 parts. This is a wonderful advantage to the owner of a

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It means a tremendous saving in replacements. It means that you don't have to be an expert to operate a Commercial. No batteries, coils, switches and wires are used in either starting or running. Write for our large new catalog, explaining fully the simple construction of our engines, and containing testimonials from men who have used them.

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Water Troughs, Windmills, Frames, and Towers, Steel and Wood. Prices the lowest.

BROWN & DYSON
640 So. Center St., STOCKTON, CAL.

varieties being Improved Leaming, and Pride of the North. The seed was Eastern grown and was obtained through the Valley Seed Co. His first planting will be ready for siloing by Sept. 1. It is 10 feet tall and looks like 20 tons per acre.

Mr. Meister figures that two years of barley and corn will kill out the Bermuda and get the ground in good shape to go back into alfalfa. He has planned his rotation so that he will have 100 acres of corn every year.

REQUIRED TRACTOR TO PLOW MELILOTUS COVER CROP.

[Written for Pacific Rural Press.]

Melilotus indica has not been so thoroughly tried out north of Tehachapi as south, but where it is properly handled, great satisfaction results.

Among the best of these that we know about, is that of A. Neilsen on the S. F. Leib ranch in Santa Clara Valley. It averaged 3½ feet high, a thick stand on 10 acres of walnut orchard when worked down with tractor and double disk. Efforts to get it turned under failed.

Last September or October, furrows were plowed through the orchard 38 inches apart. They were too deep so they were harrowed lengthwise. Then the melilotus was broadcasted by hand, about 10 pounds of seed per acre. It was mixed with about ¼ its bulk of dry beach sand for convenience in sowing. Part of the seed was wetted and mixed with one-fifth its weight of blood meal, but no results were noticeable. Part of it was mixed with one-fifth its weight of air-slaked lime. This did "lots of good."

Irrigation was given once in the fall. The melilotus came up, but didn't grow much above ground, until February—then it shot upward to an average of 3½ feet. Some stalks were as big as your finger and tough.

Working it down was a two weeks' job. The furrows made and harrowed down in October, made a gang plow out of the question. Mr. Neilsen aimed to plow when the melilotus was half in bloom—it was in full bloom before the job was done. A little of it was plowed with four horses, but that "wasn't satisfactory. The 30 h.p. tractor was tried with two plows hooked on by a chain. "You would need a sulky 30 inches high to turn it under."

Finally, the tractor worked it down with a double disk; and it never was entirely turned under, except by later cultivations. It was found here that the roots went only 3 to 5 inches deep, though there were lots of them and lots of nodules.

POWER NOTES.

Stratford, Kings county, sugar beet growers hauled several hundred tons of their crop to the cars by auto trucks.

The Samson Iron Works of Stockton has sold all of its property, patents, accounts, etc., to the Samson Sledge-Grip Tractor Co., a new corporation formed to add new equipment and increase the number of their employees from 200 to 300.

Distillate for auto truck fuel proved satisfactory for several machines used by a San Francisco draying concern. Their drivers are reported to have used it several weeks

on Federal trucks thinking they were using gasoline.

Of 9688 people who visited Yosemite Valley this season prior to July 1, 5623 came in their own automobile stages.

A dynamite manufacturer was recently arrested in San Mateo county for not blowing his horn at the turns of a Honda mountain grade.



COST LESS

Even though Racine Horse Shoe Tires sell for considerably less than other tires of comparatively the same high quality, they are guaranteed for 5000 miles.

Note the unique tread. The anti-skid horse shoe cups are sunk into the tread—not elevated. When the cups eventually wear smooth there remains a thickness equal to a plain-tread tire.

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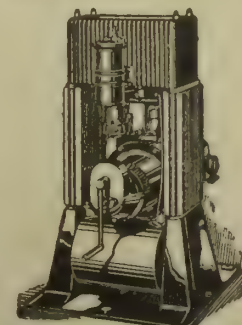
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GASOLINE-ELECTRIC UNIT LIGHTING SYSTEM

Mr. Farmer

WINTER IS APPROACHING.

Are your buildings in shape to protect your crops, your stock, your machinery, implements, etc.?

Remember that galvanized iron building materials are practically everlasting.

We can supply complete lines of V-crimped roofing and siding, metal shingles, roof gutters, etc.

Also stock watering troughs, tanks, and A. I. Irrigation Pipe.

Let us know what you need in galvanized iron materials. We are in a position to supply you.

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Stop Dragging the Life Out of Your Teams

Schmeiser Wheel Scraper

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THE greatest little machine for its price ever invented to increase profits on the farm. Contractors and farmers say theirs do half as much work again as the old-style Fresno—with far less strain on the horses.

And you don't wear out the bottoms of the bowls on these scrapers.

Still \$40.

(despite raise in prices)

Next output, though, will surely cost more. Order now, before the raise.

Our Catalog, "Moving the Earth on Wheels," tells all about them, and other valuable things to know. Write

SCHMEISER MFG. CO.,
12 Mechanic St., Davis, California

Electricity for Farm Homes

At one-third cost of juice from Power Company. (thus includes interest on cost of plant). It is the simplest and most economical plant on the market. **No Batteries - No Switchboard - No Rheostat.** Will operate 50 lights 7½ hours for 11c. Will also operate electric fans, irons, small motors, etc. If your buildings are not wired, send us plans and we will give you full instructions so that you can wire them yourselves. Material furnished at lowest cost.

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104 Clay St.,

San Francisco, Cal.

The Utility End of a Purebred Farm.

[Written for Pacific Rural Press.]

No dairy cattle breeding farm, regardless of the quality of its livestock, can lose sight of the utility end of the business; in fact, it is the added revenue from the commercial dairy side of such farms that makes dairy cattle breeding a better poor man's business than some other forms of livestock breeding, because of the early and continuous income.

On the Rio Vista Holstein Farm in Los Angeles county, owned by Col. Ben. Rhoades, this fundamental point is never lost sight of, even though the chief consideration is to breed and raise high-producing Holsteins that will meet favor for their breeding qualities.

There are two departments on this ranch, one busying itself in the breeding and record making work while the other confines its work to the growing and storing of feed, and the care and disposal of the milk.

The former is the more spectacular because of the continual effort to secure higher records than have ever been made before. The best indication of success in this respect is the fact that of the 45 mature cows on the ranch, three-quarters of them have A. R. O. records ranging from 19-pound two-year-olds to 31.8-pound four-year-olds.

The natural location of this ranch greatly facilitates the growing of feed, and the drainage problems; as there is enough acreage on high land for all the necessary buildings, and the balance of the land is rich river bottom on which large yields are the rule.

The problem here, as on other dairies which operate on high-priced land, is to raise the maximum amount of feed on every acre. Alfalfa has constituted the chief feed grown on this river bottom land in the past; but none too favorable conditions, together with the belief that better results would be attained by growing corn for silage and buying alfalfa hay, has led to the planting of a considerable acreage to corn and the erection of two brick silos the past season.

Corn planting was done June 1, and by the middle of August the growth was fully 10 feet high in many places and averaged well over nine feet. At that time thorough cultivation and two irrigations, one at tasseling time and another about two weeks later, had been given, the dirt being thrown well up to the stalks when furrowing for irrigation, which overcame the possible toppling over of the heavy stalks.

The two silos built this year are an innovation; both of them being made of brick, 14 feet in diameter and 60 feet in height, but well anchored by being set several feet in the ground.

Reinforcement of each layer of brick has been accomplished by the insertion of No. 4 iron wire in very rich cement mortar, around each course for about half the height, and the use of No. 6 wire in the higher courses where the strain is not so great. It is interesting to note that these two silos were built at a total cost of \$850 by a local brick mason.

The milking barn is of the type characteristic of Southern California dairies where whole milk is marketed, having a well-drained concrete floor with roof overhead, but open sides. Because of the almost continuous test work, an adjacent building is used for a test barn, with a box stall capacity of 16 cows.

The milk from the dairy is sold through the Milk Producers' Association of Southern California, of which Col. Rhoades was one of the organizers, the prices received as a result of this co-operation being much better than had previously prevailed.

Owing to his auctioneer business demanding most of his time Col. Rhoades has leased his ranch and expects to disperse his purebred herd at public sale in October, but the ranch will continue to be the home of high-class Holsteins. Messrs. Anderson and Daly expect to establish a large herd of purebred Holsteins on it, and another ranch located at Burbank.

Alfalfa Meal vs. Chopped Alfalfa.

To the Editor: What are the relative advantages and disadvantages of finely chopped alfalfa and ground alfalfa meal? The chopped alfalfa is not usually over 1/4 inch long.

[Answered by Prof. F. W. Wolf, University Farm, Davis, Cal.]

The same advantages and disadvantages would apply to a certain extent to both fine-chopped alfalfa and alfalfa meal, and the finer the alfalfa is chopped, the greater would be the similarity between the two products. Alfalfa meal is used largely for feeding poultry and swine, and in the manufacture of mixed molasses feeds. It has an advantage over chopped alfalfa for poultry and perhaps for swine, but in mixed feeds or as a component of the grain mixture for dairy cows, steers or sheep, there will be no advantage in grinding the alfalfa over chopping it.

The main disadvantages of alfalfa meal are its dustiness and cost, and the fact that it is difficult, or next to impossible, to determine its quality by a mere inspection, without

chemical or microscopic analysis, and to tell whether it is made from a choice quality of leafy alfalfa hay or from an inferior grade of over-ripe, stemmy alfalfa. The mere grinding or chopping does not add anything to the digestibility or the feeding value of the hay, but it insures its being eaten without waste, and there is also some advantage in the case of both feeds over alfalfa hay in the saving of storage room.

MULTIPLYING GOOD TYPES AND PROLIFICACY.

To the Editor: In support of your claim on page 203 of the issue of August 26, that "propagation should be only from the best trees" in type and bearing, I wish to cite the experience of Mr. Butcher of Sunnyvale. He says positively that in regard to cherries (his specialty) the propagators have for years been breeding down, by getting buds from vigorous wood producers, with no reference to the fruit. He proves

333

THREE BLOCKS FROM THE FERRY.

W. DAVIS & SONS, makers of **HERCULES** Harness, Horse Collars and Saddles, are now located at 333 Market Street, three blocks from the Ferry. :: :: :: ::

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We now supply trunks, traveling bags, automobile and carriage lap robes, and all leather goods. This is a cordial invitation to come to see us.

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333 Market Street, San Francisco.

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Date of Sale, Sept. 22. Time 1 p. m.

For complete catalogue, write **ELMER LAMB**,
T. J. GILKERSON, Lemoore, Auctioneer. Secretary, Ceres, Cal.



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SUCTION-FEED
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Will save you up to \$100 a year over any other separator. For this reason: Every separator (except Sharples) will lose cream when turned below speed (as 19 out of 20 people do). Sharples skims clean at any speed—due to the wonderful "Suction-feed" invention. Write for our catalog.

The Sharples Separator Co. - West Chester, Pa.
Branches: Chicago San Francisco Portland Toronto

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1300 YEARLING RAMS AND 1000 EWES.

These sheep are purebred, large and smooth, with heavy fleeces of fine, long, staple, white wool. Individuals or carload lots.

Prices reasonable.

Correspondence solicited.

CHAS. A. KIMBLE, HANFORD, CAL. Breeder and Importer.

It with his Bings, Royal Anns, etc. So with Mr. Ridley of the Wil-lows, who has one tree of Napoleon which he propagates from; and these trees bear at four years and annually heavy crops—the others do not. In-

stances can be multiplied. I propa-gate from Mr. Ridley's Napoleon, and from Thompson's Tartarian (of old Soscol orchards, Napa). There is a wonderful difference. Morgan Hill. Leonard Coates.

Growing Large and Medium Sized Hogs.

(Written for Pacific Rural Press.)

Because he had a chance to com-pare the growth of a barren pure-bred sow with that of a barren grade sow about the same size, Wm. Bern-stein of Kings county decided about seven years ago to raise purebred swine instead of feeding his bakery refuse and stale bread to scrubs.

Since then his hog establishment has literally taken the 40-acre farm, for practically all of the feed grown on the place is sold in the form of roofs. These provide plenty of registered hogs.

Fifteen acres are seeded to alfalfa, the balance being cropped to corn, summer crops, and grain hay.

The hogs are run on the alfalfa pasture in pens about 32 feet wide and 200 feet long, equipped with home-made shelters constructed out of fence posts and thatched straw space for exercise; and by grouping the various sized pigs into separate pens, the room required for the hog lots is not excessive.

Self-feeders have been satisfac-torily used with young growing pigs, rice middlings, tankage, barley, corn, bran, shorts, salt, and charcoal hav-ing been used. To sows and younger pigs the grain ration is fed in the form of slop, barley being the chief feed used. When fed to sows with pig, about a bucket of soaked barley to seven sows is the usual daily al-lowance, experience having shown that sows fed a grain ration have

much stronger pigs than those de-pending solely upon alfalfa.

Poland Chinas are the breed grown on this ranch, and while both the medium and large types are kept, the preference is for the large type; because a comparison of growth in the two types on this ranch has shown more pork at the same age for the larger type.

Mr. Bernstein does not believe in the extreme large coarse type. He believes that it is possible to get a more refined large type by selection, similar to the present-day medium type, having good hams, smaller head, and being more prolific. He also argues in favor of the larger type because he believes they can be held more profitably after arriv-ing at the preferred market size. That is, the larger hog can be kept growing even though the market is off for the time being, while the medium type is more apt to have gained almost his maximum weight and must either be sold on a poor market or held at an added expense for feed, labor, etc.

The Alpine Evaporated Cream Co. are remodeling their old Hollister plant with the intention of opening it this fall. They already have be-tween 25,000 and 30,000 pounds of milk daily guaranteed them. At their Gonzales plant they are han-dling 140,000 pounds of milk daily, secured from the district lying be-tween Chualar and San Miguel.

THE BOSS'S PIG-FEEDING EXPERIMENT.

By "Hired Man," Kern County.

My boss is a big grain miner,—I mean farmer. He does a good crushed barley business, for he isn't pressed for money, and can afford to hold. But last fall his big granary full of crushed barley got infested with small red beetles, which increased so during the winter that it seemed likely the boss would find his barley all turned into beetle meat before he could use it any other way.

He is a rustler, though, and bought a few hundred thin hogs of all ages, and started them in to race the little beetles for pos-session of the barley. He made a fine feed yard, with good fresh water supplied in abundance. We hauled the barley in the sacks, and fed it in shallow troughs which were scattered about in the feed yard. It took some maneuvering to get an open sack close enough to these troughs to avoid some waste, for every one of these grunt-ers was true to type. After the grain was in the trough there was considerable waste, owing to the fact that they were just plain pigs, more fond of standing in the trough than out of it, and equally keen on filling their mouths at one trough, and running to the next one, spilling a good share of the first mouthful on the way. I had seen self-feeders used successfully, but the boss didn't ask advice, and I didn't offer any. We just kept on throwing barley at those hogs till they ate up and tramped into the ground the big granary of barley. Then we drove our army of very fat hogs to town and the boss took them into 'Frisco.

He says there is no money in hogs,—that he lost a thousand dollars on his experiment,—that he could have sold his barley, in spite of the beetles, for more than he got for his hogs by a thousand dollars. He is right about that part of it. He is wrong about there being no money in hogs.

But his mistakes are so typical of hundreds of grain farmers that they are worth pointing out.

(1) The hogs he bought were nearly all over six months old, and should have been on the consumer's table before he bought them.

(2) His way of feeding was wholly wasteful.

It cannot be too strongly emphasized that a hog after six months becomes as truly a "robber hog" as the worst type of our "boarder cows."

The REMCO SILO

Made of Air-Dried Redwood The Standard

Mr. A. L. L. Dairyman,
Everywhere, Calif.

Dear Sir:

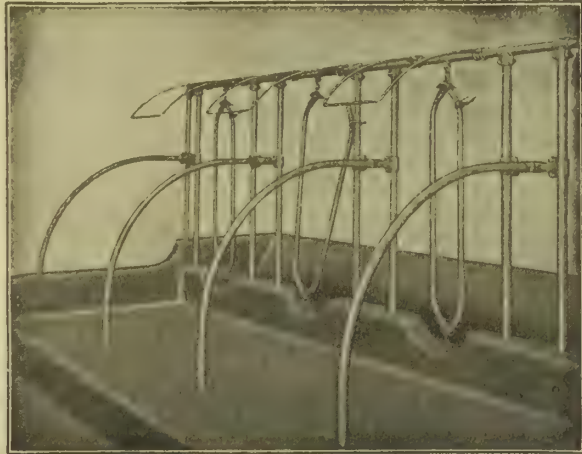
What would you give for Green Pasturage the year around? If you had it you'd make a lot more money, wouldn't you?

You can have it or its equivalent, THROUGH SILAGE, at less cost in labor and money than through natural pasturage, almost without re-gard to seasonal conditions and dependent only upon your own efforts.

Corn is not the only crop for silage. Feterita, Milo Maize and Other Sorghums, Barley, Oats, Alfalfa, Vetch and Cowpeas all make good silage.

You do not have to wait until next fall to profit from a silo. Fill it in the spring with fall-sown grain or the first cutting of alfalfa, and insure against such losses as you had this season. Ask us about it.

Redwood Manufacturers Co.
1608 Hobart Bldg. San Francisco



Sanitary Barn and Dairy Equipment

SEE COMPLETE EXHIBIT AT

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Catalogs and Barn Plan Books Free.

CALIFORNIA HYDRAULIC ENGINEERING & SUPPLY CO.,
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HOPLAND STOCK FARM REGISTERED SHORTHORN BULLS

REGISTERED BERKSHIRES (Boars, Bred Sows and Glts)
HERD BOAR, ROYAL POINTER 2nd, 197092, First Prize

Senior Yearling, P. P. I. E.

3 REGISTERED HOLSTEIN BULLS from High-Testing Cows.

SAN FRANCISCO OFFICE.

1210 FLOOD BLDG.

Digester Tankage

Send for Sensible folder on feeding hogs

Western Meat Company

Animal Food Dept. 704 Townsend St., San Francisco

Being a "Knower," Not a "Guesser."

The Story of Accomplishment on a Pioneer's Grain Farm, and How a Native Son Breeds Holsteins at a Profit.

The thing that most impresses you is that he is a "knower" rather than a "guesser." He comes the nearest to filling the title of "Efficiency Engineer" of any agriculturist we have ever met.

Ten years ago, he assured us, there were 10 sacks of grain left on the ground when they harvested a 30-sack crop of grain. Now a hog gets poor following his machine. "What's the use of growing grain if you don't put it in the sack?" he asked. What indeed is the use? Yet how many have learned that by slowing up the harvester this saving of grain in the sack is so great?

That "stopping of leaks" is, we found, a characteristic habit of Glon Gibson, manager of the J. S. Gibson Company's ranch near Williams, Colusa county.

When he took charge of the ranch, on which his father pioneered, grain, hogs, and horses were the revenue-getters. As with so many big-acred ranches, the land was showing the need of something else than a grain diet. The horses and hogs helped some for they were kept in large numbers, but still there was a fertility leak that required the diversification cure.

Diversification meant water development. That meant wells and wells meant machinery. It all meant money; but after spending a small fortune, largely attributable to dry holes, he eventually got water. Enough to some day irrigate 300 acres, although but 75 have yet been seeded to alfalfa.

In spending this time and money he had a well-defined plan in mind. He would feed the alfalfa to dairy cows, put the manure on the land and the skim milk into hogs. Instead of keeping hogs a year, he would turn them off at six to eight months. Counting each month as a leak he would save four to six leaks on every hog.

Before this time he had started to breed better hogs. Not because he "guessed" they would make more money but because results showed that they did. He finally went so far on this "know" basis as to start a purebred Berkshire herd, not so much to become a breeder of purebred hogs as to become a more economical producer of market hogs.

Probably his experience with hogs had a lot to do with the way he bought dairy cows. At any rate when he started on a commercial scale six years ago, he ran true to form by purchasing a herd of registered cows. He was too good a "knower" even then to expect all of the 30 head to be as good ones. And they weren't. Some had tuberculosis. They were disposed of. Others were shown up by the scales and the Babcock tester to be registered boarders. They met a like fate.

But this didn't all happen at once. It was spread over a couple of years. In the meantime he had purchased another purebred Holstein, a bull that was later to have a finger in international Holstein pie cutting.

Critics may accuse him of being lucky in this particular case. We

thought so at first, but as he related the buying transaction of that bull we admitted that his "knowing" was the responsible factor.

In the first place he didn't look for the cheapest bull he could buy. He went to a prominent breeder with the request that he be shown the best young bull on the place. He was shown one, out of a promising young cow, and bought him for \$500. Five years ago that wasn't an every-day price by any means.

You can call it luck that this bull's dam, Tilly Alcartra, later became a veritable fountain of milk and broke world's records for milk faster than the target setters could adjust their sights. But it wasn't. It was "knowing" the good business doctrine that "you get what you pay for" that had landed him in fashionable company.

Tilly's record-breaking stunts came almost three years after the bull transaction above related. During those years the Gibson Company learned a lot about Holsteins. They also began to diversify their farm crops by growing some to balance the dairy ration. A silo was erected and that called for corn, a good rotation crop with grain. Incidentally they were increasing their average production by testing and weighing the milk. Then they were beginning to get a few calves, sired by their young bull.

About the time these calves began to come, private advices said that Tilly Alcartra was on a "world busting tour"; and before any of them were a year old her record of over 30,000 pounds of milk was officially announced. When Holstein breeders began looking her up in the blue book they found that her best bred son, the only one being used on a purebred herd, was owned by the J. S. Gibson Co. and that his name was Prince Alcartra Korndyke.

We leave it to the reader's mind how Prince, as he is known on the Gibson ranch, pyramided in value, confident that he won't over-guess the price that was refused for the bull.

That was less than two years ago. Since then Prince's mother has completed a two-year world's record for milk that astounded everyone. Since then the official testers of the University of California have spent much time on the Gibson ranch. At first they worked on the cows selected from the original foundation herd. During the last year they have from time to time, found new cows in the herd—cows that Glon Gibson went out and purchased for several times what he paid for his bull. His bull is too valuable to limit to a few cows. He is too good to breed to poor ones. So when Mr. Gibson has seen good cows for sale he has bought them, notwithstanding that Holstein values have been high.

Don't think, though, that his bull has carried him off from his otherwise conservative course. He hasn't been five years at breeding for nothing. Last year when he paid the top price at an auction sale for Winnie Korndyke Cornucopia some

Auction Sale!

AT

Modesto, Cal., September 28, 1916



LILY OF S. B., 1st Prize-Winner at Oregon State Fair, One of the Many Good Ones in This Sale.

75 REGISTERED JERSEYS 75

This will be a complete dispersal sale of one of the finest herds of Registered Jersey Cattle in California, consisting of 48 mature cows, 22 Heifers 6 to 12 months old; one Herd Bull and 4 Young Bulls. These cows, heifers and bulls are typey individuals and prize-winners, and are of the best blood, being close descendants of Golden Fern Lad, Famous Tormentor, and Interested Prince, Bulls of World Renown.

For further information and catalog write

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MURRAY & JONES,
Owners,
Modesto, Cal.

AUCTION SALE

OF

40 PURE BRED 40 POLAND CHINAS

AT

Modesto Livestock Show Expositions

SEPTEMBER 20th.

CONDUCTED BY

POLAND-CHINA BREEDERS' ASSOCIATION
of North San Joaquin Valley.

Consigned by Members:

A. M. Henry, W. A. Young, T. J. Spalding, A. J. Robinson, H. I. Marsh, R. J. Miller, J. A. Clark, Geo. V. Beckman, C. A. Stowe, T. H. Beckman, O. L. Linn and others.

SOLD WITHOUT RESERVE.

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O. L. LINN, Sec'y,

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BIG TYPE POLAND CHINAS

Gilts from Weanlings to one year old. Bred or open. Boars from weanlings to 8 months.

THE BROWNING STOCK FARM

W. H. BROWNING, PROP.

WOODLAND, CAL.



One of Gibson's High Record Cows.

Stacking Hay with Donkey Engine.

Son of Prince Alcartra Korndyke.

wondered if she was worth it. In the first 120 days of her yearly test she had averaged 100 pounds of milk a day and put on 300 pounds of flesh. Also she had increased in value some, an offer from another breeder of twice her purchase price being turned down.

Perhaps nothing so well answers the question "Will the Gibsons stick?" as this refusal, time after time, to sell at a high price what they have bought at a lower one. The same has been true of the granddaughters of Tilly Alcartra. Always there is a demand for them, but they are all on the Gibson ranch. Twenty of them will freshen next fall, having been bred to Segis Cream Cup Pontiac, a son of Segis Pontiac De Kol Burke and a grandson of the previous world's record cow Riverside Sadie De Kol Burke. This intensifying of record breaking ability will be continued in order that the family legend "The Name Gibson Insures Quality," may be perpetuated.

At the beginning we said that Gion Gibson was a "knower." This holds true with each department of his farming. Besides Holsteins he grows wheat, barley, oats, corn, milo maize, beets, alfalfa, hogs, and horses. They are all given a place in the big ledger at the office, and while red ink entries are seldom necessary, they locate leaks before much damage is done.

After all it is at the office that you most appreciate the efficient manner in which this farm is managed. As Mr. Gibson settles down in his chair after a hearty evening meal, and that is the only time he seems to have for office work, he throws a lot of enlightenment on features that have been bothering you.

The donkey engine that you saw out at the hay stack is used, you learn, because it stacks hay cheaper and more quickly than a horse. You learn that while he raises horses for the market he uses a tractor to do his plowing and that he spent \$2651 on it last year while it was doing \$2767 worth of work, figuring on a basis of \$15 a day rental.

You also see that the hogs are charged 20 cents a hundred for skim milk from the dairy and that they didn't pay as well last year as in years past. That the house is charged up with milk and cream from the dairy as well as other products grown on the farm.

If you take the time you can see to a cent the expense account of each member of the firm last year, the mother, two sisters, and Mr. Gibson. And then there are the entry spaces for horses and mules, sheep, tractor, hay, grain, ma-

chinery, improvements, hogs, dairy, and house.

After looking and marveling at his book-keeping system you are not so terribly surprised to see an adding machine, the first one you have ever seen on a farm—bought because it saves time in adding milk records, or other long columns of figures. In other words it puts the "know" on paper and eliminates guessing. And anything that does that has a place on the Gibson farm.

COW TESTING ASSOCIATION RECORDS.

[Written for Pacific Rural Press by Prof. F. W. Woll.]

Replying to your inquiry, regular cow-testing association records will be accepted in the State Dairy Cow Competition for prizes; but it is very likely that we shall require that at least two of the monthly tests shall be conducted by one of the regular supervisors employed by the College. This requirement is made when the men in charge of cow testing associations conduct official tests of cows owned by members of their association. This seems desirable and necessary, in justice to all concerned, and to make certain that this work is conducted in a similar manner throughout the State.

We shall require owners of cows entered to furnish copies of the milk records for each month, where such records are kept regularly,—otherwise, our own men, or the men in charge of the cow testing associations will take care of all records required. All the necessary blanks are supplied by our College. Entry blanks will be sent out from Oct. 1, and later.

SHARKS IN FARM LOAN WATERS.

Secretary Flannagan of the Federal Farm Loan Board at Washington has issued a warning to farmers that solicitors are busy in several states without authority of the board, attempting to collect money for the organization of national farm loan associations.

Such associations are authorized under the laws and are to be formed by farmers who desire loans.

"The representation by any person that any organization is now offering to make loans by authority of the farm loan board under the Federal farm loan act is false," said Flannagan.

Flannagan said information had been received from Montana, Idaho, and other Western States to the effect that unauthorized persons were soliciting subscriptions there. He said farmers personally known to each other should plan the organization of loan associations.

PREFERS SOILING TO PASTURING.

A dairy cow should never be pastured, not only because of danger from bloat but also because of the damage pasturing does to alfalfa, believes A. J. Hesse of Merced county.

But green feed is necessary for the maximum returns; and this is

accomplished by feeding green alfalfa and corn during the summer season, two feeds of alfalfa and one of corn being the rule. Not only does this prevent packing of the soil which retards the growth of alfalfa, but it results in a direct saving of hay, as there is practically no waste of the green alfalfa or corn fed in this manner.



SANTA ANITA RANCHO

ANOAKIA BREEDING FARM



First Annual Sale, October 23rd and 24th

THOROUGHBREDS: A few mares and some two and three-year-olds, sired by the famous Derby Winner, **Rey El Santa Anita**, and the noted stallions, **Palo Alto** and **Jake Argent**, out of famous thoroughbred mares.

ARABIAN THOROUGHBREDS: Two-year-olds, sired by Imported Stallion **Ibn Mahrudd**, head of our Arabian Stud. Dams are the choicest thoroughbred mares of Santa Anita Rancho.

SADDLE HORSES: Fourteen of them, some of which are sired by **Ibn Mahrudd**, world renowned imported desert saddle stallion, and **Don Costano**, a five-gaited Kentucky saddle stallion. These horses are mostly three-year-olds.

POLAND CHINA AND BERKSHIRE BOARS: Four to nine months old. Sired by famous Poland China herd boars—**Banker's Boy** and **Glenview Wonder**. And Berkshire Boars—**Kintyre Laird**, **Grandson's Duke** and **Fashion's Longfellow 5th**.

The dams are from the very best blood lines. Most all these animals have winnings at World's Fair. Write for catalogue.

HOLSTEINS: We will sell a number of young bulls. Some sons and grandsons of the noted **Prince Gelsche Walker**, and bulls from one World-Record cow and two California State-Record cows. Sixty females of the highest class will be consigned. Write for catalogue.

WORK HORSES AND MULES will also be offered for sale.

WRITE FOR PARTICULARS.

Anita M. Baldwin,

W. H. TAYLOR, Superintendent.
Santa Anita, Cal.

GRANDSONS OF TILLY ALCARTRA



Prince Alcartra Korndyke,
Best bred son of Tilly Alcartra.

Our supply of these young sires is always limited, but we have a few now which we are offering at very reasonable prices.

Write us at once, or call and see the herd.

J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

At prices within reach of every Breeder and Dairyman.

When you buy a son of our herd sire, **Prince Alcartra Korndyke**, you get more than a Holstein bull with registration papers—you get a grandson of the world's greatest milk cow out of a high-testing A. R. O. dam. Our herd of females has been developed into one of the best in the State.

FOR SALE

Two Imported Registered Shire Mares

Nine years old; well broke to work, absolutely sound, regular breeders. Have foals this year. Now in foal by **COLUMBIA MODEL**, winner P. P. I. E. Span weighs over 4000 lbs. Price reasonable. Selling account overstocked. For prices and further particulars, address

BRIDGFORD COMPANY,
Knightsen, Contra Costa County, California.

With the Livestock Men.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

DAIRYING AND DAIRYMEN.

A casein plant is to be established in Modesto which will use the skim milk from 3,000 cows. Casein is used as a substitute for albumen in the dyeing of calicos and in the manufacture of paper and buttons.

Seven carloads of thoroughbred Holsteins from some of the noted herds in Wisconsin have been bought by Sacramento dairymen. Fred Kiesel and J. M. Henderson, Jr., of Sacramento are among the heavy purchasers.

T. S. Griffith who furnishes purebred Jersey milk to Spokane held a banquet in his cement cow barn, to which a number of his friends and a deputation from Spokane were invited. The Jersey cows present behaved decorously.

A Tulare dairyman keeps his can of cream cool until the hauler gets it by having iron rings inside a sack big enough to hang over and around the can. A drip of water is turned onto the upper end of the sack. The hauler turns the water off.

The Harmony Valley Association are erecting a cheese storeroom with a capacity of 50,000 pounds of cheese at their plant in San Luis Obispo county. This concern annually makes about 200,000 pounds of cheese and a little over 300,000 pounds of butter.

"Heavier feeding and extra care of cows will pay in more than half the dairy herds of Ohio," says C. C. Hayden of the Ohio Experiment Station. His deduction is based on the fact that little extra time in feeding and caring for the animals is needed and no more stable room nor equipment required.

The Iowa owned Jersey, Sans Alois Tormontress, made 10,514 pounds milk from which was made 662.3 pounds butter in a year, commencing at the age of 3 years 19 days. Her daily production during the first month was 1.76 pounds fat and during the last month of the year's test, she averaged 1.777 pounds fat. She dropped a calf three months after finishing.

HORSES, SHEEP, HOGS, ETC.

Twelve carloads of mules are being shipped from Yolo county and vicinity to Oklahoma City.

J. W. McCord has sold two fine Shire stallions to the firm of Ruby & Bowers. They are shown at the State Fair.

Frank Bullard of Woodland has shipped 57 head of Rambouillet rams and ewes to the Livestock Show at Salt Lake City.

Two carloads of fine cavalry horses bought in the vicinity of Marysville recently were sent "by express" to Chicago, whence they will be shipped to France.

On the first of this month the price of hogs in the East jumped up to the highest level reached since 1865. Choice hogs were quoted at \$11.40 a hundred pounds.

A. H. Tilton of San Bernardino is moving his Percheron stock to Prescott, Ariz., where he also has some 60 purebred Herefords. Five registered mares will be sold, but the stallion, Loussett, imported from France by McLaughlins, will be sent to Ariz.

Chas. Kimble, the well-known Rambouillet breeder of Hanford, Kings county, reports feed conditions in the lower end of the San Joaquin valley very good for sheep with prospects that it will continue to be good through the fall. Shearing is in progress on his flock at this time.

From a western ewe, a fairly good purebred mutton ram at the Mo. Expt. Sta. got a lamb which weighed 60 pounds at three months and sold for \$7.35; while a scrub ram crossed

on a similar ewe got a lamb that weighed 56 pounds at four months and sold for \$4.50.

MISCELLANEOUS.

The Kings County Poultry Association is to be reorganized with a view to more active work.

All abattoirs in New Zealand are municipally owned. This form of ownership of slaughter-houses has worked satisfactorily in every way.

Six carloads of feeder cattle to eat beet tops were shipped one day by one company to the Compton, Los Angeles county, fields recently.

The Second Annual Horse Show and Water Carnival at Rio Vista will be held Saturday, Sept. 23. An attractive premium list is offered.

The Hayward Pigeon Club will hold in November the first pigeon show ever held in that district. Entries of both fancy and utility pigeons will be invited.

O. L. Linn of Modesto has been stocking up with Iowa Poland China sows, one of them being Big Knox Girl having taken the first prize as a gilt in the Iowa State Fair last fall.

Feeding beet pulp to beef cattle has commenced at the Salinas plant of the Spreckels Sugar Co. Beet tops are also being pastured off by cattle men in all of the larger beet growing districts.

The Uruguayan Meat Freezing Plant in the district of Cerro has closed, throwing about 2000 people out of employment. Lack of ships available for neutral commerce is given as the cause.

The Solano County Fair made awards to J. R. Bloom as follows: One-year-old ram, first; one-year-old ram, second; buck lambs, first, second and third; ewe lambs, first and second; pen of four ewes and one ram, first prize.

In the combination sale of McAllister & Sons and Col. Ben. A. Rhoades at Rivera Sept. 19-20, there will be consigned seventy head of their best stock. Among the A. R. O. cows is Venango Queen, who has a record of 27.27 lbs. butter in seven days. Good 2-year-olds to be offered are Cleopatra Constantyn, who made 22.21 lbs. butter in seven days, and Betsy Lamb Prilly, who made 20.13 lbs. butter in seven days at 2 years and 8 months.

R. K. Walker of Peters, Lamson & Walker reports the purchase of some of the best breeding Duroc Jerseys ever brought into the State. They consist of two boars and a gilt, all line bred Golden Models from the herd of Mr. Waltmeyer, Melbourne, Iowa, the originator of the Golden Model family. One of these boars was the best pig Mr. Waltmeyer had raised this year. He also selected four Defender-Golden Model bred gilts, a combination of breeding that is becoming very popular in the East. These animals may be seen in the Peters, Lamson & Walker herd at the Riverside fair, Oct. 10-14, or at the Devore Ranch ten miles northwest of San Bernardino, on the main lines of the Santa Fe and Salt Lake railroads and on a concrete road from Los Angeles. Mr. Walker did not buy these animals by mail, but spent a month among the best breeders of the East selecting them.

LIVESTOCK FAIR NOTES.

Winter silage is one of the principal questions in Nevada. At present there are but three silos in the State. Corn is almost out of the question, but there is some talk of trying wheat for silage.

The Napa County Farm Bureau Fair will be held at Napa, Sept. 14-16. Livestock entries for the fair are being received rapidly. A. L. Tubbs, a member of the Yorkshire

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2 1/4 c per word.

SWINE.

Poland Chinas.

BIG TYPE POLAND CHINA HOGS—Bred sows, bred gilts, open gilts, weanlings, both sexes, boars ready for service. Herd sires, Iowa Wonder and Joker. Iowa Wonder is a son of "A Wonder," the greatest Poland-China boar living or dead. Joker was the First Prize boar in the Under Six Months Class at the Wisconsin State Fair in 1915. All animals are registered free of charge. Prices low on account of being overstocked. All animals first class. Quick, easy feeders, the kind the farmer wants. As a special premium each purchaser will be given a year's subscription to the "American Swineherd," the special advocate of the Poland-China, and a copy of "The Handbook on the Sow" and "The Pig Feeders' Manual." Write Geo. A. Smith, Corcoran, Cal.

FOR SALE—One tried Poland-China brood sow; bred for second litter to an Orange Wonder Boar—\$35. One Nov., 1915, gilt, bred to Matchless Perfection 2nd, "an extra good boar from Davis College"—\$30. Four extra good, thick, long and deep February gilts—\$20 each, out of a 500-lb. sow and sired by a W. A. Young boar—\$20 each or the four for \$70. All recorded. Crated and transferred to C. B. Safe arrival and satisfaction guaranteed. N. M. Lester, Gridley, Cal.

YOUNG POLAND CHINAS, LARGE TYPE—Boar IBA Wonder won first and Reserve Championship P. P. I. E., weighing 730 pounds under 2 years and in breeding condition. 60-day special—fine young sows bred to IBA Wonder at very low prices; also weanling pigs, either sex. Satisfaction, or money refunded. W. A. Young, Lodi, Cal.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated, purchaser to return crates. E. A. Hall, Watsonville, Cal.

LAKESIDE STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Linn, Linview, Route 4, Modesto, Cal.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

POLAND CHINA HOGS FOR SALE—Registration papers furnished free. C. A. Cooley, Durham, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

POLAND CHINA HOGS—Registered. Cholera immune. E. J. Miller, Llewellyn Ranch, Lathrop.

SIX REGISTERED, large-type Poland-China boars, six months old. \$10 each, if taken immediately. Route 1, Box 34, Galt, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

KNOX HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington.

REGISTERED POLAND CHINAS—Young stock for sale. J. H. Cook, Paradise, Cal.

REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED POLAND-CHINAS and Duroc Jerseys. M. F. Harrold, Orland.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

Berkshires.

REGISTERED BERKSHIRES—World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapeville Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

BERKSHIRES—Herd headed by Artful Masterpiece and Improver B. Grand Champion at California State Fair, 1912 and 1913 respectively. Open sows, service boars and weanlings for sale. Oak Grove Dairy Farm, Box 1, Woodland.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

SPECIAL SEPTEMBER OFFERING—Berkshire boars 3 to 11 months. Also aged boar. Write for photo and prices. Imperial Stock Farm, Morgan Hill.

REGISTERED PUREBRED BERKSHIRE PIGS—Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

REGISTERED BERKSHIRES—For sale, bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. Mikesell, Manteca.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

BERKSHIRES—Carruthers Farms, Mayfield, Cal. Second annual sale, August 2, 1917.

REGISTERED BERKSHIRES—Weanling pigs \$10 each. G. A. Casey, R. 7, San Jose.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

CHAS. GOODMAN—Breeder of high-class Berkshire Swine. Williams, Cal.

REGISTERED BERKSHIRE PIGS—Write or call Greenwood Ranch, Brentwood, Cal.

Duroc-Jerseys.

REGISTERED DUROC-JERSEYS—60 head priced to sell before October 1st.—Bred sows and gilts, open gilts, boars, and spring pigs, representing the most noted families of the breed. Only choicest individuals, shipped for breeding purposes, at prices within reach of every one; absolutely guaranteed and in first-class condition. For particulars write to Haden Smith, Route 1, Box 84D, Woodland.

DUROCS from River Bend Farm, St. Helena, Cal., are large type, smooth, rangy, with fine backs and deep cherry color. We sell only those we'd like to keep in our herd. Don't write us if you want cheap stock.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boudier & Son, Napa.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High class pure-bred hogs, both sexes, any age.

THOROUGHBRED DUROC-JERSEYS to farrow in August. Dr. T. A. Guthrie, Woodland, Cal.

REGISTERED DUROCS from best Eastern blood lines. S. S. Southworth, Napa.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROC JERSEY SWINE—Frederick M. Johnson, Napa, Cal.

REGISTERED DUROCS—All ages. Either sex. W. A. Pack, Hollister, Cal.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

REGISTERED DUROCS—H. N. Leininger, R. D. 4, Chico, Cal.

Other Breeds.

BILLIKEN HERD OF IMPROVED CHESTER WHITES—The Farmer's Utility breed. Quiet disposition, big, uniform litters, easy feeders, rapid growers, size combined with quality. 15 bred gilts and 60 spring pigs, of both sexes, to offer. Prices are reasonable and quality is high class. The best and most popular blood lines of the breed are represented in this herd. Every one immunized by the virus-serum treatment. Write for circular and prices. C. B. Cunningham, Mills, Sacramento County, Cal.

HAMPSHIRE SWINE—Fancy belted boars and sows. Good ones, \$25 and \$20. Better ones up to \$45. All registered. Ben F. Thorpe, Manager, Canfield Estate Ranches, Bonsall, Cal.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

LARGE YORKSHIRE SWINE—Gilt to farrow in September and October. Service boars and spring pigs. Both sexes. Riverina Farms, Paradise Road, Modesto, Cal.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millspaugh, Yolo, Cal.

REGISTERED IMPROVED CHESTER WHITES—Grizzly Bear Ranch, East Auburn, Cal.

REGISTERED O. I. C. SWINE—C. D. CONWAY, Ripon, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Rambouillet and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

THE BULLARD FLOCK RAMBOUILLETS—Founded 1870. Largest Merinos on Pacific Coast. The Bullard Company, Woodland, Cal.

FOR SALE—Shropshire bucks, yearlings and lambs. Individuals to carlots. Purebred but not registered. J. E. Bloom, Dixon.

KAUPE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

BREEDER OF MERINO SHEEP—Rams for sale. J. Bidegaray, Fresno, Cal.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshire.

CHAS. KIMBLE—Breeder and Importer of Rambouillets. Hanford, Cal.

BEEF CATTLE.

FAIR OAKS RANCH WHITES, Cal.—Young registered Shorthorn bulls for sale. Sired by Landseer 379318, grandson of Imported Villager 295884.

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond C Ranch, Esparto, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords. Newman, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

DAIRY CATTLE.

Holsteins.

REGISTERED HOLSTEIN BULL CALVES—Sired by Lorena Korndyke Alcarra, whose dam made 29.75 pounds butter fat in seven days as a four-year-old. J. M. Campbell, Escalon, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Cremelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

REGISTERED HOLSTEINS—Have a few Bulls from El Prado Wayne Colanthes, whose dams and sire's dams average per cent fat at 4 years is 5.01. See my stock at the State Fair. J. W. Benoit, Route C, Modesto, Cal.

REGISTERED HOLSTEINS—Sired by King Korndyke Hengerveld Ormsby 53823. Dam Pieterje Maid Ormsby 78051, world's record when made 35.56. Send for pedigree. Geo. Kounias, Modesto, Cal.

DAIRY CATTLE.

Holsteins.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

HOLSTEIN BULLS—Well-marked, large, straight individuals. Tuberculin tested, \$100 up. Packwood Farm Herd. W. F. Mitchell, Visalia.

REGISTERED HOLSTEINS—32 high-grade Holstein heifers coming fresh this Fall for sale. E. E. Freeman, Route B, Modesto, Cal.

THE McCLOUD RIVER LUMBER CO., McCLOUD, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

REGISTERED HOLSTEINS—Colantha Johanna Lad and Aralia De Kol breeding. Young stock for sale from A. B. O. cows. Lester A. Driver, Nicolaus, Cal.

A SPLENDID 8-months-old Holstein bull with good A. B. O. breeding for \$135. K. W. Abbott, Milpitas, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS Corp., Importers and Breeders, Woodland, Cal.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chino, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from A. B. O. dams. B. F. Anderson, Modesto, Cal.

30 HIGH-GRADE Holstein milk cows for sale at once. Hewitt & Hewitt, Dixon, Cal.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

A. B. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Calif.

Jerseys.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3 lbs. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

VENADESA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly record. Guy H. Miller, Route 1, Modesto, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs. butter as two-year-olds. A. A. Jenkins, Tulare.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

YOUNG REGISTERED JERSEY BULL CALVES at reasonable prices. O. J. Ames, Oakdale.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Haworth, Modesto, Cal.

FRESH JERSEY MILK COWS for sale. E. M. Locke, Lockeford, Cal.

Other Breeds.

GUERNSEY BULL CALVES from Grand Champion Bull. Also Hampshire Swine, both sexes from Grand Champion 700-lb. boar and Grand and Junior Champion Sow. Bella Vista Herd J. W. Henderson 1st National Bank Bldg., Berkeley, Cal.

BREEDERS OF REGISTERED SHORT-HORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

WILLOWMOOR AYRSHIRES—Great records; economy. 300 head in herd. J. W. Clise, Redmond, Wash.

INNISFALL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suva, Cal.

YOUNG REGISTERED GUERNSEY BULL for sale cheap. Guaranteed sound. Kenneth Evans, Gilroy, Cal.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes, McCov, Oregon.

HORSES AND MULES.

REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders, Easton & Ward, Proprietors, Burlingame, Cal.

MISCELLANEOUS.

CROLEY'S Calf Feed with skim milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

D. O. LIVELY, 216 Hobart Building, San Francisco, buys and sells livestock—any kind—any quantity.

DUROCS AND GUERNSEY BULL CALVES Gilt bred to 900-lb. boar. Ed. E. Johnson, Turlock, Cal.

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Dealers 37 FIRST ST., SAN FRANCISCO
In Blake, Moffitt & Towne, Los Angeles
PAPEE Blake, McFall & Co., Portland, Oregon

Club, will exhibit ten large Yorkshire hogs.

The Tri-State Poultrymen's Co-operative Association has selected Fresno as its central distributing point for this State. The association has a membership of 4,000 poultrymen and a capital of \$200,000.

STATE FAIR LIVESTOCK NOTES.

Note.—These are far from complete as the judging was still in progress. Full awards will be given next week.

C. E. Barrows of Santa Rosa lost his aged boar Panama Lee at the State Fair.

There were about 800 hogs at the Fair, about 300 of which were Berkshires.

First prizes in Berkshires at the State Fair went to: H. L. and E. H. Murphy for Rival's Robin 2nd; H. L. & E. H. Murphy, Majestic's King 6th; F. R. Steel, Winona Lee Champion 2d; A. B. Humphrey, Fashion Longfellow 30th; D. C. Beeman, Glen's Duke 20th; A. M. Smith, Winona Royal Champion 5th; A. B. Humphrey, Grand Lady Mayhews 4th; A. B. Humphrey, Grand Bernice, and others judged too late for us to get this issue.

First prizes in Poland Chinas at the State Fair went to: Model Major, owned by H. I. Marsh; Chief Victor, M. Bassett; Gold Boy, M. Bassett; Husky, J. W. Howard; C's Charmer, G. V. Beckman; Miss Beauty, M. Bassett; California Sunlight, University Farm; Gold Drop, M. Bassett; Black Beauty 2d, M. Bassett; Good Style, M. Bassett.

For the Poland China boar and three sows over a year M. Bassett won first, W. A. Young second, A. M. Henry third. For the same under a year, M. Bassett won first, F. D. Ross second, and Geo. V. Beckman third. The same winners in the same order as above took the prizes on boar and three sows under a year bred by exhibitor. For four swine get of same boar and bred by exhibitor, M. Bassett took first, Geo. V. Beckman second.

M. Bassett's Chief Victor was grand champion Poland China boar. The same exhibitor showed the grand champion sow, a yearling.

A. W. Morris & Sons' bull Segis Pontiac De Kol Burke won grand championship. He is a son of the former world record Riverside Sadie De Kol Burke. One of his daughters, Contenta Pontiac Burke, was easily first in her class.

Guernsey winnings were pretty well spread out among the breeders, some of Dupee's Panama-Pacific winners coming back for blue ribbons.

A Hereford cross bred fat calf won over a heavy two-year-old because, as the judge said, it is not weight that is wanted so much as the proportion of weight of the high-priced meat. The winning calf had a smaller proportion of shoulder and a greater proportion of loin.

Two beef bulls were judged. One was fat and much bigger than the other, but his flesh was in patches. The smaller one, belonging to Jack London, won largely because of his smoothness, which indicated to the judge his capability of producing smooth-fattening calves.

T. S. Glide's sheep pens were well decorated with blue ribbons at the State Fair. He had both Shropshires and Rambouillets in the purebred classes.

W. M. Carruthers won the grand championship for his Shorthorn bull Count Glory.

The draft horse show consisted mainly of Panama-Pacific prize winners, though there was also some stock never shown in California before.

Judge Majors of the Holsteins made a hit with the crowds by telling the points from head to tail, on which he based his decisions. Professors Thompson and True also did this to a lesser extent on Guernseys and Berkshires.

Of two hogs that looked alike, one lost because, while it was

deeper, it was not quite so uniform in width, not quite so classy in finish, but largely because its feet were not so strong.

The San Luis Obispo State Polytechnic School would have exhibited two two-year Percherons and a Clydesdale if funds had been available.

STATE FAIR NOTES.

There were 76 automobiles of 31 makes in the big auto tent.

Attendance records were muddled by the burning of the administration building and had not been straightened out on the day of this writing. It was officially estimated that 5000 besides the children attended Saturday, 10,000 Sunday, and 40,000 Monday.

The county and industrial exhibits and all the offices of the State Fair officials were in the Agricultural Building which burned to the ground Sunday night at a loss estimated at \$75,000 for the building and \$100,000 for the exhibits.

Counties which lost their exhibits in the fire immediately forwarded some more which were housed in Sacramento city election booths loaned to the State Fair for the purpose.

Before the Fair closed, Machinery Hall was filled with exhibits besides those in the open annex. Pumps made a stirring sight by shooting water at cross angles to each other over the tank which they surrounded.

SAN LUIS OBISPO DAIRYMEN ORGANIZE.

At a large and enthusiastic meeting of the Dairymen of San Luis Obispo county, it was unanimously agreed to organize a Dairymen's Association, to promote the breeding and improvement of high grade and purebred dairy cattle in San Luis Obispo county and to aid its members in buying, breeding, and selling first class animals; also the establishment of a good reputation for San Luis Obispo county as a dairy center. When the association is completed, its members will list nearly five thousand cows. The following officers were elected: President, Mr. A. B. Spooner, Jr.; vice-president, Mr. E. R. Lewis; secretary, E. L. Westover of the Cal. Polytechnic School; treasurer, S. J. Lowe. These officers were given power to appoint a director from each of seven or eight districts.

NATIONAL WOOL GROWERS' RAM SALE.

The first annual ram sale held under the auspices of the National Wool Growers' Association at Salt Lake City August 30, to Sept. 1, was decidedly the biggest event of its kind ever staged in America according to Chas. Kimble and other prominent California sheep men who were in attendance from California.

Because of the interest in the show and sale the proposed meeting was postponed till January 1, and in the future meetings and sales will be held independently of each other.

Lincoln-Cotswold breeding rams sold from \$100 to \$500. There was no competition in the Shropshire, Romney and crossbred division but all were represented.

What is said to be double the price ever before paid for a Hampshire ram in this country was \$615 by Walnut Hall Farms of Kentucky. The first prize pen of Hampshire rams sold for an average of \$205 to Brown Bros. of Idaho, and the second prize pen, of Butterfield Livestock Company's breeding, sold for an average of \$130 to Wood Livestock Co., Spencer, Idaho.

Of the 3,000 head sold all were rams but 150 head of ewes, and prices were the most startling on record, the highest price being secured by the Butterfield Livestock Co. of Idaho, for a Rambouillet ram. J. H. Seeley of Mt. Pleasant, Idaho, paid \$1,000 for this ram. A. A. Wood & Son of Michigan were buyers of the second highest priced Rambouillet ram at \$800. The first prize pen of 25 ram lambs of this breed sold for an average of \$65 a

head, the second prize pen for an average of \$90 a head, while the third prize pen consigned by the Bulard Co. of California, sold for an average of \$65.

COVERED FEED RACKS.

[Written for Pacific Rural Press.]

In no place do dairymen enjoy a milder winter climate than in California; yet it is being recognized by progressive farmers that the practice of compelling the dairy herd to stand out in cold rains and muddy corrals materially reduces the butterfat income.

One of the most inexpensive methods of overcoming this loss is the feed shed and shelter system used at the Napa State Hospital near Napa.

Two 100-foot feeding sheds 28 feet wide are provided for this herd, the gabled roofs being shingled. These roofs are supported by heavy uprights along the sides and in the feed alley that runs the entire length of the building. This feed alley is wide enough to accommodate a small feed truck; but V. L. Heath, foreman of the dairy, believes they would be more convenient if built wide enough to accommodate an ordinary hay wagon. This would necessitate a wider building.

The hay racks have mangers underneath to catch all loose hay that may drop through the slats. A brick-covered floor is provided in front of these mangers, this floor being wide enough so that the roof protects the cattle from heat or rain while they are eating.

The sides are open; the cattle come and go at will; this is true also of the shelters, built exactly like the feed sheds but omitting the feed racks.

With well-drained corrals and brick or concrete floors, which can be easily cleaned, this system dispenses with the usual winter mud, almost entirely.

MODEL HERD OF BERKSHIRES

Bred for size, bone and quality. Pigs for sale, sired by Big Royalist 180837 and Breed's Model 165859, both winners of blue ribbons at State Fair. Descriptive catalog upon request. J. L. GISH, Laws, Inyo County, Calif.

Tamworths and Duroc-Jerseys

We can fill orders for mature stock and weanling pigs of both sexes. This is the largest herd of TAMWORTHS in the State. Our Stock is sure to please.

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SWINELAND FARM.

W. O. PEARSON, Prop.

Woodland, California.

DUROC JERSEYS

Headquarters for the best in Golden Model and Colonel breeding. These are the two leading families of the breed. Ranches at Holtville and Devore, San Bernardino County.

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GET STARTED RIGHT

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Service Boars from Prize-Winning Stock are money makers.

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Will conduct sales anywhere in California.

Purebred livestock sales given special attention.

For dates and terms address T. J. GILKERSON, Lemoore, Cal.

OPENING DAY STATE FAIR.

(Continued from first page.)

Livestock was magnificently represented. Numerous and commodious as were the stalls, there were scarce too many in any class. The time will probably come soon when all the exhibit livestock may be together at one end of the grounds. It seems too bad to have horses and dairy cattle at one end, while other cattle, sheep, hogs, and horse-show tent are at the other. Very few cattle other than Holsteins could be accommodated around the general dairy exhibits, and the rest of the dairy cattle were at the north end.

Such a display as it was! The winners in most of the classes and divisions may well boast of their winnings. Aged bulls, and young calves seemed especially numerous and fine.

Hogs were surprisingly numerous, and of fine quality. Almost every one of the new pens was occupied, many with more hogs in each than one might have expected. Weight, quality, fecundity and ability to transmit quality to offspring, were all well illustrated by the leading breeders of this State and Oregon.

Horses filled practically all the stalls available. This class was especially strong in Panama-Pacific prize winners. Drafters, racers, saddle horses, and ponies were considerably mixed, so one would have to look at all the stalls to be sure he had seen all of his favorite breed. Extra care had been taken in decorating some of the stables. Fifteen

or twenty ponies were located in a rather inconspicuous shed.

Beef Cattle made a small but quality class, mostly Shorthorns. From the proportion of whitefaces which come to our stockyards, it would seem they would be stronger at the Fair. We remember some very nice Herefords at the 1908 State Fair, though we were informed that these had been bred in the East and brought to California to improve range stock. The University had an educational variety of breeds.

Sheep.—There were quite a few sheep, Shropshires predominating, but with a good show of Hampshires and Merinos—more than our list of entries indicated. These being blanketed, were less subject to observation and criticism prior to the awards, but there were exhibits from the northern States and many former prize winners.

Identification of Exhibits.—The University and a few other breeders did something which, if more generally practiced, would double the value of livestock exhibits to visitors and greatly increase their advertising value to exhibitors. The University placed simple cards over each pen, telling the breed, name, date of birth, and present weight of stock. In case of beef, they also gave the cost per pound of gain. One breeder showed on similar cards the breed, class, and name of stock, and name and location of the farm and owner. Other breeders designated their Panama-Pacific prize winners.

Amusements.—Joe Boquel did some of his most spectacular flying. Horse races amused the crowd while he was soaring to become a mere butterfly, seeming to rest on the fleecy clouds, but no horse race could draw attention while he was whirling his slim corkscrews straight down, or rolling over and over in the air. His loops seemed tame in comparison. Of the aggregation of cheap entertainments behind the grandstand, little can be said except that they were predominantly immoral gambling devices, insidiously encouraging children's and degenerates' ideals of getting something for nothing.

EYE HOG PASTURE.

[Written for Pacific Rural Press.]

California farmers don't fully appreciate the value of rye as a field crop for livestock, according to George Farmer of Kings county, who has been raising it in small fields for several years with good results. As an illustration of the carrying capacity of rye as a hog feed, Mr. Farmer tells of his experience the past spring with five acres of early winter seeded rye. In December the rye was high enough to warrant turning 78 weanling pigs into the field, where they were pastured continuously till May 1, at which time they weighed an average of 101½ pounds. After taking the hogs off the rye, it was allowed to go to seed; and when finally harvested, it went eight sacks to the acre. Later the ground was irrigated and plowed and put into a summer growing crop.

The chief advantage of rye is its hardiness as a pasture crop. Mr. Farmer believes, but if cut in the boot, he has found it makes a very good quality of hay.

Good Enough for Any Herd



AAGGIE GRACE PONTIAC
CREAMELLE,

Half Brother of Marie Clothilde
Pontiac Creamelle, California
Champion 2-year-old.

This youngster's dam, Aggie Grace Brookside Princess, grand-daughter of Pontiac Korndyke, the greatest Holstein sire in the world, has an official record of

28.17 lbs. BUTTER - 456 lbs. MILK
TEST 4.0%

This record was an increase of 6 lbs. butter over her previous record and I expect her to make at least 30 lbs. on her next test.

His sire is Dutchland Pietertje Creamelle, one of whose daughters at 2 yrs. 1 month has just made a record of 22.62 lbs. butter, 391.7 lbs. milk, test 4.72%, making her California's champion 2-year-old.

This young bull is perfect in type, is 50% white and just ready for service. Born Apr. 22, 1915.

My showing at the State Fair will include the Champion 2-year-old, her dam, her full sister, and a few choice young bulls for sale.

BREEDER OF HIGH-TEST
HOLSTEINS.

F. STENZEL

SAN LORENZO, CALIFORNIA



Labor Cost

on dairy and stock farms is one of the largest expense items. Light and sanitary barns are as necessary as proper feeding to get the best from your herd. You can paint the inside of your buildings as white as snow and with the same operation, at no extra cost for labor, thoroughly disinfect them against the diseases that affect your livestock and poultry by using

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Trial package (covers 250 sq. ft.) and booklet "The Disinfectant That Prints" for 25 cents and dealer's name.

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KNOB HILL STOCK FARM Registered Big Type Poland Chinas : : :



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(Large type, combined with high quality.)

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ALL STOCK REGISTERED. ALL BREEDING GUARANTEED.
A. M. HENRY, Prop. Farmington, Cal.

Our herd is nominated in the California Poland China Futurity to be held in connection with the State Fair this fall. We have just imported and added to the herd some of the best blood of the East, including boars from W. J. Hather, Ord, Neb., and Peter Mouw, Orange City, Iowa.

We are offering pigs of both sexes from prize-winning stock. Litters coming at all seasons and stock usually on hand to suit customers.

Hillcrest Stock Farm

Thornton S. Glide, Prop.

DAVIS, CAL.

Shropshire and Merino Sheep
and
Shorthorn Cattle

Shropshires sired by rams imported by me from England.

HILLCREST LAD,

Imported 1911.

SHENSTONE CAVENDISH,

Imported 1913.

Individuals and Carload Lots.
A Few Shorthorn Bulls for Sale.



HILLCREST LAD,
1st Prize State Fair, 1911.

N. H. LOCKE CO., LOCKEFORD, CAL.

Will be at the Live Stock Shows With

Jersey Cattle

and O. I. C. Swine

With our herd will be a number of young Jersey bulls, ready for service, and out of our large high-producing cows, that will be for sale.



Also, young boars of splendid growth and type.

If you need a herd sire, be sure to see this lot at your nearest fair. We are taking them there for your inspection before buying.

If more convenient, visit our ranch or write for prices and pedigrees.

Raising Poultry for Profit

WINTER EGG PRODUCTION.

[Written for Pacific Rural Press by Susan Swagsgood, Pomona.]

When a person starts out to tell others about feeding he finds himself deluged with questions that really have no bearing on the subject. Some of them can only be answered by the owner of the flock who knows the conditions.

A book can be written on the subject of "how much grain shall I feed to fifty hens." The only answer anyone can give to that question is to tell them to watch the needs of the fowl and feed accordingly. To get eggs at any time the hens must have a surplus of food over bodily needs. In winter we must allow a third more for cold weather as the hen needs more fuel. Then the feed must be of a more heating character; we must serve more fat producing feed to preserve the temperature, or the feed that should go to egg production will be called on for the needs of the system. If a six or seven pound hen is fed exactly the same quantity as three or four pound hen gets, provided the small hen is confined to close quarters, the small hen will have enough for her bodily needs and the large hen will have to draw on her system for enough energy to run the machine on, so of course there will be nothing left for egg production.

This is why I say all breeds should be fed and cared for separately and the feeder should watch and find out just how much his flock needs for the upkeep of their bodies; then he will be able to tell to a very close margin what is needed for eggs, always allowing for weather conditions.

Another important thing to remember in feeding for winter eggs is that some form of animal meat must be fed or no eggs will come. No matter how bright the combs look, how they talk as they go around; they are really wanting to lay, but the lack of animal food prevents them from attending to that important duty. Milk, beef scraps, blood meal, meat meal, and cracklings, besides fish meal, are all different forms of animal matter. Some are higher in protein than others and some are more digestible than others, and of course the hens will do best on those that are easiest to digest. Sprouted grain is a good egg bringer, winter or summer; so is green bone; almost any good commercial mash furnishes the proper amount of animal food, so that the man with a small flock can have a properly balanced ration without taking any risks. The commercial feed man mixes his feeds according to the season. If you see to it that you get freshly mixed feed and are not buying some that a dealer had in store a long time, your mash feed will be suited to the needs of your hens. During cold wet weather keep your hens in until the ground is warmed up a little; see that they are filled up at night, because it is a long time till morning.

Never feed your hens things they don't like, making it a case of "Hobson's choice." You can starve hens

into eating what you want them to eat; but they can freeze you out on the egg basket first. Hens are like humans, they need food that is appetizing as well as nourishing, in order to do the best possible.

Winter eggs are scarce; if they did not require extra care and feed to get, they would not be either scarce or high in price; and this is why we must give in order to take. The hens must have that which will build them up and keep them in health and vigor or there is no surplus for eggs.

SOLANO CO. POULTRY SHOW FAIR OPENED AUGUST 16.

Points on Utility Birds.—The poultry show held at Dixon in connection with the Solano County Fair was of unusual interest because of a special score card used in judging utility birds. There are several utility flocks in this county, and those in charge wanted to give all poultry breeders an even chance at the prizes whether they were in the fancy business or not. C. R. Fontana of Dixon solicited entries from the northern end of the county, while Harry Mortensen of Suisun gathered in the birds of the central and southern half. Professor J. E. Dougherty of the University of California Farm judged both the fancy and utility birds, using the following score card for utility stock:

Vitality, or vigor and temperament	25
Type, shape, body build, bone texture	30
Shape of head and neck, fineness of comb, etc.	15
Shape, strength and color of legs	10
Development of plumage, etc.	10
Condition (dirty, etc.)	10
	100

H. & F. Mortensen, the White Leghorn specialists of Suisun, won the sweepstake cup. Mrs. R. A. Holdridge of Dixon won the Fontana Cup for the best Rhode Island Red cock; the same bird also won sweepstake on cock. A. L. Harris of the Allendale Hatchery won first on Leghorn females.

FALL HATCHING.

[Written for Pacific Rural Press by Susan Swagsgood, Pomona.]

Last fall the question of fall hatching was pretty full discussed in these pages; there was considerable said for it and a little against it, from a profitable standpoint.

But the Press family is increasing all the time; and we are gaining a little new knowledge, all the time, or seeing things from a new angle, which is about the same thing, so it is but fair to discuss this subject again even if it was well threshed out once.

For those who intend to hatch, it is far better to keep the hens in good shape. The males should have been removed early in the summer so that both sexes were getting a rest, the hens should have been fed but lightly, that is, not fed for any extra laying, but just what an ordinary hen would lay. If these precautions were taken, both males and hens should now be in fairly good condition for the breeding yard.

They should now be mated up, allowing not more than ten hens to a male. We must remember that

this is not the natural breeding season for poultry, hence, there will not be the full vigor we expect from males in the spring. Every hen should be examined for defects that are at all prominent and all should be healthy, with quick, alert eyes, deep chested, with good width for the internal organs. Depth and width give capacity for food. Without that a hen does not count much as an egg layer.

POULTRY NOTES.

The Kings County Poultry Ass'n met August 26 to make final arrangements for the County Fair Poultry show.

Eggs held in storage Aug. 1 by 167 firms who reported to the U. S. Department of Agriculture amounted to 4,797,185 cases containing 30 dozen each. Last year on the same date, 153 firms reported their holdings of eggs at 5,028,812 cases as compared with 4,051,073 this year.

A poultry show will be held in connection with the "Stanislaus Live Stock Show and Exposition" at Modesto Sept. 18-23. The entry fee is 25c for singles and \$1.00 for pens. The premiums are: Pens—\$4.00 1st; \$2.00 second; \$1.00 3rd. Singles—\$1.50 1st; \$1.00 2nd; \$0.50 3rd. All entries must be made by Sept. 9 and as much earlier as possible. If you have not time to get an entry blank make your entry on a plain sheet, to Floyd Wisecarver, Modesto, Fair Secretary. Poultry department in charge of James D. Yates, Modesto.

The International Baby Chick Ass'n was organized at Cleveland, Ohio, August 7-12 to foster and protect the baby chick industry and allied branches of poultry husbandry. This association proposes to work for better eggs for hatching, better hatched chicks, improved methods of shipping, as well as the proper instruction of buyers in the handling and feeding of chicks. The initiation fee including the first year dues is \$10.00, with subsequent annual dues of \$5.00. H. D. White, Saugatuck, Michigan, is secretary.

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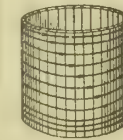
Our free book "Chickens from shell to Market" gives full particulars Coulson Co. Petaluma Cal.

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Lee's Poultry Book, Secrets of Success with Poultry, Common Sense Chicken Talks, Care Baby Chicks, Summer and Fall Feeding, How to Read Poultry Diseases, Pointers to Amateurs—Free for the asking, Dept. R. P.

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When to Hatch Fall Chicks.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

The months of September and October are the best two months for fall hatching. Eggs are not quite so high in September as they will be later, and the hens will naturally be stronger. The cockerels from these hatches will be ready for sale in January, and will command a good price. Broiler prices are perhaps higher during late January and February than at any time of the year. The pullets will commence laying in spring almost as early as those hatched in July. The reason for this is that spring is the natural time for chickens to lay.

Failing to be ready to hatch during these months, I would prefer waiting until the hens are through the molt and hatch in December and January. The early hatched chicks get the benefit of the fall days that are full of sunshine; in fact they get a fine start before winter begins and can be raised mostly outdoors; while the later hatched ones must be raised indoors the greater part of the time. This does not make for hardiness in the chicks, nor for saving in the feed bills; but a great many chicks are hatched in November and December and the chicks raised indoors until March. These questions are best settled by the person who is going to handle the chicks, and must depend on how he is situated to care for them.

Little chicks, to thrive, must not be subjected to extremes of cold and heat; they require something like an even temperature. If kept active they can stand quite cool days, but must not be chilled nights nor yet kept too warm.

The hatching of fall chicks is quite as easy as spring hatching; but not quite so easy is it to raise them.

If a person is prepared to give a little extra care, and this care means mostly to watch, so that when it is necessary the chicks can be run into the warm brooder if a chilly wind comes up, or let out to enjoy the sunshine and returned when there is no sun—this is what counts in the successful raising of fall chicks at a moderate cost. There must be green feed and all other things that the spring hatched chick needs.

Last winter at the Grange Stock and Poultry Farms, we had two hatches of Leghorn chicks in December. The hatches were very good for winter months, averaging about 75 per cent; and out of those two lots the death rate was not quite 1 per cent for a month. The chicks were kept in a house warmed with hot air, and brooded in individual brooders of the Victor Incubator Co. The chicks were not allowed out at all as the weather was too inclement until late January or February. The houses were well aired and roomy. There was no crowding and I gave the chicks all the care they needed.

Crowded Chicks Died.—Later, when we commenced to crowd and had more to attend to, the death rate went up, as it always does in large numbers, though we kept each hatch under a separate hover. At one time we had nearly 2000 chicks in a house that was really intended to accommodate 1000. This is the rock nearly all poultrymen split on, trying to raise two chicks where there is but room for one.

There is but one piece of advice worth giving on this question and that is if you are thinking of doing this, simply "don't." Crowded chickens are like plants—they often grow when one would not expect them to; but after they have grown they have no vigor or hardiness to fulfil the duty expected of them.

Market Director Weinstock is making a strong appeal to poultrymen for a State organization to control their products. The Stanislaus County Board of Trade has endorsed the proposition and Mr. Weinstock will address a meeting of poultrymen in Modesto Aug. 26, 2 p. m.

Poultry Breeders' Directory.

BABY CHICKS NOW READY.—Hatches every week. Write for special "Fall Chick" circular. See why Fall chicks pay. R. I. Red, Barred Rocks, Black Minorcas, White and Brown Leghorns. Campbell Poultry Ranch, Campbell, Cal.

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BUFF ORPINGTON CHICKS.—September and October delivery. First hatch Sept. 13th. Orders taken from 25 to 150; \$15 per 100. Eggs \$1.50 per 15; \$8 per 100. The Ferris Ranch, Rt. 2, 144 D. Pomona, Cal.

MACFARLANE STRAIN WHITE LEGHORN Cockerels.—April hatched. Hoganized. \$1.00 each, \$9.00 per dozen. Chicks to order, 10c each. Newton Poultry Farm, Dept. 1, Los Gatos, Cal.

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THE SANTA CLARA VALLEY HATCHERY solicits your orders for Fall and Spring delivery in 8 breeds of baby chicks. Order early and get the best. Jos. A. Bihn, Lincoln Ave., San Jose, Cal.

FOR SALE.—R. I. Red Pullets, 5 mos. old. Good stock. White Indian Runner ducks, full feathered; fine laying strain. Prices reasonable. Mrs. B. D. Kellogg, Richfield, Cal.

EASTMAN'S REED TO LAY Barred Plymouth Rocks, Chicks, Eggs, Cockerels. Fairmead Poultry Farm, Fairmead, Cal.

DAY-OLD CHICKS.—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS.—Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, Cal.

WHITE WYANDOTTES.—Blue-ribbon winners. Eggs \$2 to \$5. Chicks, pullets, cockerels. E. W. Strawetaki, Route 2, San Jose, Cal.

PUREBRED HOMER PIGEONS for sale, \$1 per pair. Leslie Lowe, Fallon, Nevada.

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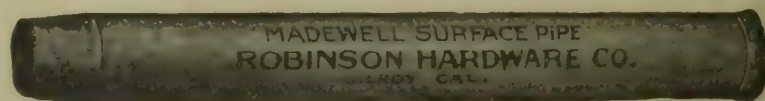
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FLORAL DEPARTMENT.

[By Geo. N. Tyler.]

I have just returned from a month's outing in Glenn county, which will account for the non-appearance of this department. During that time a number of queries have come in which will be answered by mail. Regarding seeds—I do not carry them, but they may be procured in bulk or packet at any of the larger seed houses.

Chrysanthemums are now setting buds. You can take most any bud from now on to form your flowers. Your plants, if growing to single stem, will, as soon as they set buds, send out shoots from every leaf. Keep these picked off. It is a good plan to let your plants go on the dry side when you take the buds, and do not water till the bud begins to swell, then give manure water twice a week. Have it weak at first, but make it stronger at every watering, also give nitrate of soda, 1 lb. to fifty gallons of water, once in ten days. Keep the foliage sprayed to keep down thrips and aphids, but do not spray or fertilize after the bud shows color, just water carefully till the flower matures. If you wet the buds or flowers, they will rot and all your work will be for nothing. If you fertilize too long it will bleach your flowers and make some of them come malformed. I do not advise the use of nitrate on any of the pink varieties.

Pelargoniums that are in pots and have been gradually dried off for the last six weeks are now in the right condition to cut back. In cutting back, if they are old plants, cut within one or two joints of last year's pruning. If they are this year's plants, cut back to from four to six inches of the pot. Do not be afraid of pruning too close. Every piece you cut off will root. Tip cuttings are good, but two eye cuttings are better. Pot the cuttings made in two and a half or three inch pots, using a sandy soil. Pot them firm and give a thorough watering after potting. Put them in the shade and water sparingly, until growth starts, then pot on as they need it. They must be protected in winter. You can also root them in clear sand same as any cutting and pot up as soon as rooted. The old plants that were cut back should be stood out in the bright sun and allowed to go dry, but the tops should be sprayed twice a day, to make them break, or make new growth. After the breaks have made a growth of about one inch, knock them out of the pots, shake off all soil, trim back the roots and pot them in vessels two sizes smaller than they have been growing in. After they have filled it with roots, repot in larger size as they require.

ARTISTIC BOUQUETS.

A short time ago, a great effort was made to have bouquets of all one variety of flowers and preferably of one color, but now, the harmonious combination of colors is much seen in the florists' windows. One of the most effective was a combination of the zinnias in shades of red, with hydrangeas in shades of blue. This year all the old-fashioned flowers have had a revival of popularity, and anyone with an old-time

garden is much to be envied by her city sisters. Shasta daisies and coreopsis make a beautiful combination and so does the coreopsis and bachelor-buttons.

RECIPE FOR EGGPLANT.

Remove the skin and cut the plant into slices, one-fourth an inch thick. Sprinkle the slices with salt and pile them, one above another, and put a weight on top. Let stand an hour to draw off the juice. Drain, dip in egg, then in bread crumbs and saute, first on one side and then on the other to a golden brown. The word saute means to fry in shallow fat. Frying, properly used, means cooking in deep fat.

RAISIN FRITTERS.

Mix together one-half cupful of water or milk, the well-beaten yolks of two eggs, one teaspoonful of sugar, one saltspoonful of salt and flour to make a good batter; add one tablespoon of olive oil or butter and beat with an egg beater until smooth. A small teaspoonful of baking powder may be sifted with the flour. Just before using, stir in the stiffly beaten whites of the eggs. Have some seeded raisins soaked until soft, stir them into the batter and drop by spoonfuls into smoking hot cooking oil and fry a light brown. Drain well and roll in sugar.

PACKING BUTTER TO KEEP.

Editor Home Circle: I would like to know if you can tell me some sure way of packing down butter so it will be good to use on the table this winter. I enjoy The Home Circle, and we have taken the Rural Press about ten years. — Mrs. C. D. H., Santa Cruz.

Butter that is to be put down for winter use should have two ounces of salt added to it for each pound, and the buttermilk must be worked out very carefully. After this has been done, pack solidly into stone jars or crocks, leaving room enough at the top to permit of at least two inches of cold, strong brine to be poured on. Cover carefully with a strong cloth and fasten securely.

CORN SALAD.

[Contributed by Mrs. C. D. H., Santa Cruz.]

Eighteen ears corn (boiled and cut off); 1 large cabbage; 5 green peppers, 5 large onions, 5 cucumbers, 1 doz. green tomatoes, 2 bunches of celery, 2 cups brown sugar, ½ cup salt, 1 quart vinegar, mustard and celery seed to taste. Grind green things. Put the salt through them and let stand over night. Boil in the morning, add corn, sugar, seed and vinegar and boil until done. Then can in glass jars and seal.

THE HOME CIRCLE

THE BIRTHDAY CAKE.

Select from alphabet noodles the letters of children's names, dates, etc., and place in a dish in which a quarter of a tablet of gelatine-coloring has been dissolved in a table-spoonful of cold water. When letters are colored, remove to a clean cloth to absorb extra moisture; then arrange on top of frosted cake. Children are delighted to have their names on their birthday cake.

INDIVIDUAL APPLE CUSTARD.

A dainty little dessert is the individual apple custard. To make this, heat one pint milk, separate two eggs. Into the yolks beat three tablespoons sugar, one tablespoon cornstarch and a pinch of salt. When at the boiling point, remove the milk from the stove and pour it slowly into the egg mixture. Return to the fire and cook to the consistency of boiled custard. Into this custard stir one and one-half cupfuls of raw grated apple and one teaspoonful of lemon extract. Pour into molds and pile on top of each the whites of eggs beaten stiff, combined with sugar and put in oven to brown. Serve either hot or cold.

ANOTHER PEAR SALAD.

Editor Home Circle: In a recent issue of the Press, there was a recipe for pear salad. As I have one that I think is much better, I am taking the liberty of sending it in, hoping that it can be used. Take pears that are firm and peel and core—either drop into water that has lemon juice in it, or take a cut lemon and rub over the surface to keep it white. Place your lettuce leaf on the salad plate and on it put a teaspoonful of mayonnaise to which has been added a small amount of ground salted almonds. Over this put one-half your pear, core side down, so the rounding surface is up. Take salted almonds and put in rows half an inch apart the length of the pear. A clove stuck in at either end makes the finish of what is called a Porcupine salad, and which is both good to eat and to look at. Canned pears, well drained, can be used when fresh ones are out of season. — Mrs. F. G. B., Manteca.

NEEDLE NOTES.

Scarfs of Scrim.—The busy housewife will find that dresser scarfs of scrim do not catch nor show the dust like linen or heavy material. Hemstitched with a border of crocheted lace, they are quickly made, durable and easily laundered.

When Sewing Needles Rust.—If your sewing needles rust and cause annoyance, try using either linen or chamomile leaves in the needle book, instead of flannel.

SOFT MOLASSES COOKIES.

One-fourth cup sugar, ½ cup shortening, one cup sour milk, one cup molasses, 1½ teaspoons soda, 1 teaspoon salt, 1 teaspoon each of ginger, and allspice, 2½ cups flour. Cream butter and sugar and add the sour milk. Mix the salt, ginger, allspice, and 2 cups of flour together. Mix the soda and molasses and pour it into the milk and sugar mixture. Add the flour, beat thoroughly, then add the rest of the flour until the dough is stiff enough to roll. Bake for about twelve minutes.

MRS. BEST'S LETTER.

My dear Friends:

Here in California the outdoors life appeals to all of us so much that picnicking is something every family does. A large part of the success of a picnic depends on a suitable and satisfying luncheon and to prepare it is quite a task that should not fall on one member of the family alone.

Sandwiches of one kind or another usually form the basis of the meal and any child over twelve should be able to follow directions and make them.

Cold meat sandwiches are always enjoyed, but you will find them much more appetizing if you add either chopped pickle or sliced cucumber pickles.

Lettuce, carefully washed and dried and covered with mayonnaise dressing makes a very refreshing sandwich and there are innumerable combinations of olives and nuts, cheese and pimiento, tuna fish and celery, peanut butter and jelly.

To be real dainty your bread must be cut thin and the crusts removed, but you must consider the appetites of your family and if they are hearty eaters, do not, I beg of you, try to fill them up on sandwiches that are suitable for an afternoon tea. If the butter is slightly warmed and then stirred into a cream, it will spread much more easily and not tear the bread.

If you are going to have an open fire at your picnic spot, make cheese sandwiches of a good Eastern cheese and substantial slices of bread and toast them. They are certainly delicious.

If you are taking hard-boiled eggs, they seem much more attractive if they are deviled and then fastened together again with toothpicks and each one wrapped separately in oiled paper. Oiled paper is certainly a friend in need when putting up lunches and the continuous roll permits of cutting just the length desired.

A salad is a nice addition to a lunch and the number of dishes carried is immaterial when the picnic party is not walking. A very dainty way to serve individual salad is to hollow out a long finger roll and fill with the salad mixture. If you are skillful, you can manage to eat that from your hand.

Doughnuts, drop cakes or cookies are much easier to serve and eat than a frosted layer cake and taste equally as good.

You can have fancy paper tablecloth sets consisting of tablecloth, napkins and fancy paper plates; but the economical way to do is to use plain white paper napkins and plates and buy them by the hundred. In that way, you always have a supply on hand.

Many people use the small blue-bordered cloth Japanese napkins and keep them in a box of some sort that is used to hold picnic equipment. If you have enamel cups for your coffee and grape juice, that eliminates the danger of breakage, but if you are serving hot drinks, do have something with a handle.

The vacuum bottles on the market make it possible to have a hot drink with no effort, but making coffee over an open fire has its fascination as well as its drawbacks.

Rosabella Best.

IT COULD BE WORSE.

Once there lived an optimist,
Whose heart was always gay;
"It could be worse, it could be worse,"

Off he was heard to say.

Once the devil picked him up,
And for want of horse and hack,
Started off to hades with him,
Carrying him on his back.

Those who saw him riding off,
And noticed where he sat,
Exclaimed, "What under heaven
Could be worse than that?"

The rider smiled serenely,
Then said, "'Tis plain to see;
I am riding the devil—
He could be riding me."

—J. W. McCord.

JAMIE'S SHOPPING.

Jamie took up the clean blue blouse that his mother had laid out for him to put on before going on an errand for her.

"Mother, are all my blouses blue?" he asked.

"Why, yes, dear, I believe they are," his mother said. "All except the white ones that you have for best."

Jamie slipped his arms into the blouse sleeves and went over to the mirror to fasten the front buttons.

"Why do you want to know, dear?" his mother asked.

"I was thinking," said Jamie, "of the pink stripes in Harold's new blouse—a big pink stripe with a tiny one close beside it. Oh, they're just beautiful! And they go round the other way down at the ends of the sleeves."

Jamie's mother looked at Jamie for a moment with a smile. "When you go down to the store for my thread," she said, "how would you like to choose the material for a new blouse?"

"Choose just what I'd like?" cried Jamie, turning swiftly from the mirror. "Oh, do you suppose they would have something with pink stripes?"

"I think so," said his mother. "Yes, you may choose just what you like, and I will make it up for you."

Half an hour later Jamie stood in front of a counter in the dry-goods store, and looked at the rows of goods on the shelves: he saw a piece of cloth that might have been the very one from which Harold's new blouse had been cut. There were the pink stripes, big and little; Jamie could see how they would look going round at the ends of his sleeves.

"What will you have this morning, Jamie?" a girl behind the coun-

ter, whom Jamie knew as Miss Proctor, came over to ask.

"I want a blouse—I mean some cloth for a blouse," said Jamie, backing away a little from the hand that Miss Proctor tried to put under his chin.

"Oh, doing your own shopping, are you?" said Miss Proctor, laughing. "Well, I happen to know what little boys like for blouses, particularly little boys with blue eyes. There, isn't that pretty?"

Miss Proctor had reached up while she talked, and lifted down a piece of goods that she spread out for Jamie to see. The cloth was blue, as blue as the bluest of Jamie's blouses.

"Don't you think that's pretty?"

"Yes, it is," Jamie agreed politely.

"But perhaps your mother told you to get some special piece," Miss Proctor said as she lifted her scissors.

"Oh, no!" Jamie said hastily. "She said I might get anything I liked."

"That's lovely!" Miss Proctor exclaimed. "Well, I'm sure you'll like this. See, it exactly matches your eyes!" And she leaned over to hold a fold of the goods under Jamie's chin.

She was standing directly between Jamie and the pink-striped goods. Jamie did not know what to do.

This blouse that I have on is blue," he murmured.

"Yes, I see," said Miss Proctor, smiling. "How many yards does it take to make you a blouse, do you know?"

"Mother said two yards and a half," said Jamie. "I have several blue blouses at home," he added, as he saw Miss Proctor lift her scissors again.

"Have you?" said Miss Proctor, absently.

Snip! Jamie did not know that scissors could go through cloth as fast as Miss Proctor's scissors went through the blue piece. They were only a bright streak. And then there was Miss Proctor sticking them into her pocket again, and folding up the two and a half yards of goods, while she said in a business-like way, "Anything else?"

Jamie swallowed hard. "N-o-o," he said. "Oh, yes, there was! I want two spools of white thread, number sixty. And mother said to please send the slip inside the package."

Jamie stood still while Miss Proctor went to get the thread. He could see again the pink-striped goods on the shelf. He blinked and tried to turn his eyes another way, but they came back. He jumped when Miss Proctor spoke close to him, "What are you looking at, Jamie?"

"Why, only that piece of pink-striped cloth," Jamie confessed.

Miss Proctor stood tapping her lips with the points of her scissors. "Did you say," she asked, with a queer little smile, "that you have another blue blouse at home?"

And then all at once it seemed not to matter that the piece of blue cloth had been cut,—at least Miss Proctor said that it did not matter,—and there was another quick flash of the scissors, and Miss Proctor rolled up the thread inside two and a half yards of the pink-striped cloth, while she laughingly agreed that the big

and little stripes would be beautiful going round the ends of the sleeves.

Jamie hugged his little bundle close and stood still by the counter for a moment with Miss Proctor's hand under his chin. He did not try to turn away as he had done be-

fore.

"I think," he confided, "that I must have had hundreds of blue blouses! Maybe not that many," he corrected himself, "but all of them except the white ones have been blue—till now."—Stella Dysart, in the Youth's Companion.



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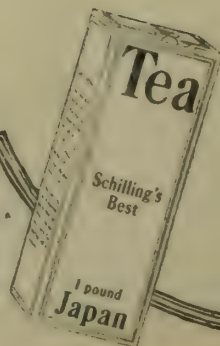
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SOUTHERN PACIFIC

GOOD HEALTH.

[By H. E. Pastor, M. D.]

Death from a Wasp Sting.

We read in a recent number of the Medical Times of a man dying from a wasp sting. It is reported that he was stung while sleeping on board a ship, and that he died the day following. This is a very unusual case, and interesting because unusual. The examining physician ventured the opinion that death was due to bacterial infection. A further opinion may be ventured that if the victim's system had been in a healthy condition—in other words, if there had been no blood dyscrasia—the infection would have been less severe, and death perhaps escaped. A pin-prick has been known to cause death where the blood-current has been permitted to become badly befouled. Keep this life-current pure—not with the bottled article from the dusty, musty shelves of a drug-store, but by breathing fresh air at all times, drinking plenty of unpolluted water, and eating wholesome food in moderate amounts—and not forgetting the bathtub.

A Few Words on Infantile Paralysis.

Infantile paralysis (or poliomyelitis, as it is technically known) has been the principal theme of popular medical discussion during and since its appearance in epidemic form in New York a few months ago. This dread disease has not yet gained a foothold in our own State, unless we credit vague rumors of a few isolated cases in San Francisco and at interior points nearby, and probably will not if proper preventive measures are taken by the public health authorities, reinforced by the heads of families, whose children may be imperiled by neglect. The cause of this malady is not definitely known, though a certain species of biting stable-fly is thought to carry the virus, which invades the nose and throat of children especially (though adults are not altogether exempt). The infection later reaches the anterior part of the spinal cord, which atrophies or waste away, and through the nerves branching from the affected parts of the cord the trouble at last reaches the co-ordinating muscles. These muscles become paralyzed through lack of innervation, the contiguous bones lose their vitality, and a general arrest of the growth of the limb results. Club-foot is one of its commonest sequels. In favorable cases complete or partial restoration of the affected parts takes place in a few weeks or months. In the present epidemic at the East the death-rate has been very high—about 20 per cent. As the cause of the disease is not known with certainty, so there is no known cure. Preventive measures are the best safeguard when the disease threatens. Sustain by all means the bodily vigor of the child by proper nourishment and hygienic attention. Forbid association with other children from affected districts, especially in indoor places, as schools, churches, house parties, etc. Destroy all rubbish and garbage, and banish the fly. If your child shows symptoms of the disease (sore throat, headache, fever, pain in the back and limbs, dizziness), call in a physician at once.



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FIGURES GIVEN
ARE INDEPENDENT
AND RELIABLE

Pacific Rural Press Market Report

PRICES QUOTED
AS PAID TO
PRODUCERS

San Francisco, Sept. 6, 1916.

Wheat.

The settlement of the railway trouble and continued foreign buying, with light offerings, have caused a further advance in the East, and there is nothing in war conditions to indicate a drop in the near future. Coast markets have responded, most grades here having found new high levels.

[f. o. b. San Francisco.]

Sonora wheat	.....\$2.10	@2.15
Northern club	.....2.10	@2.15
Calif. club, ctl.	.....2.05	@2.10
Northern Bluestem	.....2.35	@2.40
Northern Red	.....2.20	@2.40

Barley.

Future trading slow, with sellers taking an easier attitude. Spot grain, however, is quite firm at last week's prices, with good demand both for feed and shipping.

[f. o. b. San Francisco.]

Shipping, ctl.	.....\$1.75	@1.80
Choice seed, ctl.	.....1.67 1/2	@1.70

Oats.

Both feed and seed have been in good demand of late, and values still tend upward, with advances on both red and white oats.

[f. o. b. San Francisco.]

Red feed	.....\$1.80	@1.85
Red seed	.....2.00	@2.10
White	.....1.75	@1.80
Black seed	.....3.00	@3.25
Texas Red seed	.....2.25	@2.35

Corn.

Eastern remains quiet, with little offered, and milo is nominal, being cleaned up at the moment. Egyptian is moving well at a slight advance.

[f. o. b. San Francisco.]

Eastern Yellow, ctl.	.....\$2.05	@2.10
Milo Maize	.....Nominal	
Egyptian	.....1.95	@2.05

Beans.

Several varieties show quite a sharp reaction from last week's advance; but quotations are little more than nominal, as nothing but rather scarce recleaned stock is offered here. Most buying interests seem to have covered their requirements for the remainder of the season, and business is dull; and with the new crop coming on in a couple of months there is nothing to indicate any renewed advance before that time.

[On wharf, San Francisco.]

Bayos, per ctl	.....\$5.00	@5.20
Blackeyes	.....3.50	@3.60
Cranberry beans	.....5.00	@5.20
Horse beans	.....3.25	@3.50
Small Whites (south)	.....Nominal	
Large Whites	.....5.00	@5.20
Pinks	.....5.50	@5.75
Limas (south)	.....5.30	@5.40
Red Kidney	.....7.00	
Mexican Reds	.....5.25	@5.40
Tepary beans	.....4.50	@4.75

Seeds.

There is a little movement of cover crop seeds, but most buyers are waiting for larger offerings, which will no doubt bring easier prices in some lines. The outlook for alfalfa and vetches, however, is very firm.

[Wholesale prices, S. F.]

Alfalfa, per lb.	.....23 1/2 c
Oregon Vetch	.....6 c
Melilotus Indica	.....8 c
Melilotus Alba	.....12 1/2 c
Bur clover, recleaned	.....10 1/2 c
Canada Field Peas	.....5 1/2 c

Hay.

Arrivals in this market continue on about the same scale as before, and are mostly by boat, owing to shortage of cars. Dealers report a great deal of hay awaiting shipment along the railroads, as is usually the case at this time of year. The movement will probably increase before long.

[Wholesale prices per ton, carload lots, San Francisco.]

Wheat, No. 1	.....\$13.00	@14.50
No. 2	.....10.00	@12.00
Tame oats	.....11.50	@15.50
Wild oats	.....10.50	@13.00
Barley	.....10.50	@13.00
Alfalfa	.....10.00	@14.50
Stock hay	.....8.50	@9.50
Straw, per bale	......35	@.50

Quotations furnished by Nicholl-Loomis Co., Los Angeles, under date of August 29th.

Barley hay	.....\$10.00	@14.00
Wheat hay	.....10.00	@14.00
Tame oat hay	.....12.00	@16.00
Northern Alfalfa	.....11.00	@13.00
Local Alfalfa	.....12.00	@15.00
Stock hay	.....6.00	@9.00
Straw	.....5.00	

Feedstuffs.

Bran is slightly lower, with more liberal offerings. Rice middlings have been added to the list, though they are not yet a very important item in this market. General demand active.

[Wholesale prices, per ton, carload lots, San Francisco.]

Beet pulp, per ton	.....Nominal	
Alfalfa meal, per ton	.....\$18.00	@19.00
Bran, per ton	.....27.00	@28.00
Oil Cake	.....Nominal	
Cocoanut cake or meal	.....23.00	@25.00
Cracked corn	.....44.00	@45.00
Middlings	.....35.00	@38.00
Rollod barley	.....34.00	@35.00
Tankage	.....45.00	
Rollod oats	.....34.00	@35.00
Rice middlings	.....30.00	@32.00

Vegetables.

Market continues rather heavily loaded with many kinds of garden truck, and the few changes are downward, the demand being insufficient to clean up the offerings from day to day. Alameda celery is offered a little more freely at easier prices. The market is fairly flooded with tomatoes, and 50c is top price for even strictly fancy stock. The surplus is being taken by canners, who keep the price from going below 25c. Cucumbers are a drug on the market, and summer squash is lower. Bell peppers and eggplant move fairly well at the former low level. Green corn, beans, and peas fairly steady.

Celery, Alameda, bunch	.....10	@15c
Cucumbers, lug	.....15	@30c
String Beans	.....2	@4c
Summer Squash, lugs	.....25	@30c
Peppers, bell, box	.....25	@30c

Eggplant, lugs	.....30	@40c
Peas, lb.	.....4	@5c
Tomatoes, lugs	.....25	@50c
Green Corn, sack	.....50	@1.50
Okra, box	.....40	@60c

Potatoes and Onions.

With the shipping outlet reopened, potatoes have stiffened up again, and choice Delta stock is held as high as \$1.90. Salinas goods firm at the old level, with a good local movement. Sweet potatoes are slightly lower, with fairly liberal supplies. Onions have taken an upward turn again, as there has been a rather strong buying movement among the dealers, and offerings are rapidly diminishing.

[On wharf, San Francisco.]

Potatoes, ctl., Delta	.....\$1.50	@1.90
Salinas	.....2.25	@2.35
No. 2	......60	@.75
Sweet Potatoes, per lb.	.....2 1/4 c	
Onions, yellow	.....1.35	@1.40
Garlic, new crop, per lb.	.....4	@5c

Poultry.

Market rather easy early in the week, as there was very little demand, and stock held from last week furnished ample supplies. Arrivals, not excessive, the surplus from the nearby egg ranches being pretty well disposed of; and with prospects of a better demand the feeling on the street is fairly good. Broilers marked up a trifle.

[Wholesale prices, S. F.]

Turkeys, live, lb	.....22	@25c
Broilers, 18 lbs. to doz. and less, lb.	.....23	@27c
do, over 18 lbs. to doz	.....22c	
Fryers	.....22c	
Hens, extra, per lb, colored	.....18	@19c
Small leghorn	.....15	@17c
Smooth Young Roosters, per lb. (3 lbs. and over)	.....23	@24c
Squabs, per doz	.....2.00	@3.50
Geese, per pair	.....2.25	@3.00
Ducks	.....13c	
Old	.....12	@13c
Belgian hares	.....10c	

Butter.

With England and outside domes-

tic markets bidding for supplies from this district, prices have taken a little jump, and are now considerably higher than last year. The recent advance was expected to check the movement to England, but 40 cars were shipped during the past 60 days and 5 cars now ready to go. Los Angeles is actively in the market, and some northern points are also sending in orders.

Extra	.....30	31	30	—	20	28 1/2
Prime 1sts	.....29	29	29	—	28 1/2	28 1/2
Firsts	.....28	28 1/2	28 1/2	—	28	28

Eggs.

Prices have advanced sharply in the last week, as receipts from nearby points are steadily decreasing, and there has been considerable demand for shipment to northern and Island points. Of course a good deal of Eastern stock is offered, but it has little effect on extras.

Extras	.....35 1/2	37 1/2	37	—	37 1/2	37 1/2
Sel. Pul.	.....32	33 1/2	32 1/2	—	32 1/2	32 1/2

Cheese.

Flats have picked up a little, but other varieties continue to come in freely, and there is not enough demand to give any firmness to the market.

[S. F. Dairy Exchange prices.]

Y. A's, fancy	.....17	c
Fancy Calif. Flats, per lb	.....14 1/2	@c
Monterey Cheese	.....14 1/2	@15c

[Los Angeles Dairy prices.]

Butter	.....31	31	30	30	30	31
Eggs	.....32	32	32	32	32	35

Deciduous Fruits.

As expected, the end of last week brought a heavy overstock here, with supplies in some lines two or three times as large as for the previous week, so that even an exceptional demand failed to effect a cleanup. However, the surplus apples went into storage, and the canners cleaned up the peaches, while pears and grapes took a slump.

The situation has now cleared in good shape, with the surplus moving East, where the demand is very strong; values here are about normal. Gravenstein apples are about gone, but later varieties are accumulating, though there is a very good current movement. Pears are slightly easier than last week, and quinces are offered more freely. Good lots of peaches are considerably firmer. Black figs are off again, while nectarines are higher, with a wide range. The top figures on berries have been generally reduced. Cantaloupes are easier, casabas and watermelons being steady. All lines of grapes are lower, with continued heavy offerings, though there has been a heavy movement.

[Wholesale prices, San Francisco.]

Huckleberries, lb.	.....7	@9c
Currants, chest	.....3.00	@4.00
Blackberries, chest	.....2.50	@3.00
Raspberries, chest	.....4.00	@6.00
Strawberries, chest	.....2.50	@3.25
Apples, Alexander	......60	@.75
Bellflower, box	......75	@1.00
Jonathans	......65	@.75
Astrachan	......50	@.90
Pears, Bartlett, bx, No. 1	.....1.50	@1.80
No. 2	......50	@1.00
Peaches, lugs	......80	@1.00
Canners	......70	@.85
Quinces, lugs	......50	@.65c
Figs, Cal. black, box, double layer	.....40	@50c
White, single layer	.....40	@50c
Plums, crate	......75	@1.00
lugs	......75	@1.00
Prunes, crate	......60	@.85
Nectarines, crate	......90	@1.25
Cantaloupes, std. crate	......70	@.75
Casabas, crate	......75	@1.00
Watermelons, doz	.....1.00	@2.00
Grapes, Malaga, small box	......45	@.65c
Muscat, small box	......50	@.65c
Grapes, Thompson, crate	......30	@40c
Tokay, crate	......50	@.65c
Isabella	......50	@.65c

Dried Fruits.

[Net to growers, bulk basis, f. o. b. shipping point.]

With the danger of a railroad tie-up out of the way, and with growers apparently holding as firm-

Special Deciduous Market Report.

By J. L. Nagle.

Sacramento, Cal. Sept. 5, 1916.

The embargo recently placed by the transcontinental lines on perishables, including fruits and vegetables for interstate shipment, was in my judgment a benefit to the fruit industry, in that it lasted only three days, which enabled the markets to clean up the heavy offerings rolling and on track and gave the grapes an opportunity to color and sugar. I have every reason to believe that from now on the market on Tokays and Malagas will return very satisfactory prices.

The demand for pears and peaches is not as active as it was a week ago, due to the heavy shipment of Bartlett and other varieties from the Northwest and Elberta peaches from Colorado. However, California has

not experienced any loss on account of this competition as the balance of the peach crop has been disposed of to the canneries at satisfactory prices.

The following prices have ruled for the week:

New York.—Malaga grapes averaged \$1.20; Thompson Seedless, \$1.15; Tokay, \$1.65; Bartlett pears, \$2.90; Orange Cling peaches, \$1.35; Lovells, 84c; Kelsey plums, \$2.09; Grand Dukes, \$1.90; Gross, \$2.00.

Chicago.—Bartlett pears, \$2.49; Malaga grapes, \$1.17; Tokays, \$1.36; Phillips Clings, \$1.07; Kelsey plums, \$1.78.

Total shipments to Sept. 2, 10, 116 cars; total shipments, same date 1915, 7939 cars.

Special Livestock Market Report.

San Francisco, Sept. 6.

Cattle.—Last week more cattle than usual were accumulated on account of the strike menace. The first shipment of Nevada cattle for the season is coming this week. They are good and desirable weights. All the rest are from California ranches.

Hogs are still freely offered including a lot of poorly finished stock which packers would prefer not to buy. One car today included 38 feeder hogs which the shipper had been warned against sending. Sacrifice prices were paid for them. Packers favor well finished hogs at the top prices rather than poor quality and small size which keep prices down and do not make satisfactory pork.

Sheep.—Most mutton stock is spring lambs, though one shipment of 1200 California wethers is being

received from San Joaquin county.

Wool.—No change in local prices. London sales opened with defective wools lower, crossbreds higher and merinos even with last sale.

North Portland, Ore., Sept. 4.

Cattle.—With 950 cattle here today, it was a very brisk trade. Very heavy demand from feeders. Ordinary and fair grades sold on a little higher basis while prime steers at 6.75 for several lots. Cows and heifers meet good demand at steady prices.

Hogs.—Hog trading slow. A moderate run of 2400 head received. Bulk of sales 9.55 to 9.65. Demand was limited.

Sheep.—A very good demand continuous for choice lambs and sheep. A load of choice lambs sold Saturday at 7.45. Yearlings selling at 6.50; with bulk of ewes at 5 to 5.50.

ly as ever, the local packers are beginning to take more interest in offerings, and considerable buying has been done in the last few days. This is about what has been expected, and it is believed that the next few weeks will bring a fairly large Eastern movement, as the trade there is becoming pretty well assured that prices will not be lower, all the cheap offerings having been bought up some time ago. As for peaches, the growers' association has announced its prices as follows, per lb.: Standard yellow, 5 1/4 c; choice yellow, 5 1/2 c; fancy yellow, 6 1/4 c; extra yellow, 7 1/4 c; standard Muir, 5 1/4 c; choice Muir, 5 1/2 c; fancy Muir, 6 1/4 c; extra fancy Muir, 7 1/4 c; choice peeled, 8 c; fancy peeled, 9 c; 1/2 c extra for 50-pound boxes; 5/8 c extra for 25-pound boxes unfaced; 7-8 c extra for 25-pound boxes faced. The quotations are subject to a 5 per cent discount for packing and selling. The Association controls most of the output, and packers are taking very little interest, having reduced their offers to a lower level. Apricots and prunes have been marked up again, and growers around San Jose report sales at even higher prices than those quoted in San Francisco. The same condition was noted last year. Raisins continue very strong.

Apples, new crop 4 1/2 @ 5 1/2 c
Apricots, per lb. 1916. 11 1/2 @ 12 1/2 c
Figs, white, 1916 5 @ 5 1/2 c
Figs, blk, 1916 4 @ 4 1/2 c
Calimyrna, 1916 9 @ 10 c
Prunes, 4-size basis, '16 5 1/4 @ 5 1/2 c
Peaches, old 5 @ 5 1/2 c
1916 5 1/2 @ 5 3/4 c
Pears 6 1/2 @ 7 c
[Associated Raisin Co. prices]
Fancy Seeded, 16 oz. 7 1/2 c
London Layers, 3-crown,
20-lb. box, 1916 \$1.35
Imperial Clusters, 6-crown,
20-lb. box, 1916 2.50
1 crown loose muscatels, 50-lb. box, per lb. 7 1/2 c
Sultanas, 50-lb. cases, per lb. .8 c

Citrus Fruits.
The embargo on shipping citrus fruits East, placed by the railways last week, in anticipation of the strike, lasted but three days and did no damage to the industry. Shipments are now going forward as usual and the fruit is commanding good prices. Valencia oranges averaging nearly \$5 per box and lemons around \$7. Total shipments for the season up to Sept. 1st were 29,212 cars of oranges and 6,366 cars of lemons. From all indications the balance of the fruit to be shipped will command good prices, making 1916 the banner price year. Fancy grapefruit is slightly higher in the San Francisco market, with lemons lower. The local movement of oranges and lemons is seasonably rather light.

Oranges, Valencia, fancy, box \$3.75 @ 4.00
choice 3.35 @ 3.50
Grapefruit, fancy 3.25 @ 3.75
choice 2.50 @ 2.75
Lemons, fancy 6.50 @ 7.00
choice 5.75 @ 6.25
standard 4.00 @ 4.50
Lemonettes 3.00 @ 3.50

Honey.
Values are pretty firmly maintained, with little offered for shipment to this market, and no large accumulations reported. [Wholesale prices, San Francisco.]
Water white, comb 13 @ 15 c
Amber 10 @ 12 c
Water white, extracted 8 @ 9 c
Light amber, new 6 @ 7 c
Dark 3 1/2 @ 4 c

Nuts.
Packers are still offering the prices last quoted for almonds. The Growers' Exchange will put out new prices by Sept. 15, and announces that the crop promises the best quality ever produced in the State, while quantity of Nonpareils and Drakes will be very short, with a normal crop in less important varieties. New walnut prices are expected in a few weeks, and there is a strong demand in the East, owing to the close cleanup of old stock and reports of short crops in Europe. Growers are said to be taking a very firm view as to values.

Almonds, 1916:
Nonpareils, lb. 17 1/2 c
I. X. L. 15 c
Drakes 13 c

Horses.
The city market remains rather sluggish, and recent offerings have failed to sell off as rapidly as expected, though most of the business continues to be done within about the range quoted, as there is too much competition among buyers in other quarters to warrant offerings on any lower basis. Another large stable sale was held this week, and there are also fairly large offerings of stock fresh from the country.

[Approximate values in San Francisco, based on auction sales.]
Drafters, 1700 lbs and up \$ 250
Drafters, 1550 to 1650 .. 150 @ 200
Chunks, 1350 to 1500 lbs 150 @ 175
Wagon horses, 1050 to 1350 lbs 110 @ 150
Green Mountain range horses, 950 to 1200 lbs 20 @ 75

Hops.
Nothing doing in the market pending completion of harvest. Prices lower, and dealers say the outlook for values is poor.
Sacramento 7 @ 8 1/2 c
Mendocino 8 @ 10 c
Oregon 8 @ 10 c

Groceries.
The item of flour remains as last quoted. Primary market on some lines of coffee is slightly higher. Imported rice is higher, California unchanged. Hams have advanced slightly. Sugar has taken a drop of 75c per 100 lbs.

Livestock.
[Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.]
Steers, No. 1 6 1/4 @ 7 1/4 c
No. 2 6 1/2 @ 6 3/4 c
Cows and Heifers 5 1/4 @ 6 c
No. 2 5 1/2 @ 5 3/4 c
Bulls and Stags 4 @ 4 1/2 c
Calves, light 8 @ 8 1/2 c
Medium 7 @ 7 1/2 c
Heavy 6 @ 6 1/2 c
Hogs, grain-fed:
100 to 150 lbs 8 c
150 to 250 lbs 9 c
250 to 325 lb 8 1/2 c
Prime Wethers 7 @ 7 1/4 c
Spring Lambs, f. o. b. country points \$5.00 @ 5.50

Hides.
Market fairly strong, with all offerings cleaning up readily at range quoted last week.

Wool.
[Prices paid in country.]
Red Bluff, year's 25 @ 27 c
Sacramento Valley, year's 19 @ 25 c
Mendocino, year's 31 @ 32 c
Mendocino, 7 months' 26 @ 27 c
Southern, year's 18 @ 21 c
Southern, 7 months' 13 @ 16 c
Imperial Valley, year's 17 @ 19 c
Imperial Valley, 7 mos 14 @ 15 c
Nevada 21 @ 23 c
Fall wool 10 @ 12 c

Publishers' Department.
S. C. Sorensen of Tres Pinos writes us saying: "Your paper has many valuable articles, as my scrap book will show."

W. S. Guilford was elected president of the Western American Berkshire Congress, Monday night. The meeting was continued Wednesday night at the Travelers Hotel.

I have found that the Pacific Rural Press is the best advertising medium on the Pacific Coast. It reaches the class who have money and inclination to buy.—W. M. Carruthers, Mayfield.

Fire and water damaged the office of the Pacific Rural Spirit, at Portland, last week, to such an extent that the paper had to be printed in outside offices. We trust our friend Browne may soon have the wreck of his office into shape, that the getting out of his good stock paper will be a pleasure to him and a joy to its readers.

Albert M. Hart, of Clements, writes us that: "I am very well pleased over the fact that a large per cent of my inquiries come from

your paper, and intend if possible to carry a larger ad. this year and using a cut of my turkeys."

Ernest L. Owen, Secretary of the Ranchers' Market of San Diego, writes: "We are getting busy with the marketing problem down here and expect to have something of real accomplishment to report from time to time. Personally I find much that is helpful along this line in the Pacific Rural Press, and wish that every one of our members and every member of the County Farm Bureau could be induced to take it and enjoy that help."

Thirty-two pages in this issue are made necessary to care for the articles furnished by our writers and the advertising offered by our patrons. Next week's issue will also be 32 pages and the extra columns of the paper will be devoted to printing the State Fair awards and some very valuable dairy matter. One of the articles will be from the pen of Prof. Wickson, covering the history of dairying in California. It will be worth your careful reading.

The Wisconsin Condensed Milk Co., Burlington, Wis., just received a deep well Turbine Centrifugal Pump from Los Angeles. Los Angeles as a pump manufacturing center is becoming quite well known throughout the East, due to the Oil Balance Thrust Bearing which is capable of carrying almost any weight. Since the perfection of these devices the Turbine Centrifugal Pump has become available for lifts never before contemplated. This is strictly a Layne & Bowler Corporation product.

Classified Advertisements
Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2 1/2 c per word.

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LIVING EXPENSES REDUCED THROUGH CO-OPERATIVE BUYING—Write for catalogue and particulars. Pacific Co-operative League, D236 Commercial St., S. F.
BUY ROASTED COFFEE WHOLESALE—Best, 10 pounds, \$3.00 delivered. Order with remittance. WM. J. SCHROTH CO., 112-B Market St., San Francisco.
REBUILT GAS ENGINES from 3 to 50 h. p. Thoroughly overhauled and guaranteed. We handle only high grade engines. Write us your requirements. Motors, Gas Engines bought, sold and exchanged. Mechanical Installation Company, 181-89 Second St., San Francisco.

SECOND HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHEETER PIPE WORKS, 306-8 Howard St., San Francisco.
PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency, Savings and Loan Building, Stockton, California. Established fifty years.
TO REDUCE THE HIGH COST OF LIVING, send for our Wholesaler to Consumer Catalog. SMITH'S CASH STORE, 106 Cay St., San Francisco.
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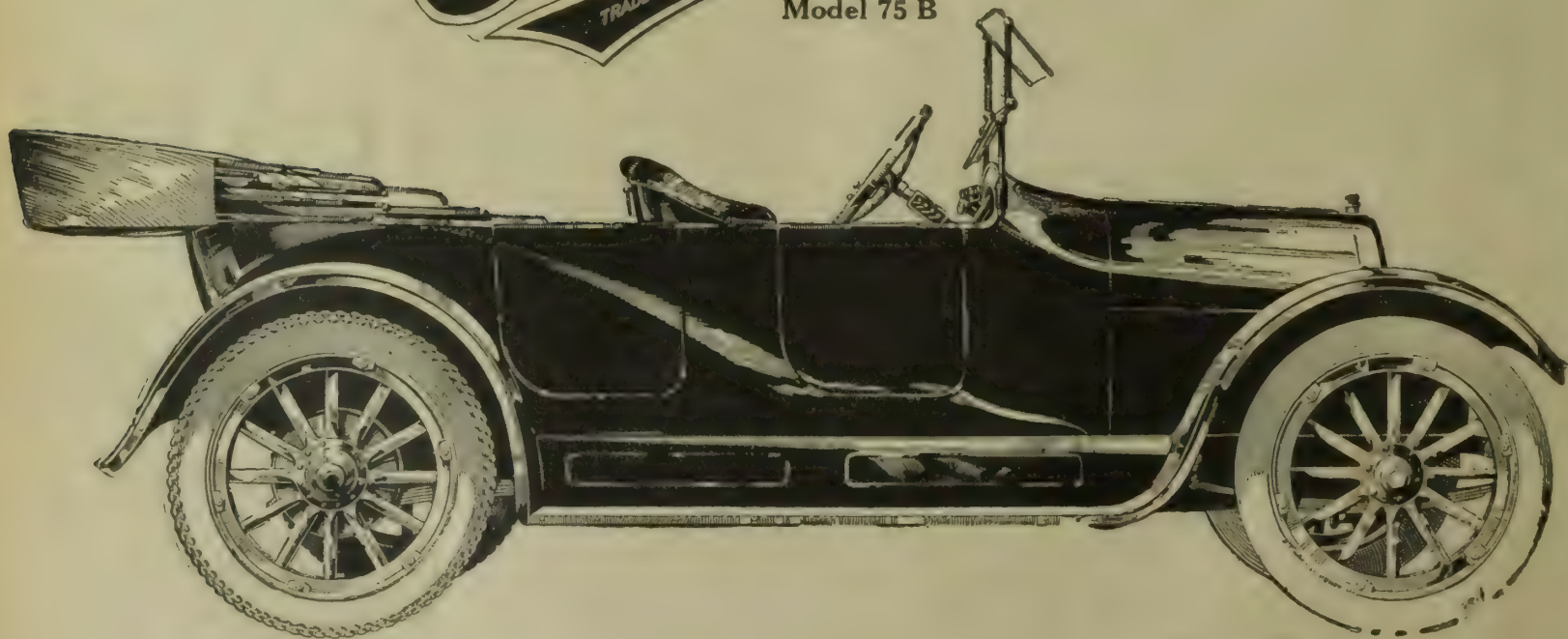
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THE PACIFIC RURAL PRESS

SAN FRANCISCO

SEPTEMBER 16, 1916.

LOS ANGELES

The Dairy: An American Gift to Calif.

Thirteenth of a Series of Sketches in Which the Editor Presents Suggestions, Drawn From Long Experience, of What Californians Have Done and May Do for the Advancement of California Agriculture.

DAIRYING was the most strikingly novel thing which Americans introduced to the agriculture of California, which was about three-quarters of a century old when the pioneers intruded upon it in 1849. The Spanish and near-Spanish people who laid the foundation of California agriculture had plenty of cattle, but their activities with the ox (*Bos bovis*), both industrial and social, rested chiefly upon the male of the species and the female was little more than incidental thereto: cows were kept to get more bulls and steers. Quite in contrast were the policy and practice of the north European nations, whence Americans were largely derived: with them the cow was the essential industrial factor and the bull was incidental—bulls were kept to get more cows.

This difference in the point of view explains the fact, which is recorded by many travelers, that before the American occupation, though cattle were abundant and labor was to be had for the commanding, there was practically no dairying. Milk was rare, but the poorest settler had plenty of beef in his pot. The mission padres had an abundance of olive oil to take the place of butter and they drank wine instead of milk and other drinks to which milk is accessory. But it is not true to say that they had absolutely no dairying, for one early visitor testifies that the pre-Americans did have milk, but it was drawn from goats, which he counted poor, for it was difficult to get a pint of milk from six of them. Hardly less significant of the absence of a dairy industry was the testimony of the cattle of the hide-and-tallow breed of the Mexicans, of which it was said: "To get any milk at all the cow had to be lassoed, tied to a stake and allowed the company of her calf before a drop could be had."

Americans Brought Good Cows.

—Although the hunters and trappers who settled in California before the gold discovery probably had cows somewhat broken to milk, the first good cows to reach California in any number were those led or driven across the plains by the gold-seekers of '49. And there were a good many of them. They were fed or grazed along the trail and contributed to the family menu on the way. They were probably the best cows the pioneers had or could find in the places whence they came because no one would choose a poor cow to travel with, though he might be content to keep her too long at home. Such cows were the foundation stock of pioneer dairy efforts in the foothills and mountain valleys of the Sierra Nevada, and pioneers' tales are full of their performances. When a family arrived across the plains it was quite usual for the men to go to gold-digging and the women to milking, and the women often got more gold dust from the cows than the man did from the gravel. Nor were the men long in taking a hint of more gold from the grass tops than from

the roots. In the U. S. Patent office report for 1851, Philip Lynch of Ophir, Placer county, reports on December 3 of that year:

About October 1, 1851, I bought two American cows, fresh with young cows, for \$400. These cows have averaged 12 quarts each per day which I have sold at 50c per quart, totally \$720 for the two months. These cows I have fed on hay at \$80 per ton, meal at \$8 per cwt and potatoes at \$4 per cwt, at a cost of not over \$100 for the two months. I would not sell my two cows for \$1000.

How the Eastern rim of the State was populated by the offspring of these good cows which had walked across the plains is amply shown by early records. Let a single instance suffice. In 1857, Honey Lake Valley, a few miles from American Valley, in which the pioneer town of Quincy is located, produced over 5000 pounds of butter, which sold at 75c per pound; and to show "the exceeding richness of the pasture and the high

character of the dairy stock" it is recorded that Mrs. Taylor, "who personally superintends the whole work, milks only fifteen cows and makes 250 pounds of butter per week, which sells readily at 75c. per pound." Mrs. Taylor must have been a busy woman and yet the record says: "In her parlor we found an exhibition of taste and refinement which would do honor to any family in any place." Thus the dairy industry of California started on a true American economic and social plane, to which it did not always subsequently cling.

The Mexican Foundation.—

Although some of these American cows and their offspring undoubtedly continued their journeys westward until they reached the coast region, and some of the Mexican cows were taken to the mountain regions, it is probably true that the dairies along the coast were chiefly equipped with Mexican cattle. These coast dairies also began work early in the '50s, their opportunities being the San Francisco demand which was also drawing butter by ship from all parts of the world and paying high prices. It was a very rough kind of dairying at first and was carried on, as an old pioneer used to say, "by a lot of men who went into partnership with the calves" as the quick fluctuations in prices made it nip and tuck whether a man would do better by having butter or meat to sell, and so there was an effort to have both ready. But this condition did not last long. The meat demand was met by driving in cattle from the Western states and Texas and this made meat so cheap that four year-olds could be bought for \$10

a head and the dairymen found this stock, though very poor for dairying, better than the Mexicans. For a time dairying with such cattle was profitable. In 1857 there were 130 dairies, of 25 to 200 cows each, shipping from Petaluma. But there came a sharp turn. In 1858 butter was worth a dollar a pound in San Francisco and cheese, made of skim milk and butter milk, sold at 25c per pound, "right from the hoop." Two years later these prices were quartered; the rough pioneer dairying could no longer pay and efforts for better practices and equipment began.

It should be noted however, that even when local dairying was very rough, there were shining exemplars of better things. At some time previous to 1856 J. W. Osborne built in the Napa Valley a dairy house of stone, with plastered ceiling, ventilators and cemented floor. He had

(Continued on page 312.)



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EDITORIALS

THE WEEK.

ONE of the speakers at the Admission Day celebration at the University of California urged on the university students the study of California, on the ground that the man who does not learn something of his State's history is neglecting his character-building. He declared that California has been a maker of history, that ten years in the West sees more accomplishment than fifty years in the older States, and that every day there are events of high importance.

The speaker, doubtless, had chiefly in mind achievements in statesmanship, and the humanities, generally conceded to be things in which all citizens should be interested; but his appeal should also include all affairs of industrial development and progress. In these also California has been doing new things in new ways for the last 65 years, and the steps by which present attainments have been evolved from pioneer conditions, conceptions, and undertakings should be clearly understood by coming generations. It is upon the foundations laid during the last half of the nineteenth century that the achievements of the twentieth, which we now discern, are firmly established. Just as our rapid advance in legislation for the good of mankind rests upon the foundation of recognition of individual rights and fair play, which the pioneers so strenuously, and often picturesquely, prepared, so our present industries reflect the spirit, the invention and the self-help of the first generation of Americo-Californians. For this reason it is to be expected that California will not only go faster but farther than most other States, and thus translate her wealth of natural endowment of resources and situation, not only into the character of her citizenship, but into the uniqueness and extent of the industries by which her citizenship makes its contact with the world.

WHAT CALIFORNIA IS DOING.

IT IS due to this foundation spirit of enterprise and achievement, both in development of confidence, self-reliance, and thirst for fair play, that California has now its distinctive character in citizenship and in results which this masterful citizenship can work out. And it is a most important fact that the California spirit which the pioneers engendered is not restricted to lineal descent for its transmission. It is an effulgence which may enter and illumine any man or woman who may approach the sphere of its influence, and it will fill any fit being with points of view and achieving power. This is the reason why men and women do so much for their own exaltation in California, and the reason also why they do so many unique things in industry. It is not, therefore, surprising to find them dredging seaweeds for potash and trapping for thousand-dollar silver fox pelts on top of Californian Mt. Whitney—the highest American mountain this side of Alaska. The Californian has sense to know how to raise potash from the bottom of the sea and to pull pelts from the skies. He will go higher and lower than other men in pursuit of industries, because he knows and fears not. And this is the reason why each year's

achievement breaks a record: fruit shipments of this year greater than ever before; livestock displays at the State Fair last week ten times as great as a few years ago; exports from San Francisco last month double those of August last year; Californians departing this life during 1915 at an average age of 51.8 years while in 1911 people stepped out at 48.8 years—making a longevity gain of three years; one-sixth of all the steel ships now building in the United States are in the yards of San Francisco bay—but we could swamp the press with instances. It is all due to what a visiting New Yorker the other day called "no magic but the magic of enterprise; the magic of enthusiasm; the magic that is the spirit of San Francisco." Though, of course, we should say "the spirit of California," for San Francisco is not the source, but only one manifestation of it. And the speaker cited above was right: it is the duty of a Californian to study and to know his State.

THE FEDERAL FARM LOAN BOARD.

THREE members of the national board charged by the new law of congress to develop mortgage credit under government auspices, were in California from Saturday morning to Monday night and attended several conferences concerning the local aspects of the work in which they are engaged. The members thus conferring with Californians were G. W. Norris of Pennsylvania, chairman of the board; W. S. A. Smith of Iowa, and Herbert Quick of West Virginia, members thereof. These three constitute a majority of the board. Mr. Norris is the financial expert; Messrs. Smith and Quick have the agricultural point of view particularly. They all take the work they have in hand seriously: they honestly believe in its feasibility and great public service, and their contact with our banking and commercial citizens, who chiefly participated in their conferences in this State, will be, indirectly at least, helpful in the freer and fairer financing of farming operations. The effort to impress upon the board the desirability of establishing one of the twelve district land banks at some point in California naturally brought to the Sacramento hearing many citizens of general prominence, but there were plenty of farmers present also and some of them traveled long distances to get into touch with this new operation for the capitalization of farmers on more favorable terms than hitherto.

LOCATION OF THE DISTRICT BANK.

AS TO the particular location of the district bank, if we are fortunate enough to get one in California, we are not greatly interested. The places urged upon the board are Sacramento, Stockton, Fresno, Los Angeles and San Francisco. Any of these would answer from the point of view of farmers' direct transactions with the district bank, for there would not be many. The fundamentals of the business are located wherever there is a bunch of farmers self-collected into a loan association or operating through a state bank which meets requirements. The idea is that this initiative should remain with the farmers who are near enough together to know and trust each other. These local associations deal with the district bank, not by their membership individually, but through the officers they choose from among themselves and nothing can go to a district bank unless it is thoroughly understood and endorsed by the local association. When this is done the papers can go to the district bank by mail and the bank will protect itself by securing such examination and appraisal as it sees fit to make to comply with the requirements of the law. Of course the general approval of the security offered and the reasonableness of the purposes of the loan, which must be carefully specified, must rest with the local association, for the members of it are endorsing it and assume a certain share of the responsibility for the transactions they approve. For these reasons the location of the bank is to be determined not by a notion of the individual convenience of the borrowers but for the advantage of the operations of the district bank itself. It should be close to the fountains of law, finance and farming science from which it must draw many facts which will influence its procedure. Its officers

should understand the special needs and conditions of its district and this fact is recognized by the establishment of twelve such banks instead of one for the whole country. It seems to us that California is so distinctive in its natural conditions, in its diversity of productions dependent thereupon, and in its advanced position in development, that the State can fairly claim a district bank somewhere within its boundaries. We are also of the opinion that the northern states of the coast should also be districted by themselves.

WHEN WILL THE BUSINESS BEGIN?

NATURALLY those who are thinking of improving their farming, either by buying new equipment, or by refunding at lower interest and easy payments obligations already incurred and which give them little comfort or chance of paying out, are much interested as to how soon this newly-cleared financial sky will throw down some of the sunshine which they greatly need. There have been some hasty promises made, some of them, perhaps, for political purposes, to the effect that there might be such illumination by New Year's or soon after. Possibly there may be, if the board should decide upon locating some of the banks, without waiting to fill the category and providing some districts should get a lot of loan associations in working shape. Inasmuch, however, as a district land bank must have a capital stock of three-quarters of a million which it is expected will be chiefly subscribed by loan associations and as the United States Treasury cannot subscribe for stock to make up this minimum of three-quarters of a million until other subscribers have been given a month to cover it, it is clear that some time must be consumed in the work of organization—after the loan board completes the specific regulations for operation which the law entrusts to it and which it cannot well do while traveling around looking for sites for district banks. At the California meetings the loan board members individually did not anticipate such speedy start with loans as has been sometimes mentioned. This seems to us reasonable. If a financial operation involving so much organization all the way from neighborhood groups of farmers to a mortgage, bond-issuing, district bank, could possibly be put in shape in a few months, it would be likely to be in poor shape and that is probably impossible under the law. The local loan associations of those desiring to borrow are the foundation, and though there may be doubt as to how soon these may be gathered into effective operation by the district bank there can be no doubt as to the time and place to begin—and that is immediate organization of the loan associations wherever interest exists. We know that some communities of our readers are already at work on that fundamental operation. Every one who is interested should secure documents from the Rural Credit office, U. S. Treasury, Washington, D. C., and these will be found to explain in detail how one should go to work to gather other intending borrowers into the group which the law prescribes and which the government is instructed to honor and to assist.

IMMEDIATE EFFECT ON RURAL CREDIT.

AN IMMEDIATE effect of the journeys of the loan board and the popular welcomes extended to them in all parts of the country, is still more desirable publicity for the general idea that borrowing farmers have not been fairly treated hitherto and they should be exempted from extortionate interest rates and oppressive terms for securing and repaying loans. This idea has been crowding itself upon public attention for several years, as our readers all know. Whether this change in the public attitude toward rural credit has accomplished much in mellowing country lenders we do not exactly know, but we do know that it has accomplished something and will accomplish much more. We have often stated that European testimony is abundant that rural credit plans though at first opposed by old-line bankers, were subsequently approved by them and they freely loaned idle money to the rural credit banks which they formerly impeached and denounced as impossible. It is likely to be the same way in this country; in fact there was a great change in the bank

ers' attitude toward rural credit before the law was passed and this new attitude helped to pass the law even though some bankers shook their heads over some of the provisions of the law. Our observation is that men who have money are much like those who have not, except that they seem rather more comfortable. These men, then, having, in some cases, hearts and consciences, are being reached and converted in their attitude and are really coming to the true doctrine that there will be more money for them in the long run by cuddling farmers than by skinning them. It is always a question as to how fully conversion changes a man and we are not shocked that a banker's conversion should consist in a conviction that he can do the old business better in some other way—and in that he is dead right. In one of his loan board talks Herbert Quick said something like this:

Contrary to expectations, bankers also have shown a friendly attitude to the rural credit act. Apparently they have taken the position that the money lost to them by the placing of farm mortgages in other hands will be more than made up in greater business resulting from placing farmers on a credit plane with merchants and other business men.

This is a point which all those engaged in lending money on any fair line, or doing any other fair line of banking business, should always remember. Rural credit is likely to hurt nothing but sharking. If we are not mistaken the indirect effect of the new loan law on interest rates and terms of loans will help agriculture as much as will result from the direct operation of it.

POSSIBLE INFLUENCES OF THE LAW.

AT SOME of the California conferences with the loan board the belief was expressed that a borrower, of the right force and capacity, might find that the government long-time loan on his holding might improve his credit standing for such short term accommodation as he might need at times in his business. The government will lend only 50 per cent of value on land by strict appraisalment and 20 per cent of insured improvements. The effect of such a loan is to insure title and, by reason of low interest and small payments, to hold a man on the land. His capacity and ability as a farmer are also, indirectly, guaranteed. How much better credit standing all these guarantees naturally give a man! He is of good character, competent, responsible and he cannot be thrown off the land by foreclosure. Therefore for subsidiary mortgaging or for personal credit, the money lender can afford to deal favorably with him and that works well both for borrower and lender. This is a general point which does not need amplification.

A specific possibility in the application of government rural credit to colonization of idle lands under State provision and aid, was shown by Professor Ellwood Mead of the University in his statements at the board hearings. His plan is, as many of our readers already know, to enable the State to take land from private owners at a justified valuation; to make subdivisions; prepare the land for cropping by irrigation or otherwise and sell land and water at near cost to those who meet conditions of character and preparedness for farm success. It is not to catch colonists as they run and let them take their chances of success, but to select those who have the knowledge and force to succeed and to place them under conditions which make success possible. For this purpose the government loan would be available to its limits on land and improvements; and the State, or a private capitalist who wished to operate in the same way with the same requirements and precautions, could safely supplement the government loan to selected settlers who had all the qualifications except enough money for a start. The university agriculturists are of course interested in this possibility because of its bearing upon the chance of getting qualified University graduates on land. It is a very interesting phase of the question. At the present time there are graduates doing all sorts of things to get money for a start on land and they are doing a good thing. It is not planned to lessen personal responsibility in young men but to help those who have already sufficiently demonstrated possession of it.

By
the Editor

QUERIES AND REPLIES

Inquirers Must
Give Full Name
and Address.

Imperial and Standard Prunes.

To the Editor: What is the commercial value of the Standard and Imperial prunes? Have these varieties been proven and would you advise planting either or both of them in any quantities? Do you advise the planting of the prune on the wild plum root on well drained ground? Is it not true that the trees planted on this root make smaller sized trees?—S. H., Chico.

The selling value of these prunes is high because of size; commercial value, which includes not only selling price but good bearing and low cost of handling, is not known to us. We advise only one class of growers to plant these varieties in quantity and that class is composed of those who have already had experience enough to demonstrate that, under their conditions of growth and handling, they are profitable. We think most planters, who have not convinced themselves, ought to put in some trees of both kinds and watch them carefully. We certainly do not advise planting either of them in quantity until some things of their character and behavior are cleared up. It is at least forty years since the wild plum of California (*Prunus subcordata*) was abandoned by experimenters because of its dwarfing effect on free-growing plums. We know nothing which would revoke that decision. If any one has demonstrated otherwise we would be glad to know about it.

For Winter Cabbage.

To the Editor: Will cabbages planted now head in January or February? What variety is planted in the island country?—Reader.

It is perfectly practicable to get cabbage headed by February and March, providing you are in a place where the soil and air are not too full of cold water in December and January. Cabbage is hardy against quite sharp frosts (that is sharp, from a California point of view), but continued cold and water-full soil does not favor growth even though the plants may not be killed. On light soils which rid themselves of surplus water readily or in places where rainfall is not enough to fill the soil, winter cabbage comes all right to cut in February and onward, from plants started now in the seed bed and planted out in October—if the soil is deeply wet by rainfall or irrigation. This is the case on sandy hillsides near the coast in the central part of the State and on the mesas of the interior valleys. It is possible more widely in Southern California, where lower lands can be safely used. Even in places not quite right, planting on ridges will help toward early heading, but low lands subject to too much frost and cold water should be employed for late rather than early crops. The Wakefield and Winnigstadt are the best early varieties largely grown.

Pollination of Squashes.

To the Editor: I planted summer squash this spring in deep, rich, black, sandy loam, from which I had just cleared the primeval sage-brush. Though the aspect was sunny, the spring was cold and the plants made little growth for a considerable time, but when they did start to grow, they did so rapidly and luxuriantly. They flowered and bore fruit abundantly, but long before these latter were large enough to use, they turned yellow, shriveled and fell off. Not one reached maturity. Could you tell me the reason?—W. F. C., Battle Mountain, Nev.

It has been known for twenty or thirty years that squashes are likely to fail to come through in the plateau region because of the absence of honey bees, bumble bees, etc., which are needed to carry pollen from the staminate to the pistillate blossoms, both of which grow on the same vine at some distance from each other. This is probably your trouble and the remedy is to introduce bees or pollinate the blossoms by hand.

Oak Defoliators.

To the Editor: On our ranch in Sonoma county, as well as on the adjoining places that are covered with scrub oaks of quite a size, the trees have been eaten almost clean by a worm. I should call it a measuring worm and they are now hanging thickly from the trees on a web, seemingly playing or spinning their web, I cannot tell which. They already had done a great deal of damage on

the young fruit trees, but this ocean of pests must be fought somehow. Can you suggest some way?—A. W. E., San Francisco.

Is it not strange that when the worms were so abundant you did not think of sending us a few so we could see what insect you have to deal with? It is not quite clear to our understanding, for those caterpillars which make tents are not measuring worms and those which do "measure" as they walk do not make tents. But whichever they are, it is probably not practicable for you to attempt to kill caterpillars all over the wild lands in your region because of the cost. If you wish to save the foliage of the oaks you should spray them as soon as the first worms appear in the spring with arsenate of lead, 2 lbs. to 50 gallons of water. But this would also be impracticable on wild lands because of the cost. These pests succeeded yet. You will have to protect your fruit trees by spring spraying with lead arsenate and trust to nature to look after her own interests on the wild lands.

Scale on Japanese Fern.

To the Editor: I am enclosing a piece of my Japanese maiden hair fern, which is dying. I should like to know if the condition on specimen would be likely to account for its dying, also the cause and treatment.—M. F. D., Conejo.

Your fern is badly infested with "soft orange scale." Cut off all the top growth and clean the stubs carefully with a brush and soap suds. Repot in fresh sand and leaf mold mixture and keep moist but not wet. As new fronds start, water more freely but not too much.

The Bean Thrips.

To the Editor: I send leaves showing how some of my bean vines are affected. What would be the proper thing to do to eradicate the rust, or fungus growth, or whatever disease it may be? R. A. B., Middletown.

It is the work of the bean thrips: an insect very minute and apt to be very abundant. It should be fought, as soon as the whitening of the leaves is first seen, with an oil emulsion or miscible oil spray to which, when properly diluted, tobacco extract is added at the rate of one part of the extract to 2000 parts of the spray. The nozzle has to be poked around to reach all parts of the foliage.

A Joyful Cactus-Grower.

To the Editor: Will you give some recipes for making up the fruit of the spineless cactus? I have a plant of Burbank's spineless cactus that I bought in July, 1914, and it is a wonder. I put it in the ground July 22, 1914, and today it has 55 slabs and 155 fruits, nearly ripe. Is this just an average plant? Will it be right to use the slabs that are now fruiting, to set out, as soon as the fruit is gathered, or should I use this year's slabs? One of the slabs has fifteen fruits upon it.—E. J. F., Goshen.

Cactus fruit has not yet reached the recipe stage in our consciousness. We have been content with it fresh as a breakfast food. If other readers have gone farther into the region of puddings, pies, etc., we should like to have their experience. Your plant is no doubt a good one. It beats any we have but may not make the record—and yet we should expect that from the land of Goshen. You can root any of the pads but do not treat them too well. Let the cut surfaces dry and harden before planting and do not use much water until rooted.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., September 12, 1916.

STATIONS	Past Week	Rainfall Data		Temperature	
		Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka .....	.02	1.73	.49	74	46
Red Bluff	0	.68	.14	94	54
Sacramento	0	.07	.09	94	54
San Francisco	0	.33	.01	82	52
San Jose	0	.01	.10	90	46
Fresno	0	.08	00	96	56
Independence	0	.22	00	86	38
San Luis Obispo ..	0	00	.06	82	48
Los Angeles	0	00	00	76	54
San Diego	0	.03	00	70	58

Citrus Precooling Saves Money.

Precooling citrus fruit saves money and puts the fruit on Eastern markets in the best condition. Many new plants are being installed this year.

(Written for Pacific Rural Press.)

Precooling means cooling the fruit down to the neighborhood of 35 degrees, before loading it onto cars which are also precooled and pre-iced. About six tons of ice or its equivalent in refrigeration is required on the average to cool the fruit from 80 degrees. About 6½ tons are required for the initial icing. Then the railroads charge \$7.50 per such car in addition to freight, for something which is still to be defined by the courts. They tried to charge \$30 for this something, but through the Citrus Protective League and the Interstate Commerce Commission, they were prevented from doing so.

Not all has run smoothly in this practice of precooling fruit. Several systems have been tried, and usually with fair success, though often at greater expense. Sometimes the fruit has been frozen in cooling, or the inside ones of a box have been left warm by cooling the outside ones too rapidly. Pre-cooled cars must go direct to their destinations, for, though the ice bunkers are usually part full on arrival at New York, they would not keep the fruit cool much longer.

Advantages.—The advantages are numerous. Fruit is very likely to arrive in better condition than when refrigerated as usual. This is because warm fruit loaded onto the car and shipped promptly still must travel three or four days over hot deserts before it is cooled to a temperature which checks development of mold. This is most important in that large number of cases where fruit has been scratched or bruised in handling. The pre-cooling rooms are capital places to store fruit when shipment is unexpectedly delayed for lack of cars, bad markets, or weather.

Much ventilation of pre-cooled fruit is not desired, so the boxes are packed closer and higher, getting 64 to 68 more boxes per car, at the same reduced cost for precooling and pre-icing. Railroads welcome this additional couple of tons fruit in each car as it increases that car's earnings over \$40 per trip on freight and requires fewer cars to move the crop.

First Pre-cooler.—The first man in the State to have courage and capital to test out the possibilities of commercially pre-cooling oranges is J. S. Edwards of the Gold Buckle Association, East Highlands.

Temperatures En Route.—His courage was based on investigations made by the U. S. Department of Agriculture on oranges pre-cooled in Los Angeles. G. Harold Powell, who had charge of these investigations, is author of a bulletin from which the following figures are taken on two cars shipped in the same train, one pre-cooled and pre-iced at San Bernardino, the other shipped under regular refrigeration. The outside air was always warmer than the pre-cooled fruit until the 9th day in Ohio, when it fell below during the following night. It was 58 degrees outside at the start on Mar. 11. The fruit was 42 degrees. Temperatures were read several times

per day. Temperatures outside the car rose to 70 degrees on Mar. 11, then on the following days to 79, 76, 75, 90, 85, 87, 80, 68, and to 64 on the 20th. The fruit stayed below 45 degrees until Mar. 15 when it rose gradually to 55 degrees on the 18th and shaded slightly downward about 2 degrees on account of cold nights before arrival at Jersey City Mar. 20. About 700 pounds of ice remained in the bunkers. The other car started with fruit at 63 degrees, being iced and re-iced several times in transit. The fruit cooled gradually to 50 degrees on the 15th, rose a degree, then down to 50 degrees on the 18th and down 3 degrees by early morning of the 21st. The four days before it cooled to 50 degrees gave molds a fine chance to get a strong foothold on any fruit that may have been bruised and infected.

Mr. Powell reports that "pre-cooled fruit that is reasonably sound is not more likely to decay after arrival in market than equally sound ventilated fruit. Unsound fruit having decay retarded during shipment either by pre-cooling or icing, decays badly when exposed to the warm atmosphere."

The Gold Buckle pre-cooler and ice factory was established in 1909 in the packing house. It has been in continuous use ever since, to pre-cool practically all fruit shipped to the East after February. It has a capacity of 12 cars per day.

In its elements it consists of the following equipment as shown by F. E. George, in charge of the plant: A steam engine compresses anhydrous ammonia gas to 300 pounds pressure. This is run to a condenser outside the building. There it runs through pipes over which water is running to cool it off. Then it is run through expansion valves into pipe coils above the room in which fruit has been stacked with spaces between boxes ready to be cooled. The compressed gas already cooled, expanding into a much greater space, becomes much colder.


There are six of these pre-cooling rooms, each holding four carloads. The fruit is left in them about 48 hours if it was very warm when packed. It must cool slowly and uniformly to the center of each box. If weather is hot East, it must cool to 35 degrees; otherwise it is not so particular. Ice is made with the same ammonia, to ice the cars and to sell.

Pomona Exchange Has Two Pre-coolers.—The Pomona Fruit Growers' Exchange, H. E. Walcott manager, has two pre-cooling plants, one of them almost the oldest in the State. Refrigeration for one of them is furnished by a nearby ice plant; the other has its own compressors. Their combined storage capacity is 95 cars. They allow more time for cooling than the Gold Buckle people—3½ days if the fruit is 65 to 70 degrees, according to Mr. Walcott, and 3 days if 60 degrees, aiming to cool all fruit to 36 degrees, as their markets are practically all east of the Missouri. Fruit is not pre-cooled for Pacific States markets ex-

cept in particularly warm spells.

The cost of pre-cooling, labor, interest, depreciation and all overhead expense is a little over two cents per box. Ice bought for pre-icing the cars costs \$20 per car for about 6½ tons. Mr. Walcott says that a third of the ice remains on arrival at market.

Here the ammonia coils are in a box 12x52 feet through which a multivane circular fan drives 20,000 cubic feet of air per minute. The air is led to the pre-cooler rooms where it comes up through a false floor between the stacks of boxes. The air ducts are made 18x36 inches, three times larger in the new house



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ANALYSIS:—Curd Soap, 50%;
Bicarbonate of Soda, 0.5%;
Carbonate Soda, 37.5%;
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FOR ALL ORCHARD PESTS.

SOAP SPRAY—An effective soap spray used in the proportion of one pound of powder to six or eight gallons of water with 200-pound pressure. Not harmful to trees or fruit if properly used.

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MERMAID SPRAY POWDER will kill this form of pest when applied conscientiously with the above proportions at the right time. You will also note its effectiveness towards reducing red spider while spraying for scale.

COST—A cheaper and purer soap powder that is prepared with accuracy. Not the cheapest—but the powder that does the work.

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than in the old, on account of friction of the air reducing efficiency. The fan suction draws the same cool air back to blow it again over the ammonia pipes and among the fruit.

The pre-cooler rooms are well insulated. Concrete floors are covered with three coats of hot asphalt, then 2x4s edgewise and more asphalt, then tongue-and-grooved flooring, tar paper, flooring and the false floor, 28 inches through. The sides and ceiling are also thoroughly insulated. Shavings are used for this at the

new plant.

The Redlands Fruit Ass'n., N. L. Lelean, Mgr., has a new plant installed this spring with six cars a day capacity, and costing about \$20,000, according to J. S. Phelps, packing house foreman. Their refrigeration is also obtained from a nearby ice plant. Air is fanned over ammonia coils similarly to the Pomona system. Insulation here, according to Mr. Phelps, is severely compressed cork in sheets three inches thick in the outside walls.

Revision of Horticultural Laws.

[Written for Pacific Rural Press.]

The committee appointed by the Visalia Fruit Growers' Convention to take the initiative in a movement for codification and revision of the horticultural laws of California accomplished its preliminary work at a meeting of delegates from fruit growers' associations which convened in Sacramento on September 6. The following delegates and volunteer participants were present:

W. W. Hinsey, Fair Oaks Fruit Co., California Olive Association.
J. J. Brennan, California Fruit Exchange.
C. K. Turner, Co. Horticultural Commissioner, Placer Co.
E. W. Lewis, of W. O. Davies, Florin.
J. W. Jeffrey, State Viticultural Commission.
Geo. A. Lamiman, County Horticultural Commissioner, Shasta Co.
Dudley Moulton, Horticultural Com., San Francisco.
A. W. Tate, Watsonville Apple Distributors, Corralitos Fruit Association.
A. L. Wisker, Colfax Fruit Association of Placer and Nevada counties.
C. F. Collins, State Association of Horticultural Commissioners.
A. J. Sturtevant, California Peach Growers' Association.
Frederick Maskew, State Horticultural Quarantine Service.
O. E. Bremner, State Association Horticultural Commissioners.
Frank H. Buck, Vacaville Fruit Association.
S. A. Lines, Earl Fruit Company.
E. J. Wickson, Geo. P. Weldon and Geo. H. Hecke, Temporary Committee.
F. B. McKevitt, California Fruit Distributors.
C. C. Teague, California Fruit Growers' Exchange.
E. J. Vostler, Secretary of meeting.
Geo. C. Roeding, Fresno.

F. C. Brosius, Acting Secretary State Association of County Horticultural Commissioners.

F. B. McKevitt was appointed permanent chairman of the committee. The temporary committee announced that it had appointed as members of the standing or permanent committee all those who had been delegated to represent fruit associations at the meeting, as follows:

W. W. Hinsey, Fair Oaks; J. J. Brennan, Loomis; E. W. Lewis, Florin; J. W. Jeffrey, Sacramento; A. W. Tate, Watsonville; A. L. Wisker, Grass Valley; C. F. Collins, Visalia; A. J. Sturtevant, Fresno; Frederick Maskew, San Francisco; C. E. Bremner, Santa Rosa; S. A. Lines, Sacramento; F. B. McKevitt, Sacramento; C. C. Teague, Santa Paula; Geo. C. Roeding, Fresno; Geo. H. Hecke, Woodland; Geo. P. Weldon, Sacramento; E. J. Wickson, Berkeley.

The temporary committee announced that it would exercise its right of appointment later to enlarge the committee so as to include representatives of other growing and handling interests.

The standing committee has also entered energetically upon its work, with the purpose of preparing a report for submission to the Napa Fruit Growers' Convention in November next.

STANDARDIZING GRAPE PACKS.

[Written for Pacific Rural Press.]

The present fruit standardization law specifies that "grapes packed for table use shall be of uniform quality and maturity . . . and show a sugar content of not less than 17 per cent Ballings scale, except Emperor which shall show not less than 16 per cent." They must also be practically free from insects and fungus diseases. Fresno county Horticultural Commissioner thinks Malagas should contain 18 per cent sugar. Another much-needed requirement is pointed out by F. B. McKevitt, president of the California Fruit Distributors:

"It is not claimed that the present law is perfect. Other reforms besides those specified in the act are in order,—notably one that will specify the net weight of grapes to be packed in a standardized crate, so that we can get away from the pernicious practice of crowding thirty pounds of delicate fruit into a package designed to hold twenty-five, thus multiplying indefinitely the chance for loss from decay. This is only one—there are others—but we are on the right road. Its legitimate end will be prosperity to the fruit industry of California."

Would you plant your fruit trees in large tubs?

"Without the use of dynamite in tree-planting," says U. S. Bulletin No. 38, "the roots soon meet with the smooth and compacted sides of the hole, through which they have great difficulty in penetrating. The tree is in about the same situation as if it had been planted in a large tub."

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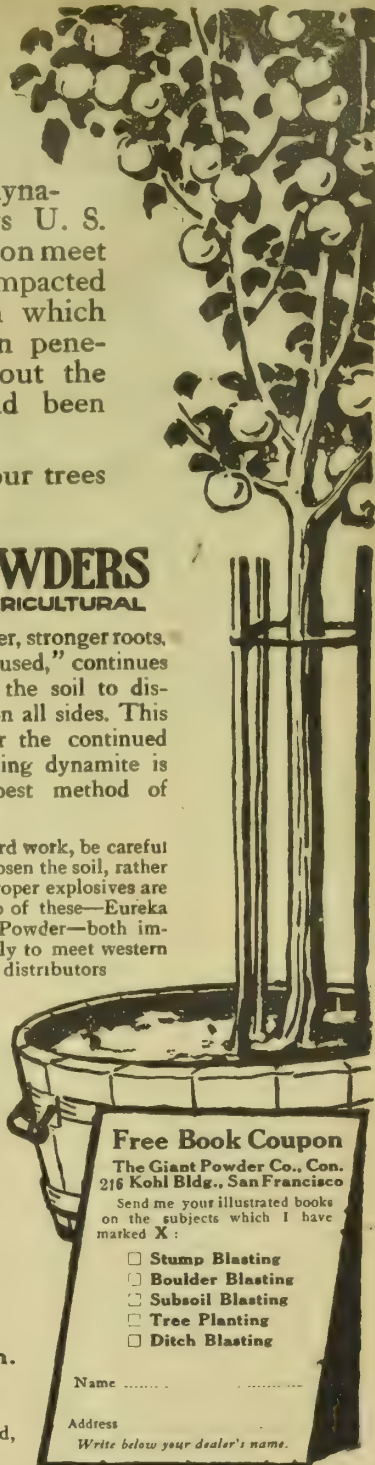
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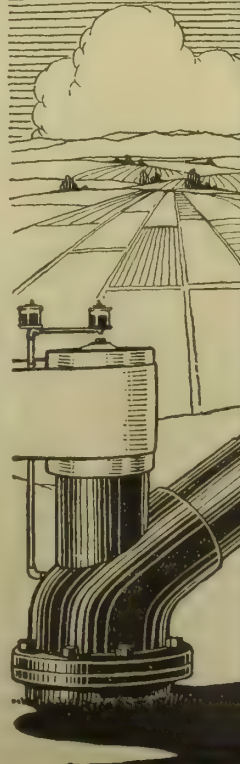
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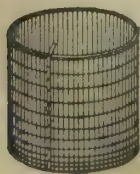
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Legumes and Berries.

[Written for Pacific Rural Press.]

Can a system of crop rotation be evolved that will necessitate the growing of crops only one year after old strawberry vines have been removed before young plants can be set?

Such is the problem that Dr. J. B. Cutter of Santa Cruz county expects to experiment with next year. His first patch of three acres will be removed then after four years of bearing; and he doesn't believe it is profitable to grow berries if the land has to lie idle as long as customary among berry growers.

The strawberry planting on this ranch has been done in units, three acres in the first one four years ago, but two and a half each year since then, because it was found that the average Japanese family can only care for the smaller patch and do all of the work required.

With five such plots of ground Dr. Cutter expects to be able to have three of them producing and an-

other one coming into bearing all of the time, the fifth plot being planted to some leguminous crop, such as beans, vetch, or clover. This crop will be grown purely as a cover crop and plowed under with the idea of replenishing the soil with at least a portion of the nutrients taken out by the berry plants.

To Dr. Cutter's mind it seems unreasonable that a shallow rooted plant like the strawberry when drawing from but a small amount of the soil should so thoroughly deplete the fertility as to make future planting impracticable. Besides the cover cropping he will plow deeply; and these together with the organic matter secured from irrigation water that is pumped from a nearby lake will, he thinks, permit successful replanting.

Berry growers in the vicinity will watch his experimenting with much interest; and if he is successful it will mean much profit to berry grow-

SOFT JELLY.

To the Editor: I read Professor Cruess's articles on jelly-making with much interest. I bought a syrup thermometer and proceeded to make a blackberry, and a plum jelly, following the directions, I believe, quite accurately. I am not a novice in jelly-making in the ordinary way. I tested the French prune, for pectin, and found it answered to the test. The taste suggested enough acid, as the fruit was only just ripe. Nevertheless when the jellies were completed they were both soft, especially the plum, which I am holding for advice as to how to stiffen it. I have read in a number of articles on jelly-making that more than "pint to pint" of sugar was too much and would tend to soften the jelly. Professor Cruess' theory of retaining the natural flavor of the fruit by extra sugar and lower temperature very much appeals to me and I would like to know how he does it. The above two jellies have certainly a wonderful flavor. A sincere admirer of your paper—M. B. D., Walnut Creek.

[Answered by Prof. W. V. Cruess.]

[I should judge that the trouble has been that the pectin solution was not concentrated sufficiently before adding the sugar. In cases where the fruit is somewhat deficient in pectin or in acid or in both of the constituents, if the juice is concentrated to two-thirds or one-half the original volume before adding the sugar, it will sometimes be found to jelly satisfactorily where failure would result otherwise.

I have never tried to make jelly from the French prune, but have had success with some varieties of plums. The theory of adding extra sugar to the fruit juice in making the jelly is that excessive boiling is avoided and in this way less of the flavor is lost in the vapors that boil off from the mixture. If the juice has sufficient pectin and acid, it is perfectly feasible to add one and one-half cups of sugar to one of juice and simply bring the juice to a boil and make a satisfactory jelly. Where only one cup of sugar is used to one of juice, it becomes necessary to concentrate the sugar in the juice down to a ratio of one and a half to one by evaporating off excess moisture. This of course concentrates the acid and the pectin at the same time that if concentrates the sugar; therefore, it is possible very

often to get a jelly where one of sugar to one of juice is used when it is impossible to make a jelly with one and one-half of sugar to one of juice. Therefore, in case of failure with the latter method, it is feasible to concentrate the fruit juice before adding the sugar.]

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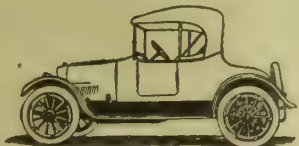
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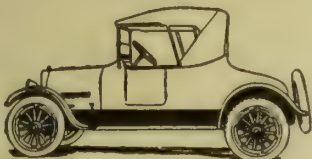
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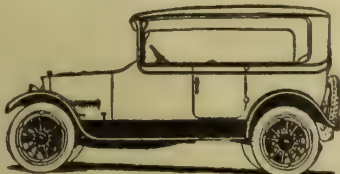
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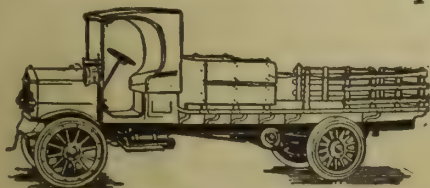
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THAT'S THE REMARKABLE difference between Reos and other cars—with only one exception. And that isn't a competitor of Reo.

CONSIDER THIS most carefully in your selection of a car—this fact, that every Reo model is standard from season to season.

IT IS A STAPLE, not a novelty, you buy when you buy a Reo.

AND IF YOU DO have to wait a few days for a Reo, whereas, you can get other makes right off the floor—remember there's a reason, and that reason is the best possible reason why you should select a Reo for yours.

IT MEANS MONEY in pocket for you in years to come—as well as satisfaction from the day you do get your Reo.

REO MOTOR CAR COMPANY
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Factories: Lansing, Mich.

"THE
GOLD STANDARD
OF VALUES"

Mechanical Power on the Farm.

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of your experiences and troubles.

ANTELOPE VALLEY PUMPING.

To the Editor: I see an item in your issue of Sept. 2 about pumping plants in Antelope Valley, Los Angeles county. What depth of a well is required to get sufficient water for irrigation and how high would you have to lift the water, also character of the soil?—N. P. P., Orland.

[Antelope valley is surrounded by hills and mountains, being longest from east to west and 20 miles broad between Rosamond and Palmdale. It slopes gradually from the hills to a broad flat trough which runs northeast through the valley from west of Lancaster.

Artesian water flows nearly if not quite the year around in wells along the trough, and well borers say there is a lake of water under certain portions of the valley. The farther you go from the trough, the deeper you will have to go for water.

Certain sections of the valley, principally in and along the trough, are badly impregnated with alkali. Most of the Valley soil is quite sandy, but the farther you get from the railroad in many directions, the more enthusiastic you become, for alfalfa, grain, fruit, and livestock are changing the appearance of the landscape where alkali does not prevent and where water is available.

T. J. True, a nurseryman who lives south of Lancaster, struck first water at 120 feet and it rose to the 100-foot level in a 6½-inch well which would supply 15 to 20 inches of water if the pump were big enough. Mr. True thinks that eventually 600,000 acres of the Valley will be irrigated.

D. H. Graham, six or eight miles west of Lancaster, has a well 16 inches in diameter 150 feet down, then 10 inches to the 541-foot depth. This is on the rise above and south of the head of the trough. It furnishes 30 inches of water. On his level land, which produces fine alfalfa nearer the trough, water comes 23 feet from the surface but is pumped down to 60 feet.

W. N. Umsted lives four or five miles east of Lancaster, which is eight miles north of Palmdale. This place is perhaps four or five miles southeast from the low level of the trough. The land here slopes 25 to 30 feet per mile. It is steeper nearer the hills. Mr. Umsted has a well drilled 230 feet deep but sanded up, so a year ago it was only 144 feet. Water comes to 27 feet from the surface in summer. A neighbor two miles west of him had a well 500 feet deep from which the water flows just over the casing at the top of the ground.]

CAUTIONS DEEP TRACTOR PLOWING.

[Written for Pacific Rural Press.]

"A farmer usually wants to know first how deep and wide a tractor will plow," says Prof. F. L. Peterson, formerly of University Farm but now with a commercial company. "We cannot recommend deeper plowing indiscriminately. Most any tractor can run right along and tear up ground that has not seen the light

for thousands of years.

Most of the bacteria which make over nitrogen fertilizers and soil elements into soluble plant foods, must have air. Because air has been unable to circulate in these lower soil strata, the latter do not contain them, especially in heavy soils.

"When a tractor user plows so deep as to turn up a large amount of such sterile soil, he gets poor crops the first year because the soil is dead.

"I had typhoid fever once. The doctor barely touched a platinum point in bacteria from my sickened body, then rinsed it off five times in sterile water, then rubbed it ever so slightly on bouillon culture media. Under the microscope I could count 10 bacteria. In 40 minutes these had multiplied so there was no possibility of counting them one by one. But the soil bacteria we want do not multiply so rapidly. The progeny of one may be only 16 or 20 at the end of a season. So it takes time to give life to the sterile subsoil turned up by a tractor.

A tractor-drawn subsoiler breaks up the subsoil so it may store water and gradually become infected with bacteria and filled with plant roots. Such a subsoiler will not interfere with plant growth in the surface soil—it will have a most beneficial effect.

"But if a subsoiler is unavailable, we recommend gradually deeper plowing each season, perhaps only one-half inch deeper in heavy soils, and an inch or more deeper each season in lighter soils.

"Since the Soil Survey of Sacramento Valley made by the U. S. Government and the University of California shows 163 different soil types in that valley, it is hard to lay down a definite rule for deeper plowing."

COMPRESSED-AIR WATER SUPPLY FOR FARM USE.

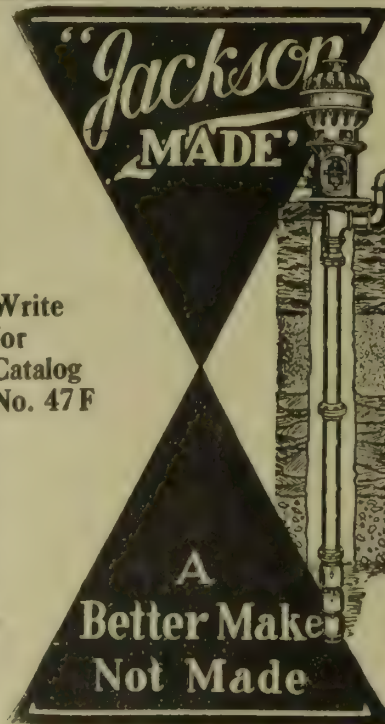
[Written for Pacific Rural Press.]

A compressed air water system has supplied four families and their gardens for six years and the only repairs have been leather packing. Water is 165 feet below the surface according to J. D. Williams of Santa

Clara county, on whose ranch the outfit is located.

A two h.p. Western Electric motor runs a small Luitweiler pump which forces water into a Kewanee Water Supply tank of 500 or 600 gallons capacity. The pump cog wheels are connected to a small air

compressor which gives 65 pounds pressure in the tank when it is full. This is not in gear very much, since not much air escapes. Under full pressure, the water from faucets is mixed with air, but Mr. Williams thinks this is desirable. When water is drawn out very fast, of course



For Water Deep Under The Ground

Jackson Deep Well Turbine Pumps give continuous and efficient service. They do not get out of order as they have no valves or plunger rods. Very little care or attention needed as they are oiled from the surface. Are much lower in cost than other types of deep well pumps when the expense of dug pits, cribbing and timbering is reckoned. They raise water from the very bottom of the well, thus eliminating heavy vacuums and delivering all the water the well yields. They develop slow wells and increase their flow.

Like all Jackson Made Pumps These Deep Well Turbine Pumps Are the Very Best Pumps Made for the Purpose—They are Dividend Earners, Not Expense Makers

Whatever your water problems may be our Expert Pumping Engineers will help you out free of charge—write

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and Visalia, Cal.
Works: West Berkeley, Cal.

WILLIAMS FEED GRINDER

Cuts --- Shreds --- Grinds

Separately or in Combination

Any kind of hay, straw, vines, beet tops, sheaf grain, and grain either shelled or in the head

Six sizes from 500 pounds per hour up to 10 tons per hour

The Alfalfa Meal receiving the Gold Medal at the P. F. I. E., 1915, was ground by a Williams' Mill, which had then been in operation five years.

Write for Bulletin No. 752

Williams Patent Crusher & Pulverizer Co.

PACIFIC SALES OFFICE

268 Market Street,

San Francisco, Cal.



The New Portable—A Real One-Man Stump Puller

Proven a most economical device for clearing stump land. Pulls stumps faster, cheaper and with less work. Your fifteen-year-old boy can drive it around, load and unload it alone. The

Hercules Triple Power Portable Stump Puller



Comes equipped complete, ready for work. The new portable is the greatest development in stump pullers of today. One man handles the job alone, no extra help needed. Think of the tremendous saving of two extra men at \$2.50 per day. Hercules Beats Hand-Power Machine. In Minnesota State Experimental Farm test the Hercules pulled more stumps than a hand-power machine and pulled the stumps at 61% less cost. Think of it, 61% cheaper for you to operate the Hercules. The Hercules, at another State Experimental Farm test, pulled stumps at 70% less cost than dynamite. Write me your stump pulling problems today. Tell me just how much land you have to clear. I'll tell you how to get stumps out for the least money. The stump puller that will save you money and do the work faster and safer is the puller you want. A card from you today brings my special low price, the most remarkable stump puller offer ever made—all facts and proof, with full particulars also information regarding Hercules Hand-Power Machine with 120,000 lbs. pull. My book contains a fund of practical, useful information. Write for it today. B. A. Fuller, Pres. HERCULES MFG. CO., 5125th St., Centerville, Ia.



the pressure is lowered. It was 20 pounds when we saw it and the pump was busy. An automatic stop-and-start mechanism sets the motor going when water is out and pressure low; and stops it when enough water has been pumped to compress the air to 65 pounds. Mr. Williams says this would force water 100 feet high.

A Kewanee head is all right where it is only 50 feet to water, but a Luitweiler head seems most desirable where it is so far down as on this ranch.

Another motor, a 5 h.p. General Electric, is connected to a shaft in the pump house, to run four different emery wheels.
60 days per year.

SHOULD HE BUY A TRACTOR?

Paul Jean of Sacramento county has ten acres of Tokays in which two horses, not especially high-priced, do the first plowing in six days, harrow both ways in 1½ days, then after about two weeks plow the other way and work it down. Just a little other work throughout the year totals not over an average

of 60 days out of the 365. Even the hauling of packed grapes to shipping point is done with a small automobile.

On Monday, Sept. 4, Mr. Jean came to the State Fair Tractor Demonstration to see if he could find a machine which could do the work of his two horses, not cost much more than two fair animals, and eat only

YOU WILL KNOW
WHAT THE WORDS
"ONE MAN TRACTOR"
MEAN---WHEN YOU
SEE

THE BATES STEEL MULE

"ONE OF MANY."

"The work done by my BATES STEEL MULE is equivalent to 500 ACRES of plowing. This work has been done on PEAT LAND, where it is impossible to work horses."

Report made by, James A. Hallett, West Sacramento.
Note.—Mr. Hallett's upkeep in repair parts amounts to \$60.68.

The
Bates Steel Mule Company
OF CALIFORNIA
320 N. San Pedro Street
LOS ANGELES, CAL.

Be There—
PU-EN-TE
SEPTEMBER
19-20-21-22-23

THIS IS AN OPPORTUNITY YOU CANNOT AFFORD TO MISS. PLAN TO BE WITH US ON THESE DATES. TRACTORS—FARMING IMPLEMENTS—DEEP TILLAGE TOOLS FOR ALL FARM AND ORCHARD WORK WILL BE DEMONSTRATED. AN EDUCATION FOR YOU, WORTH GOING MILES TO SEE. THIS WILL BE THE

Greatest
**TRACTOR
DEMONSTRATION**
Ever Held in
CALIFORNIA

ALL arrangements completed for taking care of the thousands who will come from all parts of the State. Make this event YOUR HOLIDAY. SPECIAL RATES IN EFFECT—ASK YOUR AGENT.

PU-EN-TE

is near LOS ANGELES on the MAIN VALLEY BOULEVARD —is easy to reach from all points. Southern Pacific, Salt Lake and Pacific Electric Railroads lead to Demonstration Field.

Sept. 19, 20, 21, 22, 23

EXHIBITORS

C. L. Best Gas Traction Co., 18 Tracklayers.
Bates Steel Mule Co., 1 Steel Mule.
W. L. Cleveland Co., 1 Waterloo Boy.
Dauch Mfg. Co., 1 Sandusky.
Holt Mfg. Co., 3 Caterpillars.
Hughson & Merton, 1 Big Bull.
A. F. George Co., 2 Yuba, 1 Happy Farmer, 1 Hart-Parr.
Wm. Gregory & Sons, 1 Lambert.

Joshua Hendy Iron Works, 1 Invincible, 1 Paragon.
Samson Sales Co., 2 Samson's.
Union Tool Co., Sure Grip.
PLOW LINES.
California Moline Plow Co., Moline.
John Deere Plow Co., Deere.
Dixon & Griswold, P. & O.
Killefer Mfg. Co., Killefer.
Oliver Chilled Plow Co., Oliver.

General Agricultural Review.

FIELD CROPS.

The Fallon, Nev., cantaloupe crop promises to be excellent.

Fully 6000 people attended the Melon Day Festival at Turlock Sept. 6th.

There will be a bumper crop of Lima beans in Huntington Beach district this year.

Germany will permit no exportation of sugar beet seed until late this fall, after her own demands have been supplied.

Last week the California Lima Bean Growers' Association of Oxnard boosted the price of lima beans from \$5 per cwt. to \$5.42½.

The total of Turlock melon shipments for the season up to the close of last week was 2,496 cars of cantaloupes and 620 cars of watermelons.

Hop-picking began in Santa Rosa Sept. 2. Thousands of people are at work. The crop is excellent, though prices are low owing to the lack of adequate shipping.

El Dorado county has the distinction of reporting the largest yield of white potatoes from any county in the United States. This yield amounted to 790 bushels from a previously selected fertilized acre in a potato field.

A melon weighing 52½ pounds, 2 feet 9 inches long, 2 feet 8 inches in circumference around the middle, and 5 feet 7 inches in circumference lengthwise, was grown on the T. F. Burrows ranch on the Oakland colony near Tulare.

According to the monthly crop report of the U. S. Department of Agriculture, the third largest yield of barley in any county in the United States is in San Luis Obispo, Calif., which reports 115 bushels per acre from a field of 60 acres.

The final efforts of the Beet Growers' Committee at Fallon, Nev., have only been able to increase the original 1,884 acres signed up to 2,212. It is probable that the required 2,500 acres asked for will be planted. The management will not abate its demand for 30,000 tons.

Charles E. Virden, general manager of the California Fruit Distributors, has been elected general manager of the newly organized Pacific Rice Growers' Association, and will handle the business of the rice men through the offices of the California Fruit Distributors.

E. H. Hancock, field man for the State Labor Commission, has been detailed to go to El Centro and establish a branch office of the State Bureau to assist the cotton growers in getting pickers for the field. One dollar a hundred pounds has been decided upon as the price basis for picking.

Eugene H. Grubb of Carbondale, Colo., a farmer, but for years conducting researches in the potato industry at the instance of the Dept. of Agriculture from a cultural standpoint, has been employed by the Southern Pacific Co. to look over the potato industry along its lines in California and Nevada.

DECIDUOUS FRUITS.

An increase in prices to the trade, ranging from a quarter cent up, was announced last week at the office of the California Fruit Growers.

These are busy days in the Colusa prune orchards. The price is higher than for many years. The grape and almond growers are busy also.

It is claimed that a Chinese pear tree absolutely resistant to pear blight has been propagated at the Plant Introduction Garden at Chico.

A new disease has developed in the peach orchards near Ceres. The disease manifests itself with black spots in the peaches, which causes decay.

Green fruit is moving out of the

San Joaquin valley at the rate of 50 and 60 cars a day, and good prices are being received on the Eastern markets.

Fruit growers are interesting themselves in some new stock from foreign countries upon which is almost if not entirely resistant to the blight.

The reasons for the high price of fruits and vegetables at Chicago, many of which are retailing for twice what they brought last year,

No Pit

is required with the

Krogh Deep Well Turbine Pumps



For bored or drilled wells from 10 inch inside diameter up; and for capacities of 250 gallons per minute up to 3000 gallons per minute. Built for pumping from any depth to and including 250 feet. They are absolutely water balanced and are self-aligning. More water can be obtained from such wells than with any other type. Built in belted or direct motor driven types. If interested, write for Bulletin.

Krogh Manufacturing Company

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LOS ANGELES, CAL.

BLAKE, MOFFITT & TOWNE

Dealers 37 FIRST ST., SAN FRANCISCO
In Blake, Moffitt & Towne, Los Angeles
PAPEE Blake, McFall & Co., Portland, Oregon

will be investigated by a federal grand jury.

H. P. Stabler, Yuba Co. Horticultural Commissioner, will leave the

State for 30 days on a trip to Oregon to learn the success met with by the growers of that State in fighting pear blight.

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on
HYDRATE YOUR SOIL LIME ROCK
means DOLLARS for you.
Send for free booklet.
PACIFIC LIME AND PLASTER CO.
807 Monadnock Bldg., San Francisco

WINCHESTER



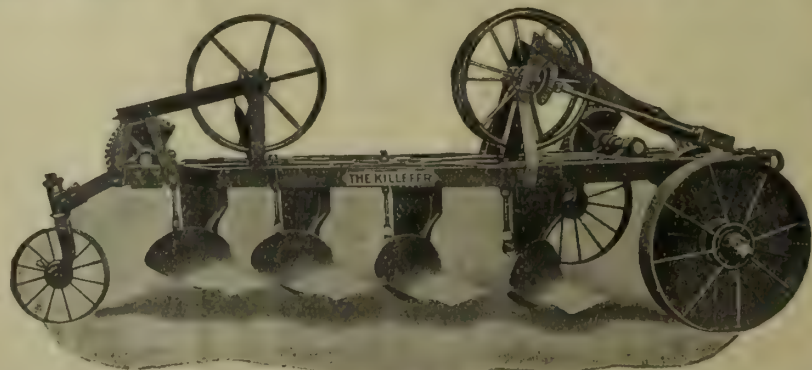
Shotgun Shells

"LEADER" AND "REPEATER"

For the high flyers, or the low flyers, "Leader" and "Repeater" shells have the reach, spread and penetration. Their great sale is due to these qualities, which insure a full bag. Use them in your gun. To be sure to get them

ASK FOR THE W BRAND

EXTRA HEAVY FOUR GANG TRACTOR PLOW



**KILLEFER
QUALITY**

**KILLEFER
EFFICIENCY**

We will meet you at the Tractor Demonstration
PUENTE - September 19 - 20 - 21 - 22 - 23

THE KILLEFER MANUFACTURING CO.

2209-21 SANTA FE AVE.

LOS ANGELES, CAL.

It is reported that all the Peach Tree farmers on the Miller & Lux property, in the vicinity of San Lucas, will have to vacate this fall, as cattle are to occupy the whole ranch.

A new variety of red apple has been grown in the orchard of Paige & Son at Corralitos. It is known as the Odrenco, is blood red in color, and has the shape of the winesap, and has a delicious odor.

The latest industry for California began operations at Middle River this week, it is said, in the manufacture of potato flour and potato starch from culled potatoes from the lands of the Sacramento district.

Smith Valley, Nev., has a successful berry grower in M. F. Hovey. Mr. Hovey has had wonderful success in growing strawberries, raspberries, currants and gooseberries, and disposes of all he can raise to the farmers in the valley.

CITRUS, OLIVES, SEMI-TROPICAL

There is a strong demand throughout the Eastern States for California almonds. The crop is short and prices are high.

Building is begun on the new olive plant at Lindsay. Lindsay has one of the largest acreages to olives in the State.

The annual report of the Victoria Ave. Citrus Ass'n, Riverside, shows an average of \$1.65 per box received for navels, and \$2.20 for Valencias, f. o. b. Riverside.

G. W. Williams, president of the Goleta Walnut Assn., says that last year's crop of nuts is practically all sold, and that this year's nuts will probably be all sold before they are harvested.

The Central Walnut Association, consisting of delegates from each of the various walnut associations of the State, will meet on September 20 to set the price on nuts for the coming season.

Construction on the cannery to be operated by the Northern California Olive Corporation has been started at Palermo, Butte Co. Heretofore the company has sold its olives to the Calif. Fruit Canners' Ass'n.

The two-stab lady-bug, a type of insect inimical to the gray scale that infests citrus trees, is a welcome invader of the citrus orchards roundabout Lemon Cove, Tulare Co. The bug is of a bluish hue, with a red spot on either side.

California's lemon crop this year is to be 92 per cent while the average for the last ten years has been 88 per cent, according to the latest report of the U. S. Department of Agriculture. Oranges are 93 per cent as compared with a ten-year average of 88 per cent.

At the annual meeting of the Central California Citrus Fruit Exchange officers were elected for the year, including Frank Hostetter, president; G. S. Berry, vice-president; A. S. Rider, secretary and manager; G. V. Reed, treasurer; G. S. Berry, delegate to the California Fruit Growers' Exchange.

GRAPES.

A big raisin-stemming machine for the Live Oak Association arrived last week.

Tokay grapes are being shipped out of Lodi at the rate of 40 to 45 cars a day. The fruit is in prime condition, and fancy prices are expected.

The Ceres growers of Malagas and Tokays are busy picking and packing their vintage. From 50 to 200 boxes of California figs are shipped each day with the grapes.

The viticultural interests of the State are jubilant over the passage of the new revenue bill, which modifies the emergency wine tax that has borne so heavily on the grape industry the past year. The bill provides for the rebate of 45 of the 55 cents per gallon emergency tax paid on grape brandy used in the fortification of sweet wines, this being the difference between the old tax of 55 cents and the new one of 10 cents, and means a saving to brandy makers of the State of \$1,175,978.79.

Grape-picking around Fresno starts this week on a record crop. Thompson Seedless crop will be about the same as last year, while the muscats will be a little heavier.

Contracts for picking raisin grapes on the contract system as approved by the I. W. W.s, has begun in the San Joaquin valley. The price is 3½ cents a tray, which is slightly above the average.

Prof. W. V. Cruess of the viticultural department of the University of California, has been in Yuba county recently studying the methods of drying grapes by the big dryers in the county.

Wine grapes from the Livingston vineyards have been practically all

sold for this season. The prices paid averaged \$15 per ton f. o. b. Livingston. These grapes are mostly of the Zinfandel variety.

It is reported that some choice hill grapes in the neighborhood of Healdsburg have sold as high as \$25 a ton. The Calif. Wine Assn. has announced a price of \$20 a ton for good grapes with high sugar content.

Fruit packing at Dinuba has become general. About 20 per cent of the Malaga crop is still on the vines. Emperor shipments will go forward the latter part of this month. The Thompson Seedless crop is exceptionally good this year, many of the vines yielding three or four trays.

MISCELLANEOUS.

Dr. A. J. Cook, State Horticultural Commissioner, who has been ill in the East some time, is reported to be improving.

The first annual Kern Co. agricultural fair will be held October 24-28. Agricultural exhibits are to be featured, and an auto race is programmed.

The International Harvester Company and the Best Manufacturing Company are among the manufacturers of tractors which will have machines on exhibit at the annual meeting of the Humboldt County Farm Bureau to be held in October. Other manufacturers are arranging to ship their tractors to that county.

26 Extra
Features

Mitchell
MID-YEAR
MODEL

73 New
Conceptions

A Car That Costs Too Much In an Ordinary Automobile Plant

When you see the Mid-Year Mitchell you will wonder how we give so much at such a modest price.

You will see a car which, inside and outside, seems built without regard to cost. You will see 26 extra features—costly things which other cars omit. Extras which cost us \$2,000,000 on this season's output alone.

You will ask how we afford it, when other like-class cars do not. And that's what we want to tell you.

John W. Bate Saves 50%

John W. Bate, the great efficiency expert, has built a new plant for the Mitchell. He has equipped it with 2092 up-to-date machines.

In this model plant, covering 45 acres, he has cut our factory costs in two. He builds here, under his efficiency methods, 98 per cent of this car. Even the bodies are built here.

In an ordinary plant a car like this would cost too much to sell at rivals' prices. In this plant all these Mitchell extras are paid for by factory savings.

The Hidden Extras

The Mitchell embodies 26 extra features which other cars omit. Our latest model—the Mid-Year Mitchell—brings out 73 new conceptions.

You can see these things. And they make the Mitchell the most complete car, the most up-to-date car you'll find.

But the greatest things Mr. Bate has accomplished are hidden in the chassis—the things that mean most to you.

Here is a car built almost without castings. There are 440 parts which are drop-forged or steel-stamped.

Here is a car where the margins of safety are never less than 50 per cent. Every part is stronger than it need be. It is built for a lifetime car.

Six of these Bate-built cars have averaged 164,372 miles each—over 30 years of ordinary service. One has run 218,734 miles without yet wearing out.

Mr. Bate's 17th Model

Our latest design—the Mid-Year Mitchell—is Mr. Bate's 17th model. It shows the results of 700 improvements which Mr. Bate has made in this car.

You will see here 73 new conceptions, new ideas and touches. Our experts examined 257 models, European and American, before this was completed.

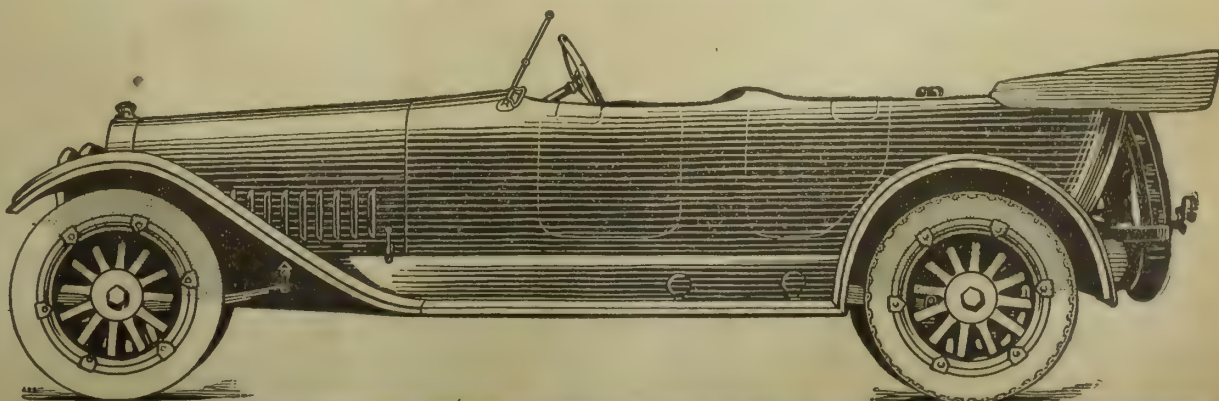
You will find a power tire pump on it. You will find Bate cantilever springs, not one of which ever has broken. There's a light in the tonneau, a locked compartment, an engine primer at the driver's hand. There is a ball-bearing steering gear for ease of driving. There is a new type of control.

When a man buys a car for a lifetime, this is the car he wants. The value it gives will amaze you.

Ask your nearest Mitchell dealer to show you this new model. If you don't know his name write us.

Mitchell Motors Company, Inc.
Successor to Mitchell-Lewis Motor Co.
Racine, Wis., U. S. A.

\$1325 F. o. b.
Racine
For 5-Passenger Touring Car or
3-Passenger Roadster
7-Passenger Touring Body \$35 Extra
High-speed economical Six. 48 horse-
power—127-inch wheelbase; complete
equipment including 26 extra features.



Fall Planted Onions.

[Written for Pacific Rural Press by Chas. F. Barnum.]

The experience of a successful Japanese onion grower of the Mesquite Lake region in Imperial Valley is very suggestive.

"I grow only crystal wax onions and plant the seed about October 10. I put my furrows three feet apart and plant two rows about one foot apart on the ridges. The seed I sow with a drill spacing them three inches apart.

"Between March 15 and May 1, I have plenty of green onions which I sell for enough to pay for the seed

and maintenance before they get too old for the green onion market.

"About May 1 I complete the fifth and last irrigation, but cultivate after each irrigation except this last one. I do not cultivate the last time, because I want the weeds to grow and thus shade the onions to avoid sunburning.

"I had this year 20 acres planted and got about 200 fifty-pound crates from each acre. This year I cleared about \$200 per acre but on the average, one can figure about \$150.

POTATO FIELD CRATES.

[Written for Pacific Rural Press.]

Crates are found far superior to sacks into which to pick potatoes in the field. Sacks cost 7½ to 9 cents and are too valuable to waste by allowing them to become wet and soiled in the field. Clean sacks are much more attractive to buyers. Potatoes picked from damp ground hold the moisture and spoil quicker in sacks than if dried first. But drying in the field often means sunburn. Rough handling of the starchy potatoes of the foothills causes them to crack.

Crates made 18x36x9 inches, from light wood strips, holding 110 pounds of potatoes, were found by E. H. Phreaner of Eldorado county to be ideal for handling them between field and grader. It is handy to pick into them, they are stacked up in trucks and in grading shed, as high as convenient, without any pressure and bruising of the potatoes, and good circulation dries them off in the shade.

VETCH-AND-GRAIN HAY.

To the Editor: I have raw desert land, never before cropped, deficient in humus. I wish to plant wheat or barley this fall, to cut green for hay. Will my hay yield be increased if I plant a small amount of vetch (inoculated) with the grain? I refer particularly to any stimulating effect the legume may have upon the grain by its proximity. If an increase is possible, in what proportion should I mix the seed (grain and vetch)?—W. F. A. Mc., Thermal.

[Answered by W. M. Mertz, Riverside Experiment Station.]

[The practice of mixing common vetch with barley or wheat for hay is seldom followed in this state. However, it is not an uncommon practice to use hairy vetch with barley or rye to make the resulting hay higher in quality, particularly in increasing its protein content.

The association of vetch with the cereal crops has been shown by some investigators to make for the better development of the cereal, when proper amounts of the two are grown with each other. Under irrigation, I can see no reason why the common vetch should not do well if inoculated, and undoubtedly the hay would be of greater value.

During a dry season or where the soil tends to be very low in nitrogen, the proportions of seed would vary. On a soil where the hay crop would normally be fairly good, the danger lies in having too much barley seed in proportion to the vetch. In a soil very poor in nitrogen, there is danger of getting too much vetch for the barley, the vetch being more or less independent of the soil nitre-

gen. Where there is too large a proportion of vetch, it is hard to cut and handle for hay. As a figure to work from, I should recommend in general the sowing of 30 pounds of vetch to 50 pounds of barley.]

[Note.—We have seen legumes growing with oats where the latter looked like young corn stalks and certain visitors would not be convinced that they were oats until the heads could be pulled out.]

CORROSIVE SUBLIMATE DOES NOT HINDER POTATO GERMINATION.

[Written for Pacific Rural Press.]

That there is no danger of killing seed potatoes by leaving them in corrosive sublimate solution too long seems proved by E. D. McSweeney of Los Angeles county.

He dips the seed for scab. Sometimes potatoes slip through holes in the sacks while dipping. Mr. McSweeney says that after such potatoes had soaked a full week, he planted them and they grew as well as the rest. He uses one pint of corrosive sublimate per 30 gallons water.

MORNING GLORY.

To the Editor: What is the best method of eradicating wild morning glory from alfalfa? It does not appear outside of a space about 20x20 feet as yet, but just discovered it and suppose it is spreading rapidly.—C. W. C., Lindsay.

[Answered by Wheeler, Reynolds & Stauffer.]

[We consider that Nonpareil is the best chemical for destroying wild morning glory.

Nonpareil is a liquid which when applied to the root of the morning glory, kills it in a very few days. Nonpareil does not injure the soil in any way. It also kills all insects which infest the ground.]

SUNFLOWER SEEDING.

To the Editor: How much sunflower seed will it take to sow one acre, and what would the normal yield be on same?—S. C. S., Tres Pinos.

[Answered by E. Powers, Manteca.]

It will take four pounds of sunflower seed to one acre, if sown in rows 36 inches apart, 18 inches apart in the row. The normal yield would be 15 sacks per acre, weighing about 75 pounds the sack.

Blackbirds have become such a pest in the rice fields near Marysville that farmers thereabout are shooting all they can hit. One farmer says blackbirds are costing him \$100 a day. Wild ducks no longer migrate north, but make their home during the hatching season in the rice fields. Wild ducks and blackbirds, together with jack rabbits and cottontails, make serious inroads on the profits of rice grow-

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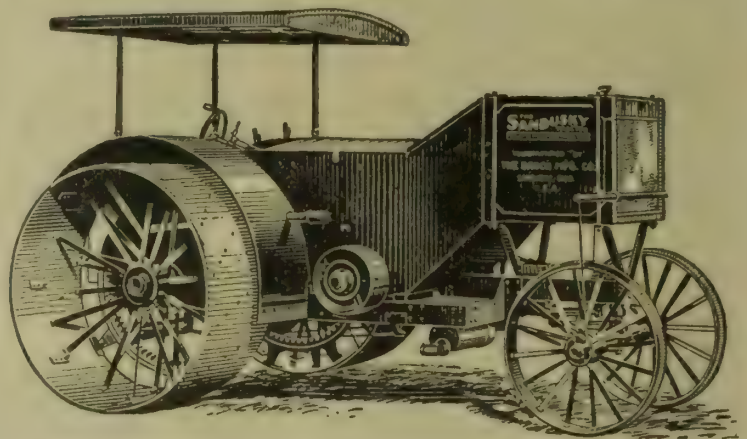
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State Fair Livestock Show.

[Written for Pacific Rural Press.]

Two things stand out prominently in the 1916 State Fair visitor's memory, viz., the weather which was delightful, and the livestock show which was marvelous for its quantity, quality and diversity of exhibits. There have been times in the past when excuses would have been more appropriate than praise for the livestock industry as presented at Sacramento, but that time has passed, as was evidenced by the attendance, which was larger than previous fairs despite the destruction of the horticultural exhibits by fire earlier in the week. Thus we believe that the livestock show attracted more than premium seeking exhibitors; it embraced seekers after livestock knowledge as well, and those seekers were farmers as a rule.

Swine.—Hogs outnumbered all other kinds of livestock with a total of 795 head divided as follows: Berkshires, 239; Durocs, 206; Poland Chinas, 193; Hampshires, 59; Chester Whites, 57; Yorkshires, 33 and Mulefoots 7.

The outstanding feature of the entire swine show was the finish that practically every animal carried. It was clearly apparent that the old difference of opinion as to the flesh a hog should carry in the show ring has been settled, for a more uniform finished lot of hogs was never assembled in any previous California show. True enough some were doubtless ripened up too quickly, but experience in building bone with fat will overcome that.

Dairy Cattle.—In numbers dairy cattle beat previous records, the total of all breeds being 400 head, of which Jerseys contributed 124, Holsteins 118; Guernseys, 78; Ayrshires, 41; Milking Shorthorns, 15 and Dutch Belted 24.

In this division also has come a distinct improvement of condition in animals shown, good mellow hides and glossy coats being the rule rather than the exception.

The Holstein show was undoubtedly much smaller than the popularity of the bred in the State warrants, but is accountable for by the dangerous ground one treads in showing cows that are being maintained for their milk record qualifications.

The Jersey show was gratifying inasmuch as confidence in the rugged, dairy type Jersey was more firmly than ever impressed on breeders' mind by the consistent manner in which the judge picked out the blue ribbon winners from among the larger type animals. It is a pleasure to record that the judge in this case used a dairyman's measuring rod rather than an antiquated fanciers' score card.



Grand Champion Rambouillet Ewe, Owned by Bullard Co.

The Ayrshire show furnished the first real opportunity of judging the merits of this breed ever presented State Fair visitors in California. Nothing is more pleasing to the eye than the square udders which are characteristic of this breed and which



Grand Champion Percheron Stallion, Owned by M. Bassett.

our breeders seem to know the value of.

Good grooming and a more decided tendency toward definite types was in evidence in practically every Guernsey class, although it was apparent that exhibitors and especially those who have their nose close to the milk bucket are going to be slow in breeding away from the big vigor-

the number of exhibitors. In this respect no State Fair in recent years has equaled the one just passed. Few of the faces which were present as owners this year have been contenders in the past and it is on this basis that the success of the show should be considered, as it argues well for the future.

Sheep.—In the matter of public interest nobody was kept busier an-

swering questions and making sales than the shepherds and flock masters. The show was an improvement over those of recent years inasmuch as there were more sheep shown and of a decidedly higher class in some divisions. We doubt not that sheep husbandry from a showman's standpoint, and that means from a utility standpoint, will benefit greatly by



Grand Champion Guernsey, Owned by Edgemoor Farms.

ous type toward the more refined, and perhaps straighter-backed kind, which seem to find most favor among show-ring judges.

Beef Cattle.—Judged by numbers alone the beef cattle exhibit did not indicate progress, for there were but 50 head of which 43 head were Shorthorns. But a more significant feature than number of cattle was

the exhibition staged this year.

Horses.—For the first time in years California has held a thoroughly praiseworthy horse show without the assistance of out of State importers. True enough there was an unusual lack of gaudy braiding in mane and tail of many of the animals shown, but it was essentially a breeders' and farmers' show.



Champion Pen of Range-Raised Rambouillets, Owned by T. S. Glide.

The most spectacular and probably the best show was staged by the Shire breeders who put up a highly deserving competition for ribbons in practically every class. There were about 35 head entered from the different stables.

The Percherons outnumbered all other breeds as usual with 50 head. All of the livestock awards are given in the following:

HORSES.

Percherons.—Stallions, four years old or over: 1, Ithos, M. Bassett, Hanford; 2, Loiret, N. W. Thompson, Oakland; 3, Kapet, Whitehall Estates, Inc., Tracy. Stallions, three years and under four: 1, Boomer, Jr., Ruby & Bowers, Davis; 2, Sippee, J. W. Wakefield, Acampo; 3, Star, H. M. Jerome, Stockton. Stallions, two years and under three: 1, Paulus of Paicines, J. K. Macomber, Tipton; 2, Bay Boy, H. G. Learned, Stockton; 3, Patre of Paicines, Macomber. Stallions, one year old and under two: 1, Plaisir, Whitehall Estates, Inc.; 2, Fernand's Timbre, Macomber; 3, Pilote, Whitehall Estates, Inc. Mares, 4 years old or over and foal at feet, both to be considered: 1, Fritz and Black Beauty, Learned; 2, Lambruche, Whitehall Estates, Inc.; 3, Lili, Whitehall Estates, Inc. Mares, four years old or over: 1, Marie, Ruby & Bowers; 2, Limoniere, Whitehall Estates, Inc.; 3, Leonore, Whitehall Estates, Inc. Three years old and under four: 1, Patti, Learned, Stockton. Mares, two years and under three: 1, Martha, Whitehall Estates, Inc.; 2, Maxine, Whitehall Estates, Inc.; 3, Marie, Whitehall Estates, Inc. Mares, one year and under two: 1, Politesse, Whitehall Estates, Inc.; 2, Black Bess, Learned. Stallion or filly foal under one year: 1, Black Beauty and foal, Learned; 2, Lili's Foal and Rebecca, Whitehall Estates, Inc. Get of Sire: 1, Get of Londrecitos, Whitehall Estates, Inc.; 2, Get of Pink Paris, Learned; 3, Get of Londrecitos, Whitehall Estates, Inc. Produce of Dam: 1, Produce of Lambruche, Whitehall Estates, Inc. State Class, Stallions four years old or over: 1, Ithos, Bassett; 2, Loiret, Thompson; 3, Kapet, Whitehall Estates, Inc. Stallions, three years old and under four: 1, Boomer, Jr., Ruby & Bowers; 2, Sippee, Wakefield; 3, H. N. Jerome, Jerome. Stallions, two years and under three: 1, Paulus of Paicines, Macomber; 2, Bay Boy, Learned; 3, Patre of Paicines, Macomber. Stallions, one year and under two: 1, Plaisir, Whitehall Estates, Inc.; 2, Fernand's Timbre, Macomber; 3, Pilote, Whitehall Estates, Inc. Mares, four years old or over, and foal at feet, both to be considered: 1, Fritz and foal, Learned; 2, Lambruche and foal, Whitehall Estates, Inc.; 3, Lili and foal, Whitehall Estates, Inc. Mares, 4 years old or over: 1, Marie, Ruby & Bowers; 2, Limoniere, Whitehall Estates, Inc.; 3, Leonore, Whitehall Estates, Inc. Three years old and under four: 1, Patti, Learned. Mares, two years and under three: 1, Martha, Whitehall Estates, Inc.; 2, Maxine, Whitehall Estates, Inc.; 3, Marie, Whitehall Estates, Inc. Mares, one year and under two: 1, Politesse, Whitehall Estates, Inc.; 2, Black Bess, Learned. Stallion or filly foal under one year: 1, Black Beauty, Learned; 2, Lili's Foal Rebecca, Whitehall Estates, Inc. Get of Sire, four animals under four years, the get of same stallion (stallion need not be shown): 1, Get of Londrecitos, Whitehall Estates, Inc.; 2, Get of Pink Paris, Learned; 3, Get of Londrecitos, Whitehall Estates, Inc. Produce of Dam: 1, Produce of Lambruche, Whitehall Estates, Inc. Champion Stallion: 1, Ithos, Bassett. Champion Mare: 1, Marie, Ruby & Bowers.

Belgians.—Stallions, four years old or over: 1, Joseph, Long Tree Belgian Horse Co., Brentwood; 2, Par Hazard, August Meier, Lockeford. Stallions, three years and under four: 1, Frank Iams, Ruby & Bowers, Davis. Stallions, two years and under three: 1, Stevenot, Ruby & Bowers; 2, Cadet of Paicines, J. K. Macomber, Tipton. Stallions, one year old and under two: 1, Brussell, Ruby & Bowers; 2, Native Son, J. K. Macomber. Mares, 4 years old or over, and foal at feet, both to be considered: 1, Judith and foal, Ruby & Bowers. Mares, four years old or over: 1, Ruby, Ruby & Bowers. Mares, two years and under three: 1, Christabel, Ruby & Bowers. Stallion or filly foal under one year: 1, Davis Liddle,



Grand Champion Rambouillet Ram, Owned by Bullard Co.

Ruby & Bowers. Produce of Dam, two animals under four years, the produce of same mare, mare to be shown: 1. Produce of Ruby, Ruby & Bowers. Champion Stallion: Joseph, Lone Tree Belgian Horse Co. Champion Mare: Ruby, Ruby & Bowers. State Class, stallions, four years old or over: 1. Par Hazard, Meier. Stallions, 3 years and under four: 1. Frank Iams 1, Ruby & Bowers. Stallions, two years and under three: 1. Stevenot, Ruby & Bowers; 2. Cadet of Palcines, J. K. Macomber. Stallions, one year and under two: 1. Brussell, Ruby & Bowers; 2. Native Son, J. K. Macomber. Mares, 4 years old or over, and foal at feet, both to be considered: 1. Judith and foal, Ruby & Bowers. Mares, four years old or over: 1. Ruby, Ruby & Bowers. Mares, two years and under three: 1. Christobel, Ruby & Bowers. Stallion or filly foal under one year: 1. Davis Laddie, Ruby & Bowers. Produce of Dam, two animals under 4 years, the produce of same mare; mare to be shown: 1. Ruby, Ruby & Bowers. Champion Stallion, 1. Stevenot, Ruby & Bowers. Champion Mare: Ruby, Ruby & Bowers.

Clydesdales.—All entries and all awards: Ruby & Bowers, Davis.

Shires.—Stallions, four years or over: 1. Neuadd Hillside, Jack London, Glen Ellen; 2. Anwick Arthur, Easton & Ward; 3. Blackhawk, Barn King, Easton & Ward; Stallions, three years and under four: 1. Royal James, Ruby & Bowers, Davis; 2. Searchlight King, Ruby & Bowers. Stallions, two years and under three: 1. Blackhawk Gay Lad, Easton & Ward. Stallions, one year and under two: 1. Salvador Conqueror, Easton & Ward; 2. Blackhawk Rising Star, Easton & Ward. Mares, four years old or over, and foal at feet, both to be considered: 1. Quania Diamonds, Easton & Ward; 2. Witchford Darby, Easton & Ward; 3. Orphan Girl, Jack London. Mares, four years old or over: 1. Rampton Mabel, Easton & Ward; 2. Cockington Princess, Jack London; 3. Quania Diamonds, Easton & Ward. Mares, three years and under four: 1. Hawton Bounce, Easton & Ward; 2. Blackhawk Beauty, Easton & Ward; 3. Salvador Queen, Jack Lon-



Grand Champion Jersey Cow, Owned by C. B. Hembree.

Mares, three years old and under 4: 1. Hawton Bounce, Easton & Ward; 2. Blackhawk Beauty, Easton & Ward; 3. Salvador Queen, Jack London. Mares, two years and under three: 1. Blackhawk Chessie, Easton & Ward. Mares, one year and under two: 1. Blackhawk Delphine, Easton & Ward. Stallion or filly foal under one year: 1. Blackhawk Betty, Easton & Ward; 2. Blackhawk Forest King, Easton & Ward. Get of Sire: 1. Get of Anwick Arthur, Easton & Ward. Produce of Dam: 1. Produce of Rampton Mabel, Easton & Ward; 2. Hawton Felicity, Easton & Ward; 3. Orphan Girl, Jack London. Champion Stallion, 1. Neuadd Hillside, Jack London. Champion Mare, 1. Blackhawk Chessie, Easton & Ward.

Grades and Crosses.—Geldings, two years and under 3: 1. Duke, M. Bassett, Hanford. Mares, four years or over: 1. Hattie, Bassett; 2. Beauty, Bassett. Mares, 2 years and under three: 1. Nellie, E. Farnham, Roseville; 2. Jennie, Farnham. Mares, two years old and under three: 1. Queen, Bassett. Stallion or filly foal under one year: 1. Lucy, University Farm, Davis; 2. Tom, Bassett.



Grand Champion Holstein Cow, Owned by A. W. Morris & Son.

don. Mares, two years and under three: 1. Blackhawk Chessie, Easton & Ward. Mares, one year and under two: 1. Blackhawk Delphine, Easton & Ward. Stallion or filly foal under one year: 1. Blackhawk Betty, Easton & Ward; 2. Blackhawk Forest King, Easton & Ward. Get of Sire: 1. Get of Anwick Arthur, Easton & Ward. Produce of Dam: 1. Rampton Mabel, Easton & Ward; 2. Hawton Felicity, Easton & Ward; 3. Orphan Girl, Jack London. Champion Stallion, 1. Neuadd Hillside, Jack London. Champion Mare: 1. Blackhawk Chessie, Easton & Ward. State Class, Stallions, four years old or over: 1. Neuadd Hillside, Jack London; 2. Anwick Arthur, Easton & Ward; 3. Blackhawk Barn King, Easton & Ward. Stallions, three years and under four: 1. Royal James, Ruby & Bowers; 2. Searchlight King, Ruby & Bowers. Stallions, two years and under three: 1. Blackhawk Gay Lad, Easton & Ward. Stallions, one year and under two: 1. Salvador Conqueror, Easton & Ward; 2. Blackhawk Rising Star, Easton & Ward. Mares, four years old or over, and foal at feet, both to be considered: 1. Quania Diamond and foal, Easton & Ward; 2. Witchford Darby and foal, Easton & Ward; 3. Orphan Girl and foal, Jack London. Mares, four years or over: 1. Rampton Mabel, Easton & Ward; 2. Cockington Princess, Jack London; 3. Quania Diamonds, Easton & Ward.



Grand Champion Shire Mare, Owned by Blackhawk Stock Farms.

DAIRY CATTLE AWARDS.

Holstein-Friesian—Bull, 3 yrs. old or over: 1. Segis Pontiac de Kol Burke, A. W. Morris & Sons, Woodland; 2. King Korndyke Hengerveld Ormsby 7th, S. G. Kounas, Modesto; 3. Lord Asa, Napa State Hospital, Napa; 4. King Korndyke Pontiac, A. W. Morris & Sons, Woodland. Two yrs. and under three: 1. Admiral of West Lawn, Napa State Hospital, Napa; 2. El Prado Wayne Colantha, J. W. Benoit, Modesto; 3. Korndyke Emperor Aralia of Elmwood, J. McKindly, Acampo. Senior Yearling Bull: 1. King Korndyke Colantha Pietertje, James McGillivray, Sacramento; 2. Korndyke Colantha Romeo, James McGillivray; 3. Aralia De Kol Pontiac Segis 2nd, A. W. Morris & Son, Woodland; 4. Segis Contenta Pontiac Burke, A. W. Morris & Sons, Junior Yearling Bull: 1. Segis Pontiac De Kol Burke Clyde, A. W. Morris & Sons; 2. Vin Segis Pontiac Alcartra Walker, A. A. Merkeley, Sacramento; 3. Colantha Korndyke Tritomia, James McGillivray, Sacramento; 4. Aralia Pontiac Walker, A. W. Morris & Sons. Senior Bull Calf: 1. Segis Pontiac De Kol Burke 6th, A. W. Morris & Sons; 2. Segis Acme De Kol Burke, A. W. Morris & Sons; 3. Pietertje Lyons Pontiac, University Farm, Davis; 4. Korndyke Colantha of Willowmead, James McGillivray. Junior Bull Calf: 1. Sir Plodge De Kol Korndyke, Adirondack Wetske Dairy Maid, calf, Bridgford Co., Knightsen; 2. King Mead Contenta, A. W. Morris & Sons; 3. Korndyke Parthenia of Willowmead, James McGillivray; 4. King Segis Pontiac Emperor, Lida Hartog Walker calf, A. A. Merkeley, Sacramento. Cows 4 years old or over: 1. Miss Korndyke Mercedes, Bridgford Co., Knightsen; 2. Kate Spotfoot De Kol, James McGillivray, Sacramento; 3. Beryl Clothilde Hengerveld 2nd, F. Stenzel, San Lorenzo; 4. Aagie Acme of Riverside, A. W. Morris & Sons, Woodland. Two years and under 4: 1. Colantha Contenta Creamcup, A. W. Morris & Sons; 2. Inka Tritomia Maid, James McGillivray; 3. Jessie Clay Korndyke, James McGillivray; 4. Mutula Queen Alcartra 3rd, A. A. Merkeley, Sacramento. Two years and under 3: 1. Contenta Pontiac Burke, A. W. Morris & Sons; 2. Fairy Princess Colantha, James McGillivray; 3. Korndyke Ormsby Creamelle, F. Stenzel,

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Grand Champion Sow



Miss Beauty, 550364, Grand Champion at P. P. I. E. and at Sacramento.

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San Lorenzo; 4, Queen Jetty, James Mc-Gillivray. Senior Yearling Heifer: 1, Minnie Mechthilde Louise, James McGillivray; 2, Jessie Clay Dolly, Napa State Hospital; 3, Segis Pontiac Margaret, A. W. Morris & Sons; 4, Segis Pontiac Bonita, A. W. Morris & Sons. Junior Yearling Heifer: 1, Princess Valley Mead Walker, A. W. Morris & Sons; 2, California Colantha Moss, University Farm, Davis; 3, Segis Pontiac Nutula, A. W. Morris & Sons; 4, Leda Beatrice Korndyke, James McGillivray, Senior Heifer Calf; 1, Daisy Korndyke De Kol Mercedes, Bridgeford Co., Knightsen; 2, Lady Margaret, A. W. Morris & Son; 3, Jessie Pearl Pontiac Burke, James McGillivray; 4, Manteca De Kol Payne, Henderson Co., Sacramento. Junior Heifer Calf: 1, Bridgeford Co., Knightsen; 2, Sadie Aralia of Elmwood, J. McKindly, Acampo; 3, Contenta Riverside Mead, A. W. Morris & Sons; 4, Bridgeford Co., Knightsen. Cow having official year-

ly record (conformation and record to count): 1, Aaggie Acme of Riverside 2nd, Conformation 87, Production 25.8, Total 112.8; 2, Aaggie Acme of Riverside, Conformation 90, Production 14.32, Total 104.32. Aged herd, to consist of one bull 2 years old or over, one cow 3 years old or over, one heifer 2 years old and under 3, one heifer 1 year old and under 2, one heifer or bull calf; all to be owned by and in possession of exhibitor at time entry is made: 1, Segis Pontiac De Kol Burke, Colantha Contenta Creamcup, Contenta Pontiac Burke, Princess Valley Mead Walker, Lady Segis Margaret, A. W. Morris & Sons. 2, Dutchland Sir Korndyke Colantha, Romeo Aaggie Louise, Jessie Clay Korndyke, Minnie Mechthilde Louise, Jessie Pearl Pontiac, James McGillivray. Breeder's Young Herd, to consist of one bull under 2 years, two heifers 1 year old and under 2, two heifers under 1 year; all but bull must be bred by and in possession of exhibitor prior to time entry is made: 1, Segis Pontiac De Kol Burke Clyde, Princess Valley Mead Walker, Segis Pontiac Margaret, Segis Pontiac Portia, Lady Segis Margaret, A. W. Morris & Sons; 2, King Korndyke Colantha Pletertje, Jessie Clay Dolly, Minnie Mechthilde Louise, Jessie Pearl Pontiac Ysidro Daisy, James McGillivray. Calf Herd, to consist of one bull and four heifers, under 12 months old, bred and owned by exhibitor: 1, Bull Calf, King Segis Pontiac Magadora, Daisy Korndyke De Kol Mercedes, Heifer Calf, Heifer Calf, Bridgeford Co.; 2, Segis Pontiac De Kol Burke 6th, Segis Pontiac Portia, Lady Segis Margaret, Contenta Riverside Mead, Segis Tidy Abbeckerk, A. W. Morris & Sons; 3, Korndyke Parthenia of Willowmead, Ruby Louise Pontiac Burke, Jessie Pearl Pontiac, Jessie Clay of Willowmead, Parthenia Grace of Willowmead, James McGillivray. Get of Sire, four animals, any age or sex: 1, Get of Segis Pontiac De Kol Burke, A. W. Morris &

Grand Champion Jersey Bull,
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Grand Leader 2nd.

World's Fair Champion Berkshire Boar is bred in Champion lines—won championship in one of the greatest Berkshire shows ever held. He sires Champions. At Sacramento won Grand Champion Sow; 1st prize Aged Sow; 1st prize Senior Yearling; 1st prize Junior Yearling; 2nd prize Under Year Cow, 1st prize, Get of Sire.

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AT CALIFORNIA STATE FAIR.

DAISY KORNDYKE MERCEDES, First Prize, Junior Champion and Reserve Grand Champion.

SIR JOHANNA DE KOL RAG-APPLE, First Jr. Bull Calf.

ADELINA PONTIAC SEGIS KORNDYKE, First Jr. Heifer Calf.

MISS KORNDYKE MERCEDES, First Aged Cow.

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Burke, A. W. Morris & Sons. Reserve Grand Champion Cow: Daisy Korndyke De Kol Mercedes, Bridgeford Co., Knightsen, Bull, 3 years old or over: 1, Segis De Pontiac De Kol Burke, Morris & Sons; King Korndyke Hengerveld Ormsby 7th, S. G. Kounties, Modesto; 3, Lord Asa, Napa State Hospital, Napa; 4, King Korndyke Pontiac, Morris & Sons. Bulls, 2 years and under three: 1, Admiral of West Lawn, Napa State Hospital; 2, El Prado Wayne Colantha, J. W. Benoit, Modesto; 3, Korndyke Emperor Aralia of Elmwood, J. McKindly, Acampo. Senior Yearling Bull: 1, King Korndyke Colantha Pietertje, McGillivray; 2, Korndyke Colantha Romeo, McGillivray; 3, Aralia De Kol Pontiac Segis 2nd, Morris & Sons; 4, Segis Contenta Pontiac Burke, Morris & Sons. Junior Yearling Bull: 1, Segis Pontiac De Kol Burke Clyde, Morris & Sons; 2, Vin Segis Pontiac Alcartra Walker, A. A. Merkeley, Sacramento; 3, Colantha Korndyke Tritomia, McGillivray; Aralia Pontiac Walker, Morris & Sons. Senior Bull Calf: 1, Segis Pontiac De Kol Burke 6th, Morris & Sons; 2, Segis Acme De Kol Burke, Morris & Sons; 3, Pietertje Lyons Pontiac, University Farm; 4, Korndyke Colantha of Willowmead, McGillivray. Junior Bull Calf: 1, Sir Pledge De Kol Korndyke, Bridgeford Co., Knightsen; 2, King Mead Contenta, Morris & Sons; 3, Korndyke Parthenia of Willowmead, McGillivray; 4, King Segis Pontiac Emperor, Merkeley. Cows, 4 years old or over: 1, Miss Korndyke Mercedes, Bridgeford Co.; 2, Kate Spotfoot De Kol, McGillivray; 3, Beryl Clothilde Hengerveld 2nd, F. Stenzel, San Lorenzo; 4, Aaggie Acme of Riverside, Morris & Sons. Cows, 3 years and under four: 1, Colantha Contenta Creamcup, Morris & Sons; 2, Inka Tritomia Maid, McGillivray; 3, Jessie Clay Korndyke, McGillivray; 4, Nutula Queen Alcartra 3rd, Merkeley. Cows, two years and under three: 1, Contenta Pontiac Burke, Morris & Sons; 2, Fairy Princess Colantha, James McGillivray; 3, Korndyke Ormsby Creamelle, Stenzel; 4, Queen Jetty, McGillivray. Cows, Senior Yearling Heifer: 1, Minne



Grand Champion Milking Shorthorn Cow, Alexander & Kellogg, Owners.

Mechthilde Louise, McGillivray; 2, Jessie Clay Dolly, Napa State Hospital; 3, Segis Pontiac Margaret, Morris & Sons; 4, Segis Pontiac Bonita, Morris & Sons. Cows, Junior Yearling Heifer: 1, Princess Valley Mead Walker, Morris & Sons; 2, California Colantha Bess, University Farm; 3, Segis Pontiac Nutua, Morris & Sons; 4, Leda Beatrice Korndyke, McGillivray. Senior Heifer Calf: 1, Daisy Korndyke De Kol Mercedes, Bridgeford Co.; 2, Lady Segis Margaret, Morris & Sons; 3, Jessie Pearl Pontiac Burke, McGillivray; 4, Manteca De Kol Fayne, Henderson Co. Junior Heifer Calf: 1, King Pontiac Segis Korndyke, Bridgeford Co.; 2, Sadie Aralia of Elmwood, McKindly; 3, Contenta Riverside Mead, Morris & Sons; 4, Spring Farm Pontiac Cornucopia, Bridgeford Co.

Guernseys.—Bull three years or over: 1, Imp. Itchen May King, Edgemoor Farm, Santee; 2, Imp. Robert Secret, B. E. Nixon, Napa. Bulls two years and under three: 1, Fair Maid's Pride, Calla Grove Farm, Manteca; 2, Dairy Maid's Nonpareil of Iowa, Edgemoor Farm, Santee; 3, Wanagan of Bella Vista, J. W. Henderson, Berkeley; 4, Auricle's Cherub of Edgemoor, Nixon. Senior Yearling Bull: 1, Im. Ricardo of Edgemoor, Nixon; 2, Pure Gold of Edgemoor, Edgemoor Farm; 3, Buttercup's Ferndene of Palmhurst, Henderson. Junior Yearling Bull: 1, Bullion of Edgemoor, A. B. Humphrey, Escalon; 2, Proud King of Edgemoor, Edgemoor Farm; 3, Volunteer of Edgemoor, Edgemoor Farm. Senior Bull Calf: 1, Langwater Eldorado, Edgemoor Farm; 2, Florham Victor, Edgemoor Farm; 3, Wasaca of Bella Vista, Henderson. Junior Bull Calf: 1, Edgemoor Farm; 2, Escalon Fairy Boy, Humphrey; 3, Pretty Polly of Revada, Nixon; 4, Dorothy Knight of Revada, Nixon. Cows, 4 years or over: 1, Imp. Itchen Wood Sorrel, Edgemoor Farm, Santee; 2, Imp. Clatford Bay of the Mill, Nixon; 3, Florham Dame, Edgemoor Farm; 4, Imp. Morland-Amber, Nixon. Three years and under four: 1, Imp. Donnington Goldie 5th, Edgemoor Farm; 2, Imp. Durrington Souffle, Nixon; 3, Marguerite of Pine Hurst 2nd, Edgemoor Farm. Two years and under three: 1, Caprice of Edgemoor, Edgemoor Farm; 2, Imp. Hayes Princess Mary, Edgemoor Farm; 3, Imp. Golden Rose 111 of Le Briquet, Nixon; 4, Henrietta of Mayhews, Humphrey. Senior Yearling Heifer: 1, Imp. Violet of Caches Farm, Nixon; 2, Sweetheart of Edgemoor, Edgemoor Farm; 3, Grapewild Farm Lassie, Humphrey; 4, Calla Grove Buttercup, Calla Grove Farm. Junior Yearling Heifer: 1, Jane of Amphill 14th, Nixon; 2, King's Darling of Edgemoor, Edgemoor Farm; 3, Musetta of Bella Vista, Henderson; 4,

Itchen May Rose of Edgemoor, Edgemoor Farm; Senior Heifer Calf: 1, Renown of Edgemoor, Edgemoor Farm; 2, Escalon Thorne, Humphrey; 3, Carmen Cita of Edgemoor, Edgemoor Farm; 4, Kitchener's Rosette, Henderson. Junior Heifer Calf: 1, May Maiden of Edgemoor, Edgemoor Farm; 2, Odette of Edgemoor, Edgemoor Farm; 3, Escalon Maid, Humphrey; 4, Wickham Hope of Revada, Nixon. Cow having official yearly record (conformation and record to count): 1, Imp. Itchen Wood Sorrel, Conformation 96, Production 9.81, total 105.81, Edgemoor Farm; 2, Ultra Deanie, Conformation 90, Production 8.06, total 98.06, Edgemoor Farm; 3, Florham Dame, Conformation 85, Production 5.0, total 90.0, Edgemoor Farm. Senior Champion Bull: Imp. Itchen May King, Edgemoor Farm. Junior Champion Bull: Imp. Ricardo of Edgemoor, Nixon. Senior Champion Cow: Imp. Itchen Wood Sorrel, Edgemoor Farm. Junior Champion Cow: Renown of Edgemoor, Edgemoor Farm. Grand Champion Bull: Imp. Itchen May King, Edgemoor Farm. Reserve Grand Champion Bull: Imp. Ricardo of Edgemoor, Nixon. Grand Champion Cow: Imp. Itchen Wood Sorrel, Edgemoor Farm. Reserve Grand Champion Cow: Renown of Edgemoor, Edgemoor Farm. Aged Herd: 1, Imp. Itchen May King, Imp. Itchen Wood Sorrel, Caprice of Edgemoor, Sweetheart of Edgemoor, Renown of Edgemoor, Edgemoor Farm; 2, Dairy Maid's Nonpareil of Iowa, Florham Dame, Imp. Hayes Princess Mary, King's Darling of Edgemoor, Merry Maiden of Edgemoor, Edgemoor Farm; 3, Robert Secret, Imp. Imp. Durrington Souffle, Imp. Golden Rose 3d of Le Briquet, Jane of Amphill 14th, Pretty Polly of Revada, Nixon. Breeder's Young Herd: 1, Langwater Eldorado, King's Darling of Edgemoor, Itchen May Rose of Edgemoor, Renown of Edgemoor, Merry Maiden of Edgemoor, Edgemoor Farm; 2, Bullion of Edgemoor, Grapewild Farm Lassie, Mayhews Sally, Escalon Thorne, Escalon Wally, Edgemoor Farm. Calf Herd: 1, Criterion of Edgemoor, Carmen City of Edgemoor, Renown of Edgemoor, Odette of Edgemoor, Merry Maiden of Edgemoor, Edgemoor Farm; 2, Escalon Fairy Boy, Escalon Thorne, Escalon Wally, Escalon Maid, Escalon Princess, Humphrey. Get of Sire: 1, Get of Ne Plus Ultra, Edgemoor Farm; 2, Get of Itchen May King, Edgemoor Farm; 3, Get of Don Adonis of Linda Vista, Humphrey. Produce of Dam: 1, Produce of Ravenscraft's Pansy, Edgemoor Farm; 2, Produce of Caprice of Hadon, Edgemoor Farm.

Jerseys.—Bull, three years old or over: 1, Altama Interest, Guy H. Miller, Modesto; 2, Alva Lady's La Foss Boy, S. F. Williams, Chico; 3, Undulatta Prince, C. P. Hembree, Monmouth, Ore.; 4, Borello's Golden Laddie, N. H. Locke, Lockeford. Two years and under three: 1, Roxy's Rochette Noble, Hembree; 2, Lilly Pogis King of L. Locke; 3, Financial King of L. Locke; 4, Sans Alo of C. V. S. P. Kelly, Ferndale. Senior Yearling Bull: 1, Golden Maidkin's Boy, Williams; 2, Deneen's King of L. Locke; 3, Lemola's Valet of L. Locke; 4, Raleigh's Ethel's Fairy Boy, T. B. Purvine, Petaluma. Junior Yearling Bull: 1, Dairy's Maid Prince, Hembree; 2, Foxy Blondy's Valet of L. Locke; 3, Fresno Lamola's King of L. Locke; 4, La Gordon Boy, Williams. Senior Bull Calf: 1, Fanny's Eminent Jolly, Miller; 2, Norma's Valet of L. Locke; 3, Fair Acres Union Lad, J. B. Stump & Son, Monmouth, Ore.; 4, Wild Rose's Valet of L. Locke. Junior Bull Calf: 1, Jap's Nora's Owl, University; 2, Raleigh's Fairy Boy Earl, T. B. Purvine; 3, Juanita's Interested Fox, Miller; 4, Mermaid's Fern 2d's Owl, University Farm. Cows, four years old or over: 1, Imp. Brilliant Spray, Hembree; 2, Juanita of Venadera, Miller; 3, Wanda of Venadera, Miller; 4, Valet's Brighteyes of L. Locke. Three years and under four: 1, Valet's Villet of L. Locke; 2, Noble Peers Jewel, Hembree; 3, Valet's Rhyme of L. Locke; 4, Sweet Tips, J. B. & J. E. Thorp, Stockton. Two years and under three: 1, Hulda Reusser, Williams; 2, King's Midget of L. Locke; 3, Ramona of Venadera, Miller; 4, Pearly Exile's Coomassie, Kelly. Senior Yearling Heifer: 1, Pauline of Fair Acres, Stump & Son; 2, Nonas Star of Fair Acres, Stump & Son; 3, Cvgn of Venadera, Locke; 4, Clover View Countess, Kelly. Breeder's Young Herd: 1, Deneen's King of L. Lora B of L. King's Dairy Lass of L. Valet's Foxy Blondy of L. King's Carnation of L. Locke; 2, Fanny's Eminent Jolly, Lord of Venadera, Cvgn of Venadera. Dorothy of Venadera, Angelo of Venadera, Miller; 3, Fair Acres Union Lad, Helen of Fair Acres, Ella of Fair Acres, Pauline of Fair Acres, Nuna of Fair Acres, Stump & Son. Calf herd: 1, Norma's Valet's of L. Valet's A, Lassie of L. Valet's Beauty of L. Valet's Foxy Blondy of L. King's Carnation of L. Locke; 2, Raleigh's Fairy Boy Earl, Gay Raleigh's Julia, Fairy Boy Earl, Tormentor Lucy, Fairy Boy's Onan Coomassie, Fairy Boy's Ethel Genene, Purvine. Get of Sire: 1, Get of King's Violet Imp. Locke; 2, Get of Alva Lady's La Foss Boy, Williams; 3, Get of Raleigh's Fairy Boy 4th, Purvine; 4, Get of Altama Interest, Miller. Produce of Dam: 1, Produce of Foxy Blondy of L. Locke Co.; 2, Produce of Golden Maidkin, Williams; 3, Produce of Bessie of Volden Trix, Williams; 4, Produce of Raleigh's Ethel, Purvine. Yearling Heifer: 1, Missa's Daisy of Mossdale, Thorp; 2, Lora B of L. Locke; 3, King's Dairy Lass of L. Locke; 4,

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Hanford, Cal., October 18, '16

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Choice bred A. R. O. cows in calf to 30-pound sires. Heifers out of A. R. O. cows and 30-pound sires and bred to 30-pound bulls. Young bulls from 30-pound dams and with such yearly record backing as has never before been included in a California sale. A son of Prince Gelsche Walker (the \$12,500 sire) from a 27-pound three-year-old that made 20 lbs. as a junior 2-year-old. A son of King Mead of Riverside from a State record daughter of Prince Gelsche Walker. A son of SEGIS PONTIAC DE KOL BURKE from Dottie Clyde Korndyke, 31.88 lbs., 113 lbs milk in a day, a daughter of Korndyke Queen De Kol's Prince. Two sons of Aralia De Kol Pontiac Segis out of 31 and 32-lb. daughters of De Kol Burke. A son of a 33.50-lb. cow. Two sons of 29-lb. cows. A son of a 27.50-lb. daughter of Riverside Sadie De Kol Burke. A son of a 27.58 lb. 4-year-old daughter of a 33-lb. cow. Others from 25 to 30-lb. dams, all with large yearly records.

The three nearest dams of a number of these have yearly records from 800 to 1100 lbs. butter, and along with this they have an abundance of individuality and breeding.

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The wonderful vitality which is characteristic of the purebred Holstein-Friesian breed is strikingly shown in the career of Jette's Rose's Aggie's Artis, owned by F. M. Nichols of Lyndonville, Vt. She is nearly twenty years old and in April was carrying her sixteenth calf. For fifteen gestation periods she totaled 332,500 pounds of milk, which, at 4 cents a quart, would be \$4,920, at a cost for feed for fifteen years amounting to \$1,950. She thus shows a profit of \$2,970, in addition to which must be reckoned \$6,000 worth of fine healthy calves. She has won many ribbons and prizes at fairs and has seven daughters with A. R. O. records. There's big money in the big "Black and White" Holsteins.

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Sweet Tips Blossom of Mossdale, Thorp. Senior Heifer Calf: 1, Angelo of Venadera, Miller; 2, Eulalia of Fair Acres, Stump & Son; 3, Maidikin's Lady Foss, Williams; 4, Valet's D Lassie of L. Locke. Junior Heifer Calf: 1, Valet's Foxy Blondy of L. Locke; 2, Helen of Fair Acres, Stump & Son; 3, Alta La Foss, Williams; 4, King's Carnation of L. Locke. Cow having official yearly record: 1, Wanda of Venadera, Conformation 91, Production 12.5, total 103.5, Miller; 2, Juanita of Venadera, Conformation 92, Production 8.7, total 100.7, Miller. Senior Champion Bull: 1, Altama Interest, Miller. Junior Champion Bull: Golden Maidikin's Boy, Williams. Senior Champion Cow: Imp. Brilliant Spray, Hembree. Junior Champion Cow: Valet's Foxy Blondy of L. Locke. Grand Champion Bull: Altama Interest, Miller. Reserve Grand Champion Bull: Golden Maidikin's Boy, Williams. Grand Champion Cow: Imp. Brilliant Spray, Hembree. Reserve Grand Champion Cow: Valet's Foxy Blondy of L. Locke. Aged Herd: 1, Altama Interest, Juanita of Venadera, Ramona of Venadera, Cygna of Venadera, Angelo of Venadera, Miller; 2, Bofella's Golden Laddie, Valet's Sweet Violet of L. King Midget of L. Lora B of L. Valet's Foxy Blondy of L. Locke; 3, Imp. Brilliant Spray, Nerles Alcy. Rexy's Rossett's Noble, Spray's Chlotilde Antichette, Anuletta Prince, Brilliant Spray, Hembree.

Ayrshires.—Bull, three years old or over: 1, Willowmoor Robinhood 32nd, E. B. McFarland, San Mateo. Two years and under three: Rob Roy of Steybrae, H. A. Johnston, Woodland. Senior Yearling Bull: 1, Lessnessnock 2nd Steybrae, McFarland; 2, Rob Roy 2nd of Steybrae, McFarland. Junior Yearling Bull: 1, Saladin 2nd of Steybrae, McFarland. Senior Bull Calf: 1, August Lad of Steybrae, McFarland; 2, Bangles Prince of Steybrae, McFarland; 3, Stampede Kid, Johnston. Junior Bull Calf: 1, Glen Avon of Steybrae, McFarland; 2, Major of Willow Oak, Johnston; 3, Harry Lauder, Johnston; 4, Mollie's Prince of Steybrae, McFarland. Cow, four years old or over: 1, Willowmoor Vista 4th, McFarland; 2, Fondula, Johnston; 3, Jack's Pineas, Johnston; 4, Moonstone Bess, McFarland. Three years and under four: 1, Burnside Miss Muir, McFarland; 2, Willowmoor Blossom,



Grand Champion Shorthorn Bull.
Owned by W. M. Carruthers.

McFarland. Two years and under three: 1, Burnside Mary 7th, Johnston; 2, Edgewood Lady Verbena, McFarland; 3, May Morning of Rock Ridge Farm, Johnston; 4, Springburn Nellie, McFarland. Senior Yearling Heifer: 1, Edna of Steybrae, McFarland; 2, Ravensdale Iselt, McFarland; 3, Calla Lilly of Oregon, Johnston; 4, Muna Rosewood, Johnston. Junior Yearling Heifer: 1, Florence of Willow Oak, Johnston; 2, Molly of Steybrae, McFarland; 3, Ravensdale Rebecca, McFarland. Senior Heifer Calf: 1, Lady Stair of Steybrae, McFarland; 2, Ada Rone of Willow Oak, Johnston; 3, Bess of Steybrae, McFarland. Junior Heifer Calf: 1, Alfa of Willow Oak, Johnston; 2, Kirsty of Steybrae, McFarland; 3, Blossom of Steybrae, McFarland; 4, Ann of Willow Oak, Johnston. Cow having official yearly record: 1, Willowmoor Vista 4th, McFarland. Senior Champion Bull: Willowmoor Robinhood 32d, McFarland. Junior Champion Bull: Lessnessnock 2d Steybrae, McFarland. Senior Champion Cow: Willowmoor Vista 4th, McFarland. Junior Champion Cow: Edna of Steybrae, McFarland. Grand Champion Bull: Willowmoor Robinhood 32d, McFarland. Reserve Grand Champion Bull: Lessnessnock 2d Steybrae, McFarland. Grand Champion Cow: Willowmoor Vista 4th, McFarland. Reserve Grand Champion Cow: Edna of Steybrae, McFarland. Aged Herd: 1, Willowmoor Robinhood 32d, Willowmoor Vista 4th, Edgewood Lady Verbena, Edna of Steybrae, Lady Stair of Steybrae, McFarland; 2, Rob Roy of Steybrae, Fondula, Burnside Mary 7th, Florence of Willow Oak, Alfa of Willow Oak, Johnston. Breeder's Young Herd: 1, Lessnessnock 2d of Steybrae, Edna of Steybrae, Molly of Steybrae, Bess of Steybrae, Rose of Steybrae, McFarland. Calf Herd: 1, Blossom of Steybrae, Rose of Steybrae, Bess of Steybrae, Anita of Steybrae, McFarland. Get of Sire: 1, Get of Springbrook Rob Roy, McFarland. Produce of Dam: 1, Produce of Edna of Kelso, McFarland; 2, Produce of Mollie of Whitfield, McFarland.

Five Days' Butter Fat Production Contest.—Cows 4 years or over: 1, Beryl Clothilde Hengerveld 2nd, F. Stenze, San Lorenzo; 2, De Kol of Valley Mead 11, A. W. Morris & Sons, Woodland; 3, Miss Blaney, Morris & Sons; 4, Willowmoor Vista 4th, E. B. McFarland, San Mateo. Five Days' Butter Production Contest, cows 30 months and under 4 years: 1, Sissy Ca-

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nary Victoria, J. Pelanda, Modesto; 2, Estudillo Marie Clothilde De Will, Stenzel; 3, Stanislaus Queen Segis, Frank Hatch, Modesto; 4, Contenta Pontiac Burke, Morris & Sons, Five Days' Butter Fat Production Contest, under thirty months: 1, Lora of Venadera, Guy H. Miller, Modesto; 2, Cloverview Countess, S. P. Kelly, Ferndale; 3, Ramona of Venadera, Miller, Modesto; 4, Pearly Exile's Coomassie, Kelly.

Dairy Shorthorns.—All awards to Alexander and Kellogg, Suisun, except Reserve Grand Champion Cow and 1st in Produce of Dam, which were won by G. A. Murphy, Perkins.

Dutch Belted.—All entries and all awards to U. G. and Jennie Strader, Ceres.

BEEF CATTLE.

Shorthorn.—Bulls, three years or over: 1, Gibson's Goods, T. B. Gibson Estate, Woodland. Bulls, 2 years old and under three: 1, Roselawn's Choice, Jack London, Glen Ellen; 2, Jewel Goods, H. L. & G. H. Murphy, Perkins. Senior Yearling Bulls: 1, Count Glory, W. H. Carruthers, Mayfield; 2, Pacheco Lad 58, Pacheco Cattle Co., Hollister; 3, Radium Victor, Murphy. Junior Yearling Bulls: 1, Ringleader's Crown, Gibson Estate; 2, Reliable, Murphy; 3, Prince Albert, Murphy. Senior Bull Calf: 1, Pacheco Lad 31st, Pacheco Cattle Co.; 2, Hallwood Flash, Barco Ranch; 3, Hallwood Villager, Barco Ranch; 4, Ringleader's Stamp, Gibson Estate; 5, Hopland Mariner, Hopland Stock Farm. Junior Bull Calf: 1, Pacheco Lad 86, Pacheco Cattle Co.; 2, Pacheco Lad 87, Pacheco Cattle Co.; 3, Hopland Tule, Hopland Stock Farm; 4, Ringleader's King, Gibson Estate; 5, Hopland Lord, Hopland Stock Farm. Cow, three years or over with suckling calf: 1, Dorris Dale, Pacheco Cattle Co.; 2, Snow Girl's Queen, Hopland



Grand Champion Yorkshire Boar, Owned by Riverina Farms.

3, Get of Right Choice, Hopland Stock Farm. Produce of Dam: 1, Produce of Diana Duchess 4th, Hopland Stock Farm; 2, Produce of Gondomars Princess, Pacheco Cattle Co.

Herefords.—All entries and awards, University of California.

Red Polled.—All entries and awards, R. R. Cartwright, Peters.

HOGS.

Poland-Chinas.—Champion Boar: Chief Victor, M. Bassett, Hanford. Champion Boar, bred by exhibitor: Chief Victor, Bassett. Boar, two years old or over: 1, Model Major, H. I. Marsh, Modesto; 2, I. B. A. Wonder, W. A. Young, Lodi; 3, J. O. Orange, W. H. Browning, Woodland; 4, Warrior Kings, T. D. Ross, Hanford; 5, Chief Wonder, J. McKindly, Acampo. Senior Yearling: 1, Chief Victor, M. Bassett; 2, Blue Valley Tecumseh, W. K. Ekholm, Escalon; 3, Panama Black, Ross, Hanford; 4, J. B. Wonder, McKindly, Acampo. Junior Yearling: 1, Gold Boy, Bassett; 2, Golden Lad, Bassett; 3, Royal Kid, Ross; 4, M's Prospect, Geo.



Grand Champion Poland-China Sow, Owned by M. Bassett.

Stock Farm; 3, Roselawn 55th, Gibson Estate. Cow two years and under three: 1, Hopland Lass, Hopland Stock Farm; 2, Ruby Queen, Carruthers; 3, Hopland Gay Lass, Hopland Stock Farm. Senior Yearling Heifer: 1, Hopland Duchess, Hopland Stock Farm; 2, Hopland Beauty, Hopland Stock Farm; 3, Rookwood Bessie, Carruthers. Junior Yearling Heifer: 1, Pacheco Lass 83, Pacheco Cattle Co.; 2, Golden Queen, Carruthers; 3, Pacheco Lass 80th, Pacheco Cattle Co. Senior Calf: 1, Barco Duchess, Barco Ranch Co.; 2, Hopland Mirth, Hopland Stock Farm; 3, Hopland Diana, Hopland Stock Farm; 4, Pacheco Lass 85, Pacheco Cattle Co.; 5, Orange Jasmine, Barco Ranch Co. Junior Calf: 1, Ringleader's Ruby, Gibson Estate; 2, Pacheco Lass 89th, Pacheco Cattle Co. Senior Champion Bull, Roselawn Choice, Jack London. Reserve Grand Champion Bull: Gibson's Goods, Gibson Estate. Aged Heifer: Gibson's Goods, Autumn Flower, Ringleader's Josie, Ringleader's Ruby, Gibson Estate. Breeder's Young Heifer: 1, Pacheco Lad 81st, Pacheco Lass 80th, Pacheco Lass 83rd, Pacheco Lass 85th, Pacheco Lass 89th, Pacheco Cattle Co.; 2, Hopland Mariner, Hopland Duchess, Hopland Beauty, Hopland Diana, Hopland Mirth, Hopland Stock Farm; 3, Ringleader's Crown, Ringleader's Josie, Ringleader's May, Ringleader's Ann, Ringleader's Ruby, Gibson Estate. Calf Heifer: 1, Pacheco Lad 81st, Pacheco Lass 85th, Pacheco Lass 89th, Pacheco Cattle Co.; 2, Ringleader's Stamp, Ringleader's Ann, Ringleader's Ruby, Gibson Estate; 3, Hopland Tule, Hopland Mirth, Hopland Diana, Hopland Stock Farm. Get of Sire: 1, Get of Count Avon, Count Glory, Carruthers; 2, Pacheco Lad 58th, Pacheco Cattle Co.;

V. Beckman, Lodi; 5, Huge Wonder, A. M. Henry, Farmington. Senior Boar Pig: 1, Surprise, Bassett; 2, Wonder's Blue Valley, N. Hauck, Alton; 3, Whirlwind, Beckman; 4, Silver Prince, Ross; 5, A Wonder, J. A. Clark, Lodi. Junior Boar Pig: 1, C's Charmer, Beckman; 2, Chief Spell, Bassett; 3, Lodi Chief, Beckman; 4, Chief Style, Bassett; 5, Big Bone Lad, Marsh. Sow, 2 years old or over: 1, Miss Beauty, Bassett; 2, Fair Prince, Wakefield, Acampo; 3, Lady Louise 2nd, Young; 4, Silver Ruth, Ross; 5, Show Girl, Henry. Senior Yearling: 1, California Sunlight 3rd, University Farm, Davis; 2, Dewdrop, Bassett; 3, California Susan 2nd, University Farm. Junior Yearling: 1, Gold Drop, Bassett; 2, Priceless California, University Farm; 3, Ambition, Bassett; 4, Miss Futurity, Henry, Sow. Senior Pig: 1, Black Beauty 2nd, Bassett; 2, Wonderful 2nd, Bassett; 3, Perfection Maid, Deacon Ranch, Davis; 4, Darkness H. Gosling, Napa; 5, Smooth Sunshine, Beckman. Sow, Junior Pig: 1, Good Style, Bassett; 2, Lakeside Belle, Beckman; 3, Wonderful Style, Bassett; 4, Miss Long Model 2nd, Hauck; 5, Miss Long Model, Hauck. Boar and 3 sows over a year: 1, Chief Victor, Miss Beauty, Gold Drop, Ambition, Bassett; 2, I. B. A. Wonder, Fair Corrector, Lady Louise 2nd, Royal Maid, Young; 3, Big Bone Prince, Big Beauty, Show Girl, Nelson Wonder A 2nd, Henry. Boar and 3 sows under 1 year: 1, Surprise, Black Beauty, Wonderful 2nd, Black Picture, Bassett; 2, Silver Chief, Silver Bell, Silver Violet, Silver Jane, Ross; 3, Whirlwind, Fancy Sunshine, Smooth Sunshine, Oola Sunshine, Beckman. Boar and 3 sows over 1 year bred by exhibitor: 1, Chief Victor, Miss Beauty, Gold Drop, Ambition, Bassett. Boar and 3 sows under 1 year bred by exhibitor: 1, Surprise, Black Beauty 2nd, Wonderful 2nd, Black Picture, Bassett; 2, Silver Chief, Silver Belle, Silver Violet, Silver Jane, Ross; 3, Whirlwind, Fancy Sunshine, Smooth Sunshine, Oola Sunshine, Beckman. Four swine, get of same boar, bred by exhibitor: 1, Get of Chief Picture 3rd, Bassett; 2, Get of Cal. Meddler, Beckman. Four pigs, any age, produce of same sow, bred by exhibitor: 1, Produce of Black Beauty, Bassett; 2, Produce of Lakeside Panama, Beckman. Champion Sow: Miss Beauty, Bassett. Champion Sow, bred by exhibitor, Miss Beauty, Bassett. Barrow, any age: 1, Bassett; 2, Bassett. Pen (3) barrows, any age: Bassett.

Berkshires.—Boar, two years old or over: 1, Rival's Robin 2nd, H. L. & E. H. Murphy, Perkins; 2, Iowana Rival Majestic, Hopland Stock Farm, Hopland; 3, Baron Longfellow 2nd Combination, S. C. Beeman, Woodland; 4,



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Yountville,

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Just because you can't work outdoors, the day need not be wasted. Use it for the job that keeps glanders, foot-and-mouth, anthrax and other fatal diseases out of your herd. It may be the most profitable day in the year. Disease, once started, may wipe out a lifetime's work.

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to prevent disease and kill lice, mites, ticks, fly-eggs, etc. Comes in powder form. Put on with brush or sprayer as soon as mixed with cold water. Will not spoil by standing. Order some now and have it handy. Your dealer has it.

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New Duroc Record

103 Head of Registered Durocs 103

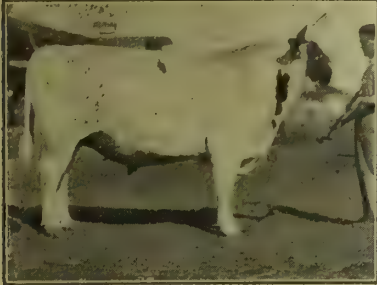
Sold to B. F. Graham of Colton, is we believe, the largest sale to one firm ever made in California.

THAT'S NOT ALL.

Since January 20, 1916, we have sold 69 Registered Durocs to other breeders of the State in smaller lots. We are the largest breeders in the State and have plenty more Durocs left for sale just as good. Visit our herds at Holtville and Devore and see the reason for the popularity of these easy-feeding prolific Durocs. Address all correspondence to Devore, San Bernardino Co., Calif.

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Grand Champion Bull.
WON AT STATE FAIR:
Grand Champion
Bull and Cow
and
Four Other Championships.
Sixteen Firsts
and
Fourteen Other Awards.
Both Sexes for Sale
Any age—any number.
E. B. McFARLAND
Proprietor
SAN MATEO, CAL

WINONA BERKSHIRES WON 18 PRIZES At SACRAMENTO STATE FAIR Including 4 Firsts and 2 Championships



Winona Lee Champion 2nd,
First Yearling Boar and Cham-
pion Boar, bred by Exhibitor
at Sacramento.
Get of Herd Boar
LAUREL CHAMPION
Won more than twice as
many prizes at this Show
as the get of any other
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CHAMPION FOR SALE.
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Charmers Duke 77th, Frank Brush
Santa Rosa; 5, Improver B, Oak Grove
Dairy Farm, Woodland. Senior Year-
ling Boar: 1, Majestic's King 6th, Per-
kins Land Co., Sacramento; 2, Solano
Emblem, A. B. Humphrey, Escalon; 3,
Bel Dayo, S. Day, Sacramento; 4,
Champion's Prince 3rd, Murphy. Jun-
ior Yearling Boar: 1, Winona Lee
Champion 2nd, F. R. Steel, Grants Pass,
Oregon; 2, Premier Leader, Geo. M.
Yoerk & Son, Modesto; 3, Winona
Royal Champion 2nd, Ray C. Hannan,
Corning; 4, Winona Violet Champion,
Steel; 5, Tehama Chief, A. L. Stephen-
son, Los Molinos. Senior Pig: 1,
Fashion Longfellow 30th, Humphrey;
2, Loyal Duke 6th, York & Son; 3,
Ames Rival 131st, Hollow Hill Farm,
Colton; 4, Fashion Longfellow 25th,
Humphrey; 5, Premier Villa, D. War-
nock, Dayton, O. Junior Pig: 1, Win-
ona Royal Champion 5th, Arlington
M. Smith, Visalla; 2, One Entry, Oak
Grove Dairy Farm; 3, Glenn's Duke
20th, Beeman, Woodland; 4, One Entry,
H. J. Hammond, Sacramento; 5, Winona
Lee Champion 5th, Steel. Sow, two
years or over: 1, Grand Lady May-
hews 4th, Humphrey; 2, Clementina,
Humphrey; 3, Peggy Queen 7th, Oak
Grove Dairy Farm; 4, Fashion Long-
fellow Princess, A. B. Humphrey; 5,
Miss Los Molinos 2nd, Hannan. Senior
Yearling Sow: 1, Grand Bernice, Hum-
phrey; 2, Mayhews Queen 3rd, Hum-
phrey; 3, Winona Mistress Piece 7th,
Steel; 4, Riverby Princess 2nd, Brush;
5, Silberfa Julia 23rd, Hollow Hill
Farm. Junior Yearling Sow: 1, Escalon
Belle, Humphrey; 2, Winona Laurel
Violet 2nd, Steel; 3, P. P. I. E. Lady
3rd, James Mills Orchards Corpora-
tion, Hamilton; 4, Bradley's Platts-



Grand Champion O. I. C. Sow,
Owned by C. B. Cunningham.

burg, Brush; 5, Winona Royal Laurel
2nd, Steel. Senior Sow Pig: 1, Forest
Grove Laurel 8th, Mills Orchards Cor-
poration; 2, Escalon Polly, Humphrey;
3, Escalon Fashion 2nd, Humphrey; 4,
Forest Grove Laurel 7th, Mills Or-
chards Corporation; 5, Leddy Rose,
Yoerk & Son. Junior Sow Pig: 1,
Winona Artful Laurel 8th, Steel; 2,
One Entry, Humphrey; 3, Winona Mas-
terpiece Laurel, Steel; 4, One Entry,
Murphy; 5, One Entry, Murphy. Boar
and 3 sows over one year: 1, Solano
Emblem, Grand Lady Mayhews 4th,
Grand Bernice, Escalon Belle, Hum-
phrey; 2, Winona Lee Laurel Royal
Laurel 2nd, Winona Laurel Violet 2nd,
Winona Mistress Piece 7th, Steel; 3,
Charmers Duke 77th, Riverby Princess
3rd, Riverby Princess 2nd, Miss Platts-
burg 4th, Brush; 4, Fashion Longfellow
5th, Fashion Longfellow Princess, May-
hews Queen 3rd, Escalon Princess,
Humphrey. Boar and three sows un-
der one year: 1, Fashion Longfellow
30th, Escalon Polly, Escalon Fashion;
Escalon Fashion 2nd, Humphrey; 2,
Ames Rival 119th, Forest Grove Laurel
8th, Forest Grove Laurel 7th, Forest
Grove Duchess 9th, Carruthers; 3, Wi-
nona Artful Laurel 8th; Winona Royal
Laurel 4th; Winona Lee Champion
5th; Masterpiece Laurel, Steel; 4,
Loyal Duke 6th, Loyal Belle 3rd, Loyal
Belle 4th, Loyal Belle 6th, Yoerk &
Son; 5, Premier Villa, Denver Bess
1st; Denver Bess 2nd; Lady D 5th
Choice, Warnock. Boar and 3 sows
over 1 year, bred by exhibitor: 1,
Solano Emblem, Grand Lady May-
hews 4th, Grand Bernice, Escalon
Belle, Humphrey; 2, Charmer's Duke
77th, Riverby Princess 3rd, Riverby
Princess 2nd, Miss Plattsburg A 4th,
Brush. Boar and 3 sows under 1 year,
bred by exhibitor: 1, Fashion Long-
fellow 30th, Escalon Polly, Escalon
Fashion, Escalon Fashion 2nd, Hum-
phrey; 2, Winona Artful Laurel 8th,
Winona Royal Laurel 4th, Winona
Lee Champion 5th, Winona Mas-
terpiece Laurel, Steel; 3, Premier
Villa, Denver Bess 1st, Denver Bess
2nd; Lady D 5th Choice, Warnock. Get
of Sire, bred by exhibitor: 1, Get of
Grand Leader 2nd, Humphrey; 2, Get
of Laurels Champion, Steel; 3, Get of
Laurels Champion, Steel. Produce of
Dam: 1, Produce of Princess Royal S,
Steel; 2, Produce of Miss Laurel 2nd,
Steel; 3, Produce of Berriton Artful
Belle, Oak Grove Dairy Farm. Cham-
pion Boar: Rival's Robin 2nd, Murphy.
Reserve Champion Boar: Iowana Rival
Majestic, Hopland Stock Farm. Cham-
pion Sow: Grand Lady Mayhews 4th,
Humphrey. Reserve Champion Sow:
Forest Grove Laurel 8th, Mills Orchard
Corporation. Champion Boar bred by
exhibitor: Winona Lee Champion 2nd,
Steel. Champion Sow bred by ex-
hibitor: Grand Lady Mayhews 4th,
Humphrey. Berkshire Fat Barrows,
any age of the Breed, all entries and
all awards, Humphrey.

Hampshires.—Boar, two years or
over: 1, Goldmine, F. V. Gordon, Los
Angeles; 2, Berkeley King, Dr. J. W.
Henderson, Berkeley; 3, Palo Verde
Bruno, H. E. Richardson, Chico; 4,
America, Henderson. Senior Yearling
Boar: 1, Harvester, Gordon. Junior

STENZEL'S HOLSTEINS Champion Butter Fat Producers WON FIRST AND SECOND IN THE FIVE-DAY BUTTER- FAT PRODUCTION CONTEST AT THE STATE FAIR.



Beryl Clothilde Hengerveld.

Beryl Clothilde Hengerveld's
record for five days was:

351.9 lbs. Milk
21.11 " Butter
Test 4.7%

This beat by far all previous
records made on State Fair
Grounds.

Clothilde Pontiac Creamelle, recently at 2 yrs. 1 mo., made an
official 7-day record of 22.52 lbs. butter, 391.7 lbs. milk, test
4.72%, making her **CALIFORNIA CHAMPION TWO-YEAR-
OLD.**

GOOD ENOUGH FOR ANY HERD.

This youngster is half brother
of the California Champion Two-
Year-Old, both being sired by
Dutchland Pietertje Creamelle.
His dam is granddaughter of
Pontiac Korndyke, the world's
greatest Holstein sire, and she
has a record of 28.17 lbs. butter,
456 lbs. milk, test 4.9%. This
bull is perfect in type, 50% white,
and just ready for service.



Aggie Grace Pontiac Creamelle.
Born Apr. 22, 1915.

A few other choice young bulls with butterfat breeding
behind them.

F. STENZEL, Breeder of High Test Holsteins
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THE SUPERIOR QUALITY OF THE HAMPSHIRE HOG
is rapidly being recognized. The Hampshire Exhibit at the
State Fair was excellent, and, as usual,
THE BELLA VISTA HERD helped make it a success, winning
23 prizes with 22 entries.

Specially this herd was awarded:

FIRST AND GRAND CHAMPION for best female Hampshire
shown.

CHAMPION BOAR, any age, bred by exhibitor.

CHAMPION SOW, any age, bred by exhibitor.

GOLD MEDAL, 4 swine, get of same boar, Berkeley King.

GOLD MEDAL, 4 swine, get of same sow, Showers.

SPECIAL SILVER TROPHY, awarded by American Hamp-
shire Association for 4 pigs under 6 months, bred and ex-
hibited by a resident of the State of California.

Some specially good gilts for sale, bred to Evans' Bond, the
best bred boar on the Coast; his sire, Sir Messenger Boy; dam,
Nora Duchess.

Some fine young boars for service or weanlings, \$20 up.

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Of Golden Fern's Lad, Flying Fox, Interested Prince, St. Lambert and
Golden Lad Blood.

Mature cows in this herd have official records from 400 to 500 pounds
butter fat in one year.

No heifer in the herd has an official record below 300 pounds fat in one year.

CHOICE YOUNG STOCK FOR SALE

CORRESPONDENCE INVITED.

W. J. HACKETT Ceres, Cal.

Yearling Boar: 1, Langdon's Choice, Gordon; 2, Riverside Lad, Gordon; 3, Flossie's Prince, Henderson. Senior Boar Pig: 1, California Lad; 2, Crown Prince; 3, Fair Promise, Gordon. Junior Boar Pig: 1, Montar; 2, Munson, Henderson; 3, Colonel Bond; 4, Major White, Richardson; 5, Imperial King, Gordon. Sow, two years or over: 1, Tahoe, Henderson; 2, Compeer's Decent 11; 3, Lady Favorite, Gordon; 4, Sunshine, Henderson. Senior Yearling Sow: 1, Eileen, Gordon; 2, Berkeley 1 Belle, Henderson. Junior Yearling Sow: 1, Lady Selma, Gordon; 2, Fionnie, Henderson; 3, Andrey, Gordon; 4, American Queen, Henderson. Senior Sow Pig: 1, Tahoe's Lilly, Henderson; 2, Belle of Butte; 3, Chico Lady, Richardson; 4, Miss Langdon; 5, Nellie Gordon. Junior Sow Pig: 1, Goldie 11; 2, Golden Compeer, Gordon; 3, Metz; 4, Queen's Choice, Henderson; 5, Nordin, Richardson. Boar and 3 sows over 1 year: 1, Goldmine, Lady Favorite, Compeer Decent 11, Lady Selma, Gordon; 2, Berkeley King, Tahoe, Sonie, Showers, Henderson. Boar and 3 sows under 1 year: 1, Riverside Lad, Miss Langdon, Nellie, Miss Langdon 11, Gordon; 2, Metz, Metawan, Queen's Choice, Henderson. Get of Sire, bred by exhibitor: 1, Get of Berkeley King, Henderson; 2, Get of Palo Verde Bruno, Richardson. Produce of Dam, bred by exhibitor: 1, Produce of Showers, Henderson; 2, Produce of Palo Verde Bruno, Richardson. Champion Boar, any age: Harvester, Gordon. Champion Boar, any age, bred by exhibitor: Crown Prince, Henderson. Champion Sow, any age, bred by exhibitor: Tahoe's Lilly, Henderson.

Duroc-Jerseys—Boar, two years or over: 1, Daggs Good E. Nuff, J. P. Daggs, Modesto; 2, Colonel Keep On, A. C. Eakle, Jr., Woodland; 3, Fredonia Prince, Perkins Co., Perkins; 4, Omar of Mossdale, Mossdale Farm, Stockton. Senior Yearling Boar: 1, California's Defender, J. K. Fraser, Denair; 2, River Bend High Model, W. W. Everett, St. Helena; 3, Enterprise Colonel, Eakle; 4, Tulare Boy, J. P. Walker, Visalia; 5, E. N.'s Colonel, Walker. Junior Yearling Boar: 1, Crimson Monarch 2nd, J. M. DeVilbiss, Patterson; 2, Viceroy's 13, Maurice Rucker, Fair



Grand Champion Duroc Boar, Owned by John P. Daggs.

E. Nuff, Colonel's Queen Dagman, Toodles E. Nuff, Grand Lady 29th, Daggs; 3, California Defender, Crown Princess, Molly Wonder, Lady Defender, Fraser. Boar and 3 sows under 1 year: 1, H. S. Royal Colonel, H. S. Elberta 1st, H. S. Elberta 2nd, H. S. Queen, Smith; 2, Model King of U. F., Model Queen of U. F., University Farm; 3, Buster J., Cora E., Marian E., Margaret E., Lamb. Boar and 3 sows over 1 year, bred by exhibitor: 1, California Defender, Crown Princess, Molly Wonder, Lady Defender, Fraser; 2, Omar of Mossdale, Lass of Mossdale, Vallie of Mossdale, Miss Mossdale, Mossdale Farm. Boar and 3 sows under 1 year, bred by exhibitor: 1, Taxpayer 13th Tsarvitch 2d, Taxpayer 13 Czarina 1st, Taxpayer 13 2d, Taxpayer 13 Czarina 3rd, Rucker; 2, Model Colonel of U. F., Model Queen of U. F., Model Queen of U. F. 2nd, University Aneeda B., University Farm; 3, Buster J., Marion, Cora E., Margaret E., Lamb; 4, Collins' Crimson Wonder, Golden Lass 2nd, Crimson May, One entry, Collins. Get of Sire: 1, Get of Taxpayer 13, Rucker; 2, Get of Slocum's Crimson Wonder, Fraser. Produce of Dam, bred by exhibitor: 1, California Defender, Fraser; 2, Produce of Gypsy Queen, Rucker. Champion Boar: Daggs' Good E. Nuff, Daggs. Champion Sow: Queen is Rite, Rucker. Champion Boar, bred by ex-

RINCON FARM BERKSHIRES

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Riverby Princess, Grand Champion P. P. I. E.

We are offering a number of fine bred Sows and young Boars, ready for Service, at right prices.

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F. A. BRUSH, Prop.

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Grand Champion Shropshire Ewe, Owned by Bishop Bros.



Grand Champion Hampshire Ram, Owned by Kaupke Bros.

Oaks; 3, Crimson Wonder of California, L. D. Collins, Denair; 4, Jay's Golden Model, H. P. Slocum & Son, Willows; 5, Brookwater Fashion 2nd, Mossdale Farm. Senior Boar Pig: 1, Bondholder's 13, Rucker & Coppin; 2, H. S. Royal Colonel, Haden Smith, Woodland; 3, Happy Henie, Mossdale Farm; 4, Collins' Crimson Wonder, Collins; 5, Edward, Walker. Junior Boar Pig: 1, Golden Haven's Chief, E. K. Carnes, Fair Oaks; 2, Prince Colonel, Fraser; 3, Taxpayer's 13 Tsarvitch, Rucker; 4, Native Son, Mossdale Farm; 5, River Bend Brave, Everett. Sow, two years or over: 1, Monarch's Beauty; 2, Cedarvale Queen XXV, Rucker; 3, Long Wonder Queen, Mossdale Farm; 4, Gladys XI, Fraser; 5, Lamb's American Beauty, Elmer Lamb, Caras. Senior Yearling Sow: 1, Colonel's Queen Dagman, Daggs; 2, Elberta Vill, Slocum; 3, Wonder Gladys, Carnes; 4, Crown Princess, Fraser; 5, A Model, Henderson Co., Sacramento. Junior Yearling Sow: 1, Queen is Rite, Rucker; 2, Grand Lady 29th, Daggs; 3, Madam Butterfly, Collins; 4, Toodles Enough, Daggs; 5, Betty A 11, Lamb. Senior Sow Pig: 1, H. S. Queen, Smith; 2, Mandy 13 Taxi Girl 1st, Rucker; 3, Goldie Lass 2nd, Collins; 4, Brookwater Lass 11, Mossdale Farm; 5, Marion E. Lamb, Junior Sow Pig: 1, Taxpayer 13 Czarina 1st, Rucker; 2, Viola Good E. Nuff, Daggs; 3, University Aneeda B., University Farm; 4, Golden Haven's Maid; 5, Golden Haven's Lassie, Carnes. Boar and 3 sows over 1 year: 1, Viceroy's 13th, Cedarville Queen 25th, Monarch Beauty, Unnamed sow, Rucker; 2, Daggs Good

hibitor: Chief Defender, Fraser, Champion Sow, bred by exhibitor: Colonel's Queen Dagman, Daggs. Duroc Jersey Barrow, any age: 1, Jumbo Boy, Fraser; 2, Jack, Eakle, Barrows: All entries and all awards, Fraser.

Chester Whites—Boar, two years old or over: 1, Missouri Lad, Cunningham; 2, Pattern Maker's Marvel, Henderson Co. Junior Yearling Boar: 1, California Captor, Locke Co.; 2, California Prince 2nd, Cunningham. Senior Boar Pig: 1, Billiken, Cunningham. Junior Boar Pig: 1, California Silver Prince, University Farm; 2, Chief Modeler; 3, Hopeful, Cunningham; 4, Lockeford Prince, Locke Co.; 5, Elmo's Medium, Henderson Co. Sow, two years or over: 1, Gussie; 2, Moon, Cunningham; 3, Himpla, Bravo. Senior Yearling Sow: 1, Wildwood Lady; 2, Webster Girl, Cunningham. Junior Yearling Sow: 1, Gem Topsy 2nd, Henderson Co.; 2, Royal Queen, Cunningham; 3, Jennie; 4, Mollie, Locke Co.; 5, Her Highness, Cunningham. Senior Sow Pig: 1, Bonnie Bell; 2, Lena, Cunningham; 3, White Moon, Bravo. Junior Sow Pig: 1, Dora, Cunningham; 2, Elmo's Medium; 3, Elmo's Medium, Henderson Co.; 4, Wonder Lass, Cunningham; 5, Lockeford Princess, Locke. Boar and 3 sows over 1 year: 1, Missouri Lad, Moon, Royal Queen, Wildwood Lady, Cunningham; 2, California Captor, Jennie, Mollie, Girtle, Locke Co.; 3, California Prince 2nd, Webster Girl, Gussie, Her Highness, Cunningham. Boar and 3 sows under 1 year: 1, Billiken, Bonnie Belle, Lena, Fru 3rd, Cunningham; 2, Chief Modeler, One entry, Prue 2nd, Star Model 2nd, Cunningham; 3, Lockeford Prince, Lockeford Princess, Lockeford Princess 2nd, Lockeford Princess 3rd, Locke Co. Boar and 3 sows under 1 year, bred by exhibitor: 1, Hopeful, Prue 1st, Prue 2nd, Star Model 2nd, Cunningham; 2, Hemholt Billy, Lucy, White Pig, Marion, H. Bravo, Metropolitan. Get of Sire: 1, Get of W. Earl, Cunningham; 2, Get of Missouri Lad, Cunningham. Produce of Dam: 1, Produce



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With our herd will be a number of young Jersey bulls, ready for service, and out of our large high-producing cows, that will be for sale.

Also, young boars of splendid growth and type.

If you need a herd sire, be sure to see this lot at your nearest fair. We are taking them there for your inspection before buying.

If more convenient, visit our ranch or write for prices and pedigrees.



Grand Champion Duroc Sow, Owned by Rucker & Coffin.

Grand Champion Berkshires and Hampshire Swine are missing in this issue because of photographic troubles. They will be found in next week's Rural Press.

of Nancy, Cunningham; 2, Produce of Mills Best, Cunningham. Champion Boar: Missouri Lad, Cunningham. Champion Sow: Bonnie Belle, Cunningham. Champion Boar, bred by exhibitor: California Silver Prince, University Farm. Champion Sow, bred by exhibitor: Doris, Cunningham. Barrow, any age: Cunningham. Barrows, pen of 3, any age: Cunningham.

SHEEP.

Rambouillet.—Ram two yrs. old or over: 1, Bullard Bros., Woodland; 2, Bullard Bros., One year and under two: 1, Bullard Bros.; 2, Bullard Bros. Under one year: 1, Bullard Bros.; 2, Bullard Bros. Ewe two years old or over: 1, Bullard Bros.; 2, Bullard Bros. One year and under two: 1, Bullard Bros. Under one year: 1, Bullard Bros.; 2, Bullard Bros. Flock, to consist of one ram, any age, two ewes 1 year and under 2, and two ewes under 1 year: 1, Bullard Bros. Pen, to consist of four lambs, either sex, bred by and owned by exhibitor: 1, Bullard Bros.

Shropshires.—Ram, two years old or over: 1, Bishop Bros., San Ramon; 2, Knollin & Finch, Soda Springs, Idaho. One year and under two: 1, Bishop Bros.; 2, Bishop Bros. Under one year: 1, Knollin & Finch; 2, Bishop Bros. Ewe two years old or over: 1, Bishop Bros.; 2, Knollin & Finch. One year and under two: 1, Bishop Bros.; 2, Knollin & Finch. Under one year: 1, Knollin & Finch; 2, Bishop Bros. Pen, to consist of four lambs, either sex, bred by and owned by exhibitor: 1st, 2nd, Bishop Bros.; 3, Knollin & Finch. American Shropshire Special, to consist of pen of three yearling ewes: 1, Bishop Bros.; 2, Knollin & Finch; 3, Bishop Bros.

Hampshires.—Ram, two years old or over: Kaupke Bros., Woodland. One year and under two: 1, Knollin & Finch; 2, Knollin & Finch. Under one year: 1, Kaupke Bros.; 2, Kaupke Bros. Ewe two years old or over: 1, Kaupke Bros.; 2, Kaupke Bros. Under one year: 1, Kaupke Bros.; 2, Kaupke Bros. Pen, to consist of four lambs, either sex, bred by and owned by the exhibitor: 1, Kaupke Bros. Champion Ram: Anoka 70. Knollin & Finch. Champion Ewe, Kaupke 51, Kaupke Bros.

Middle Wool Breeds.—Wethers, 1 year and under 2: 1 and 3, Southdown, University Farm; 2, Shropshire wether, Knollin & Finch, Soda Springs, Idaho. Wether, under 1 year: 1, Southdown; 2, Shropshire, University Farm. Pen of 3 wethers, 1 year and under 2: 1, University Farm; 2, Knollin & Finch. Pen of 3 wethers, under 1 year: 1st, 2nd, and 3, Southdown, University Farm.

Grades and Crosses.—Wether, 1 year and under 2: 1st and 2nd, University Farm. Pen of 3 wethers, 1 year and under 2: 1st and 2nd, Southdown; 3rd, Shropshire, University Farm. Grand Champion Wether, any age or breed: Southdown, University Farm. Reserve Grand Champion Wether, any age or breed: Cotswold Shropshire, University Farm.

Middle Wool Type.—Pen of 5 ewes, 2 years old or over: 1, Bishop Bros. Pen of 5 ewes, 1 year and under 2: 1, Glide; 2 and 3, Bishop Bros. Pen of 5 ewes, under 1 year: 1 and 2, Bishop Bros.; 3, Calla Grove Farm, Manteca.

Oxfords.—Ram, under one year, Frank Hatch, Modesto. Ewe, two years old or over: Frank Hatch.

Merino Type.—Pen of three rams, 2 years old or over: 1 and 2, Bullard Bros. Pen of 3 rams, 1 year and under 2: 1, T. S. Glide; 2 and 3, Bullard. Pen of 3 rams, under 1 year: 1 and 2, Bullard. Pen of 3 ewes, 2 years old or over: 1 and 2, Bullard. Pen of 3 ewes, 2 years old or over: 1 and 2, Bullard. Pen of 3 rams, 1 year and under: 1 and 3, Glide; 2, Bullard. Pen of 3 ewes, under 1 year: 1 and 2, Bullard. Pen of 3 rams, 1 year and under: 1, Glide. Pen of 3 rams, under 1 year: 1 and 2, Bishop; 3, J. R. Bloom.

Martin Pradere, a large sheep raiser of Carson Valley, Nevada, has sold his land and sheep to E. A. Settemeyer of Gardnerville.

TEST OR PASTEURIZE?

To the Editor: If one makes application to the proper authorities to have a cow tested under the new milk law which goes into effect Oct. 1, has her tested and she does not stand the test, can her milk then be pasteurized and sold to customers? Tell me whom I must make application to to have a cow tested. —Subscriber, Loomis.

[Milk from tubercular cows may be sold if properly pasteurized, so far as the State law is concerned. But you will have to find out the regulations for pasteurized milk in the municipality where you expect to sell it. Most cities require pasteurization at specified plants. At least one will not allow milk from tubercular cows at all. Apply to State Veterinarian Chas. R. Keane, Sacramento, to have your cows tested; and you will be permitted to sell your milk until his official tester can do the work.]

WHEN TO CUT SORGHUM FOR DAIRY FEED.

To the Editor: I planted broadcast sorghum for cow feed June 24, on moist bottom land. When should this be cut to get best feeding value? W. L. B., Modesto.

[Answered by Prof. F. W. Woll, University Farm, Davis, Cal.]

[The sorghum may be cut any time after bloom, if it is to be fed green or cured for hay, and the nearer this stage of growth, the better to get the best feeding value. If left until toward maturity, a heavier yield of feed materials will be secured from the field, but the green sorghum or hay will be less palatable to stock than when it is cut earlier. If cut for the silo, the sorghum varieties are preferably left until the seed is fully matured. It will make a better quality of silage at this stage than when cut earlier, when the stalks contain considerable amounts of easily fermentable sugars which would make the silage very high in organic acids.]

TWIN HEIFERS BREED.

To the Editor: I would like to say to Jack Mounovan that his advice to A. H. H., Ukiah, to kill twin heifers is poor indeed. I had a pair of twin heifers that were as good or better milkers than others I have raised. One of them was considerably above the average. I sold them both at first calving, one for \$80.00 and the other for \$90.00.

McFarland. S. K. Remington.

The REMCO SILO

Made of Air-Dried Redwood The Standard

Mr. A. L. L. Dairyman,
Everywhere, Calif.

Dear Sir:

What would you give for Green Pasturage the year around? If you had it you'd make a lot more money, wouldn't you?

You can have it or its equivalent, **THROUGH SILAGE**, at less cost in labor and money than through natural pasturage, almost without regard to seasonal conditions and dependent only upon your own efforts.

Corn is not the only crop for silage. Feterita, Milo Maize and Other Sorghums, Barley, Oats, Alfalfa, Vetch and Cowpeas all make good silage.

You do not have to wait until next fall to profit from a silo. Fill it in the spring with fall-sown grain or the first cutting of alfalfa, and insure against such losses as you had this season. Ask us about it.

Redwood Manufacturers Co.

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Rambouillets

1300 YEARLING RAMS AND 1000 EWES.

These sheep are purebred, large and smooth, with heavy fleece of fine, long, staple, white wool. Individuals or carload lots.

Prices reasonable.

Correspondence solicited.

CHAS. A. KIMBLE, HANFORD, CAL. Breeder and Importer.

HOPLAND STOCK FARM REGISTERED SHORTHORN BULLS

REGISTERED BERKSHIRES (Boars, Bred Sows and Glts)
HERD BOAR, ROYAL POINTER 2nd, 19702, First Prize
Senior Yearling, P. P. I. E.

3 REGISTERED HOLSTEIN BULLS from High-Testing Cows.
SAN FRANCISCO OFFICE. 1210 FLOOD BLDG.

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Send for Sensible folder on feeding hogs
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HILLCREST STOCK FARM

DAVIS, CALIF.

T. S. GLIDE, Prop.

Breeder of

Shorthorn Cattle

and the Famous Blascow—Roberts—Glide

FRENCH MERINOS & Purebred SHROPSHIRE SHEEP.

Ram Lambs and Shorthorn Bulls for Sale



KING LANCASTER,

Son of King Edward—Grand Champion Bull, California State Fair, 1909-1910-1911.



HILLCREST LAD,
Champion Shropshire Ram, California State Fair, 1911.

With the Livestock Men.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

DAIRYING.

N. H. Locke Co. shipped a part of their Jersey show herd from the State Fair direct to Fallon, Nevada, where they are entered for prizes at the Nevada State Fair.

J. E. Thorpe of Stockton exhibited some of his butter at Sacramento last week which scored 92½. He also won a silver medal on his exhibit of dairy products.

The California Jersey Cattle Club will hold a meeting at Modesto September 21, during the Stanislaus County Livestock Show and Exhibition. All Jersey men are invited to attend.

The Fresno District Fair will offer \$250 as a first prize, \$150 as second prize and \$100 as third prize for the three best herds of dairy cows exhibited, regardless of breed, each herd to contain 12 head.

Arrangements are being made by the Arcata Chamber of Commerce for an Agricultural Day on September 28 to welcome members of the California Creamery Operators' Association who will hold their annual convention in Humboldt county this year.

The Steybrae Stock Farm of San Mateo county shipped their herd of Ayrshires from Sacramento to Fallon, Nevada, directly after the California State Fair closed. They will make all of the more important shows in this State after returning from Nevada.

The Humboldt County Fair held last week brought out a choice exhibit of dairy cattle and hogs, the former being well represented by Jerseys, Holsteins and Durhams. The stock exhibits and races attracted the largest crowds ever drawn to similar events in the county.

At a meeting of the California Guernsey Cattle Club held at Sacramento last week W. Hidgon of Tulare was elected president, D. O. Brant of Owensmouth, secretary-treasurer, and B. Nixon of Napa, vice-president. It was the sense of the meeting that every member will safeguard the interest of young breeder purchasing foundation animals.

HOGS.

F. V. Gordon of Perris has the largest herd of purebred Hampshires in the State, having recently purchased the herd of Walter Gatton.

The Butte City Ranch is importing a carload of choice Berkshires from the East, purchased for them by L. E. Frost. A portion of them will be offered for sale.

The Western Meat Co. of San Francisco purchased all of the fat barrows shown at the State Fair, paying over nine cents a pound for them in several instances.

W. H. Rough of Arlington, Riverside county, has just purchased the large type Poland China sows Anna Price 11th, dam of his herd boar Superba, and Big Anna Orange. Both of these sows are among the best in the East and will be added to later by other high-class purchases.

At an informal gathering of Duroc breeders held at Sacramento last week it was decided to hold a meeting of Duroc breeders at Modesto during the Stanislaus County Livestock Show and Exposition with the hope of organizing a West Coast Duroc association. The meeting will be called shortly before or after the auction sale of Durocs which the Stanislaus County Duroc Breeders Association will hold.

A. M. Henry reports the following recent sales of Poland China hogs: a 10-month-old gilt to Pecho Ranch and Stock Co., San Luis Obispo, \$75; an 8-month gilt to S. Mastick, Middletown, \$75; a 10-month-old

boar to J. E. Sachreiter, \$50; a 10-month-old boar to Huston and Hanum, Norton, \$40; a six-month-old boar to W. Rushing, Cooperstown, \$35; two 8-month-old gilts to C. Q. Jordan, Colusa, \$40 each; two six-month-old sows to F. W. Shoff, Tehachapi, \$35 each.

SHEEP.

The Bullard Co. will show their flock of Rambouillets on the Arizona and Texas fair circuits.

Bishop Bros. will send a show flock of Shropshires East this year to compete with the best flocks in the United States. They will not make the northwest circuit of fairs as they had previously planned.

California purchasers at the National Wool Growers' ram sale were Ellenwood and Ramsay of Red Bluff who purchased 25 Hampshire rams; Chas. Kimble of Hanford who bought a Rambouillet ram; Bullard Co. of Woodland, who bought a selected lot of Rambouillet ewes, and G. B. Wilcox of Red Bluff who bought a fine Rambouillet ram to breed on a choice band of Merino ewes.

BEEF CATTLE.

The Gibson Estate will show their herd of Shorthorns on the northwest fair circuit during the next couple of months.

F. L. Hall of Perris states that he will enlarge his herd of registered Shorthorns in the very near future as the local demand is more than he can supply at the present time.

The Barco Ranch at Hollister will add to their herd of registered Shorthorn cattle shortly by the purchase of two carloads of cattle in the East. They have 80 breeding cows at the present time.

PIGS HAVE RED NOSES.

To the Editor: My pigs' noses and feet turn red and then scab. Legs get so sore they can hardly walk. Makes them runty and some die.—W. S., Mulberry.

[This is necrobacillosis. Wash the affected parts twice daily with a 2 per cent solution liquor cresolis compositus.]

BERKSHIRE SALE AND MEETING

The first annual sale of registered Berkshire hogs conducted under the auspices of the Western Berkshire Congress was held at Sacramento during the California State Fair on September 7. The sale was a success. While the average price secured at the sale (\$100.00) per animal was not particularly high from the consignors' standpoint, the buyers were well satisfied with the prices and quality of the offerings. The high-priced animal of the sale was the Grand Champion Sow of the show at Sacramento, Grand Lady Mayhews 4th, exhibited and consigned by A. B. Humphrey, Escalon, California. She went to A. W. Foster, Hopland Stock Farm, Hopland, California, at \$500.00. This is a splendid sow, a daughter of Grand Leader 2d, and was well worth the price. The next highest priced animal sold went to James Mills, Hamilton, California, at \$285.00. She is Escalon Belle, a first prize junior yearling sow of the show, and also a daughter of Grand Leader 2d, consigned by A. B. Humphrey. Winona Mistress Piece 7th, third prize senior yearling sow of the show, consigned by Winona Ranch, Grants Pass, Oregon, sold for \$210.00 to E. R. Sheldon, Kenwood, California; and Royalist's Lady Belle, consigned by the University of California, was purchased at a like price by A. B. Humphrey, Escalon, California. Silbira Julia 23d, a daughter of Laurel Champion, consigned by Hollow

Hill Farm, Colton, California, went to J. L. Thatcher, Riverside, California, at \$200.00. A. B. Humphrey secured Miss Plattsburg A. from F. A. Brush, Santa Rosa, California, at \$225.00.

The annual meeting of the association was held at the Travelers Hotel in Sacramento, California, on the 4th of September 1916. Interesting talks and discussions led by men prominent in the Purebred

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

SWINE.

Poland Chinas.

SMITH'S POLAND-CHINAS—Sows and gilts bred to Joker, First Prize Boar at the Wisconsin State Fair, 1915. These sows and gilts, sired by Iowa Wonder, who is a son of A. Wonder, the most celebrated Poland-China boar, living or dead. Litters from this mating are the best I have ever seen anywhere. Prices low quality considered. Will sell one or a carload. As a special inducement each purchaser will be given a year's subscription to the American Swineherd, the best swine paper published and a copy of the Handbook on the Sow; also a copy of the Pig Feeders' Manual. Geo. A. Smith, Corcoran, Cal.

FOR SALE—One tried Poland-China brood sow; bred for second litter to an Orange Wonder Boar—\$35. One Nov., 1915, gilt, bred to Matchless Perfection 2nd, "an extra good boar from Davis College"—\$30. Four extra good, thick, long and deep February gilts—\$20 each, out of a 500-lb. sow and sired by a W. A. Young boar—\$20 each or the four for \$70. All recorded. Crated and transferred f. o. b. Safe arrival and satisfaction guaranteed. N. M. Lester, Gridley, Cal.

YOUNG POLAND CHINAS, LARGE TYPE—Boar IBA Wonder won first and Reserve Championship P. P. I. E., weighing 750 pounds under 2 years and in breeding condition. 60-day special—fine young sows bred to IBA Wonder at very low prices; also weanling pigs, either sex. Satisfaction, or money refunded. W. A. Young, Lodi, Cal.

ROUGH'S GREENFIELDS HERD, headed by Superba, World's Fair Champion. Have recently added 3 noted sows. No better in the West. Prices reasonable. W. H. Rough, Arlington Sta., Riverside, Cal.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated, purchaser to return crates. E. A. Hall, Watsonville, Cal.

LAKESIDE STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

POLAND-CHINA PIGS—Sired by "Iowa Wonder," son of "A. Wonder," largest hog living or dead. G. E. Shelford, Healdsburg, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton Humboldt Co., Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Linn, Linview, Route A, Modesto, Cal.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

POLAND CHINA HOGS FOR SALE—Registration papers furnished free. C. A. Conley, Durham, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Redman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

POLAND CHINAS—Young boars for sale. \$25 each. J. A. Crawshaw, Room 1, Bissell Bldg., Hanford.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 27A, Davis, Cal.

POLAND CHINA HOGS—Registered. Cholera immune. R. J. Miller, Llewellyn Ranch, Lathrop.

REGISTERED POLAND-CHINA HOGS—J. A. Clark R. 4 Lodi Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington.

REGISTERED POLAND CHINAS—Young stock for sale. J. H. Cook, Paradise, Cal.

REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED POLAND-CHINAS and Duroc Jerseys. M. F. Harrold, Orland.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

Berkshires.

REGISTERED BERKSHIRES—World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapeville Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

BERKSHIRES—Herd headed by Artful Masterpiece, Grand Champion State Fair 1915-16, and Improver B. Grand Champion 1915. Open sows. Service boars and weanlings for sale. Oak Grove Dairy Farm, Box 1, Woodland.

CHOICE REGISTERED BERKSHIRES—Fine bred Rival Champions Best and Masterpiece pigs, \$15 each. Trios, \$40. A 700 pound son of Star Value for sale at a bargain. W. H. Waugh, Riverside, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

CHAS. GOODMAN—Breeder of high-class Berkshire Swine. Williams, Cal.

SPECIAL SEPTEMBER OFFERING—Berkshire boars 3 to 11 months. Also aged boars. Write for photo and prices. Imperial Stock Farm, Morgan Hill.

REGISTERED PUREBRED BERKSHIRE PIGS—Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

REGISTERED BERKSHIRES—For sale, bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

ROSECRIFT BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Ferris, Cal.

REGISTERED DUCOC SOWS with 6 pigs 40 gilts, 20 boars. Extra fine breeding. John Knead, East Bakersfield, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. Mikesell, Manteca.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

BERKSHIRES—Carruthers Farms, Mayfield, Cal. Second annual sale, August 3, 1917.

REGISTERED BERKSHIRES—Weanling pigs \$10 each. G. A. Casey, E. 7, San Jose.

REGISTERED BERKSHIRE PIGS—Write or call Greenwood Ranch, Brentwood, Cal.

Duroc-Jerseys.

REGISTERED DUCOC-JERSEYS—60 head priced to sell before October 1st.—Bred sows and gilts, open gilts, boars, and spring pigs, representing the most noted families of the breed. Only choicest individuals, shipped for breeding purposes, at prices within reach of every one; absolutely guaranteed and in first-class condition. For particulars write to Haden Smith, Route 1, Box 84D, Woodland.

DUROCS from River Bend Farm, St. Helena, Cal., are large type, smooth, rangy, with fine backs and deep cherry color. We sell only those we'd like to keep in our herd. Don't write us if you want cheap stock.

DUROC JERSEYS—Herd boars. E. N. N's Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

REGISTERED DUCOC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

REGISTERED DUCOCs—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

WINTON DUCOC-JERSEY FARM, Winton, Cal.—High class pure-bred hogs, both sexes, any age.

THOROUGHbred DUCOC-JERSEYS to farrow in August. Dr. T. A. Guthrie, Woodland, Cal.

REGISTERED DUCOCs from best Eastern blood lines. S. S. Southworth, Napa.

CURTIS DUCOCs of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUCOC JERSEY SWINE—Frederick M. Johnson, Napa, Cal.

REGISTERED DUCOCs—All ages. Either sex. W. A. Pack, Hollister, Cal.

REGISTERED DUCOC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

Other Breeds.

BILLIKEN HERD OF IMPROVED CHESTER Whites—The Farmer's Utility breed. Quiet disposition, big, uniform litters, easy feeders, rapid growers, size combined with quality. 15 bred gilts and 60 spring pigs, of both sexes, to offer. Prices are reasonable and quality is high class. The best and most popular blood lines of the breed are represented in this herd. Every one immunized by the virus-serum treatment. Write for circular and prices. C. B. Cunningham, Mills, Sacramento County, Cal.

HAMPSHIRE SWINE—Fancy belted boars and sows. Good ones, \$25 and \$20. Better ones up to \$45. All registered. Ben F. Thorpe, Manager, Canfield Estate Estates, Bonsall, Cal.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

LARGE YORKSHIRE SWINE—Gilts to farrow in September and October. Service boars and Spring pigs. Both sexes. Silverline Farms, Paradise Road, Modesto, Cal.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

REGISTERED IMPROVED CHESTER Whites—Grizzly Bear Ranch, East Auburn, Cal.

REGISTERED O. I. C. SWINE—C. D. CONWAY, Ripon, Cal.

SHEEP AND GOATS.

F. A. MECHAN ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Rambouillets and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

FOR SALE—Shropshire bucks, yearlings and lambs. Individuals to carlots. Purebred but not registered. J. R. Bloom, Dixon.

KAUFKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

BREEDER OF MERINO SHEEP—Rams for sale. J. Baderay, Fresno, Cal.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers of Shropshire.

CHAS. KIMBLE—Breeder and Importer of Rambouillets. Hanford, Cal.

BEEF CATTLE.

FAIR OAKS RANCH Whites, Cal.—Young registered Shorthorn bulls for sale. Sired by Landseer 379318, grandson of Imported Villager 295884.

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

REGISTERED HEEFORDS—E. H. Gable, Diamond G Ranch, Esparto, Cal.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

GEORGE WATTESSON—Breeder registered Herefords. Bishop, Cal.

SHOKTHORNS—Carruthers Farms, Mayfield, Cal.

DAIRY CATTLE.

Holsteins.

FOR SALE—"Pleasant Dictator," purebred Jersey Bull; calved Sept. 6, '15. Heavy show type from grand family. Gentle and patient. Write for particulars and photo. Worth twice what I ask. Pleasant View Farm, Box 291, Pleasanton, Cal.

REGISTERED HOLSTEIN BULL CALVES—Sired by Lorena Korndyke Alcartra, whose dam made 29.75 pounds butter fat in seven days as a four-year-old. J. M. Campbell, Escalon, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Cream-elle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

REGISTERED HOLSTEINS—Have a few Bulls from El Prado Wayne Colantha, whose dams and sire's dams average per cent fat at 4 years is 5.01. See my stock at the State Fair. J. W. Benoit, Route C, Modesto, Cal.

REGISTERED HOLSTEINS—Sired by King Korndyke Hengerveld Ormsby 53822. Dam Pieterje Maid Ormsby 78051, world's record when made 35.56. Send for pedigrees. Geo Kounias, Modesto, Cal.

17 HEAD Grade Holstein cows, bred for milk production on my own ranch. Will sacrifice at low figure. Quitting farming. W. E. Clanton, Melrose Farm, St. Helena, Cal.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

HOLSTEIN BULLS—Well-marked, large, straight individuals. Tuberculin tested, \$100 up. Packwood Farm Herd. W. F. Mitchell, Visalia

REGISTERED HOLSTEINS—32 high-grade Holstein heifers coming fresh this Fall for sale. E. E. Freeman, Route B, Modesto, Cal.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

REGISTERED HOLSTEINS—Colantha Johanna Lad and Aralia De Kol breeding. Young stock for sale from A. R. O. cows. Lester A. Driver, Nicolaus, Cal.

A SPLENDID 8-months-old Holstein bull with good A. R. O. breeding for \$135. K. W. Abbott, Milpitas, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS Corp., Importers and Breeders, Woodland, Cal.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chino, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnyside Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams R. F. Anderson, Modesto, Cal.

30 HIGH-GRADE Holstein milk cows for sale at once. Hewitt & Hewitt, Dixon, Cal.

HOLSTEIN COWS for sale with records Dr. Stetson, Napa, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Calif.

Jerseys.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3 lbs. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

VENADERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly record. Guy H. Miller, Route 1, Modesto, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs. butter as two-year-olds A. A. Jenkins, Tulare.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

YOUNG REGISTERED JERSEY BULL CALVES at reasonable prices. O. J. Ames, Oakdale.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

FRESH JERSEY MILK COWS for sale. E. M. Locke, Lockeford, Cal.

Other Breeds.

GUERNSEY BULL CALVES from Grand Champion Bull. Also Hampshire Swine, both sexes from Grand Champion 700-lb. boar and Grand and Junior Champion Sow. Bella Vista Herd J. W. Henderson 1st National Bank Bldg., Berkeley, Cal.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

WILLOWMOOR AYRSHIRES—Great records; economy. 300 head in herd. J. W. Glise, Redmond, Wash.

INNISFALL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

YOUNG REGISTERED GUERNSEY BULL for sale cheap. Guaranteed sound. Kenneth Evans Gilroy, Cal.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes, McCoy, Oregon.

Berkshire Industry were given. Professor J. I. Thompson of the University of California spoke upon Self-Feeders: Their Place in the Breeding Herd and in Profitable Pork Production. Professor Thompson advocated the free choice system of feeding swine, saying that this method secured the best results on young stuff, and on hogs being fattened for the market. Mr. A. B. Humphrey of Mayhews and Escalon, California, gave a paper on Seed Animals in the Foundation Herd, in which he urged the necessity of the greatest possible care in selecting the foundation material for a herd. Judge Peter J. Shields delivered an interesting address on the general features of the swine industry. A paper, "Some Practical Suggestions in the Management and Feeding of the Breeding Herd," by F. R. Steel, was submitted. "Purebred Berkshires as a Business Proposition" was handled in a paper by C. M. Talmadge, Newport, Washington; and "The Needs of the Pacific Coast in the Swine Business," by W. S. Guilford, Willows, Cal.

In the open discussion that followed several prominent breeders of Berkshires emphasized and endorsed the modern tendency of the breed in conformation. Much less attention is now being paid to such less important points as marking, shape of head, sets of ears, etc. A motion was passed suggesting that it be the opinion of this body that judges at the fairs in the Berkshire classes should not discriminate against swirls. It was decided to hold the next Western Berkshire Congress meeting and sale at or near the first of February, 1917, at Davis, California. The next Western Berkshire Congress show will be held at one of the northwest fairs, the selection of which one to be left to the board of directors.

DUROC SALE SCATTERS HOGS.

With an average of \$89 on 33 sows and a little over \$57 on 7 boars the Rucker and Coppin sale held during State Fair week was considered highly satisfactory from a selling standpoint.

To the writer's mind the most constructive factor of the sale was the wide scattering of purebred hogs which was accomplished, the total number of buyers being 21 for the 40 head of stock sold.

While exceptionally high prices were received for some, the majority of the animals sold at prices thoroughly conservative from a farmer's standpoint, which was as it should be in all auction sales if the most good is to result.

Following is the list of buyers: F. A. Miller, Peters, Lamson & Walker, F. M. Johnson, J. J. Morris, W. D. Bennett, W. Higdon, C. C. Fimple, D. Rice, J. W. Copeland, W. P. Harkey, A. H. Votg, J. E. Thorpe, R. Q. Wickham, H. Eckle, J. J. Doty, J. R. Gallagher, J. M. DeVilbiss, White & Sawyer, F. N. Wood Jr., J. Jensen, G. P. Robinson.

The high mark of the sale was reached by the sow Monarch's Beauty, which, after brisk bidding, was knocked off by Col. Ben. Rhoades for \$500.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

HORSES AND MULES.

STOCKTON PERCHERONS again winners at Sacramento. Get next, brother farmer. H. G. Learned, Producer, Stockton.

REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders, Easton & Ward, Proprietors, Burlingame, Cal.

MISCELLANEOUS.

CROLEY'S CALF FEED with skim milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

D. O. LIVELY, 216 Hobart Building, San Francisco, buys and sells livestock—any kind and quantity.

DUROCS AND GUERNSEY BULL CALVES Gilts bred to 900-lb. boar. Ed. E. Johnson, Turlock, Cal.

DOGS.

THOROUGHbred SCOTCH COLLIES—All bred from our noted prize-winners. Have a few 3 months old puppies—very choice. Write us what you want. Browndale Kennels, Redwood City, Cal.

THE VINTAGE FESTIVAL.

The fifth annual vintage festival held at St. Helena was a splendid success. Thousands were present to witness the vintage allegory, "Back to the Soil," written by Gardner de Veuve, principal of the St. Helena High School. Miss Clara Navone presided graciously as Queen of the Festival. The exhibits, which were in great profusion, spoke eloquently of the fertile soil and genial climate

of Napa Valley, more especially as exemplified in its grape harvest. The festival opened Friday, Sept. 8, and extended over a series of days, and included a varied program of entertainment.

Members of the Kern Motorcycle Club will participate in a coyote hunt on the plains north of Bakersfield at the end of this month. Coyotes are an increasing menace

Bishops Shropshires

Winnings at Sacramento

GRAND CHAMPION RAM. GRAND CHAMPION EWE.

Aged Ram, First. Yearling Ram, First and Second.

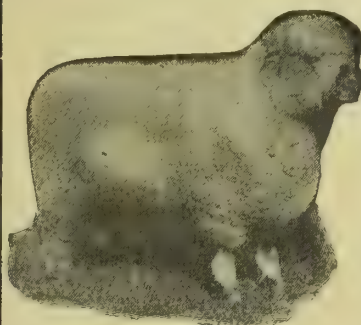
Ram Lamb, Second. Aged Ewe, First.

Yearling Ewe, First and Second. Ewe Lamb, Second.

Pen of 4 Lambs bred and owned by exhibitor, First and Second.

Also American Shropshire Special First and Second for Pen of 3 Yearling Ewes.

In the Middle Wool Type Class won: Pen 3 Ram Lambs, First and Second; Pen 5 Aged Ewes, First; Pen 5 Yearling Ewes, Second; Pen 5 Ewe Lambs, First and Second.



WINNINGS P. P. I. E., 1915.

Aged Ram, First and Second. Yearling Ram, First. Ram Lamb, First, Second and Third. Champion Ram. Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of Sire, First. Pen of three Lambs, bred by Exhibitor, First and Fourth. Pen of Four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock, one year old, bred by Exhibitor, First. Flock under one year, First. Flock under one year, bred by Exhibitor, First. Produce of Ewe, First, Second and Third. Premier Championship for Breeder Premier Championship for Exhibitor. A total, including American Shropshire Specials, of 15 Firsts, 9 Seconds, and 6 Championships.

Champion Ram P. P. I. E.

PUREBRED REGISTERED RAMS AND EWES,
Individuals or Carload Lots.

BISHOP BROS.

SAN RAMON,

CONTRA COSTA CO., CAL.

Grand Champion PERCHERON

Will accept a few mares for service the coming season.

FEE, \$25.00

Fine Young Horses
Sired by Ithos
For Sale

M. BASSETT
HANFORD, CALIF.



Ithos, Grand Champion at Sacramento.

Announcement of Berkshire Importation

We are bringing to California a carload of registered Berkshires, selected for us by L. E. Frost, Editor Berkshire World, from Iowa Farm and Gregory Farm.

Choice individuals at reasonable prices.

Butte City Ranch

Butte City,

Glenn Co., Calif.

Member Glenn Co., Berkshire Breeders' Association.

THE DAIRY: AN AMERICAN GIFT TO CALIFORNIA.

(Continued from first page.)

racks for the milk pans made of oak and there was running water in the house, a piped from an aqueduct a mile and a quarter in length. He also had "a Durham bull worth \$2000" and was one of the "fancy farmers" of the first decade.

California System of Dairy Tenantry.—It was about 1860 that the system of dairy tenantry peculiar to California took form. In the coast region near San Francisco the lands were largely covered by Spanish titles, and these large tracts were cheaply obtained by men who had some money and some genius for finance. This coast region was seen to have large rainfall, through a long rainy season, a longer grazing season, a cool summer, and as all these things naturally made for cheap feeding and easy milk-handling, it soon came to be thought that the coast could have no rival in dairy production and this impression prevailed for nearly a third of a century until it finally yielded to the refrigerator and the demonstration of the dairy value of alfalfa grown with irrigation.

While then the impression of the dairy sovereignty of the coast region prevailed large tracts of land were secured, dairy cattle were gathered, either by importation or by crossing Mexicans and Texans with more or less pure-bred sires, also imported; sheds were built for milk racks, churns and vats; the cows were kept under the sky and milked in corrals floored with mud or dust. These sheds and corrals were built here and there on the property, and a bunch of cows and men, including a cook and butter maker, assigned to each. Later, these single places, to save the land owner from worry and trouble, were leased to different tenants; the tenant paying the owner a cash rent per cow and furnishing his own help and equipment and agreeing to raise a certain number of calves. For new building and other improvements the land owner furnished the materials and the tenant the labor. The owner had to keep the cows up to the number assigned to the ranch and for such supply he grew to milking age the calves the tenants furnished him. Roughly, this is the way the system began about 50 years ago and, in improved form as to stock, barns, dairy buildings and methods and reduced rent per cow, it still prevails in some districts of the state. It enabled many to get a start with small capital and to accumulate something with which to establish themselves as owners in newer dairy regions. It gave the pioneer land owners considerable money, some of which they used in securing better dairy stock and buildings and sometimes in improving pastures. One of the by-products of the system was the invention of many novel appliances useful in the old time, but now largely displaced by outfits belonging to newer methods of manufacture, and therefore chiefly of local historic interest. Thus, in early days, there came to be California butter rolls, boxes, churns, butter workers, etc., different from those used elsewhere.

Dairy Ownership.—In the mountains the dairies were established largely on government land and have

always been chiefly owned by the operators. In the newer lands of the alfalfa districts there is also a large prevalence of self-owning dairy farmers. This fortunate condition is one of the benefits of the establishment of creameries, and skimming stations which have ruled out the necessity for much investment on the manufacturing side, which was required in pioneer days. This has given the modern owner more time and sometimes more money to use in getting better stock and in seeking the results of better feeding and care than the pioneers ever thought of.

Dairy Development Slow.—But though dairying began very early its effort to displace the huge importation of butter and cheese from distant parts of the world, its progress must be counted very slow. Though it took only about five years to shut out grain and flour and only a decade or so to place California in the front rank of wheat exporting states, and even less to bring fresh fruit production to the limit of local consumption, imported dairy goods continued to move in freely until the third decade of American occupation and has never been wholly excluded at all seasons of the year.

The crest of the wave seems to have been reached in 1865, when the following protest was made:

Most of the stock brought into the State in early days by Western men was for the purpose of supplying the great demand for beef. Having overstocked the country they refused to sell at reduced prices and the cattle roamed over vacant lands in great herds, of little benefit to their owners and of great detriment to the farmers. And although in 1860 we possessed more milch cows in proportion to our population than any other state in the Union, yet for the six years ending in 1865 we imported 34,226,600 pounds of butter at a cost of \$9,768,346 in gold and during three years ending 1865 we imported 1,376,200 pounds of cheese at a cost of \$209,317 in gold, making an annual draft on our gold product of \$1,667,828 to pay owners of Eastern dairies for butter and cheese shipped to us when at the time we owned more than twice as many cows in proportion to population, than any of the states from which we bought these articles.

And to properly appreciate the weight of this anomaly it must be remembered that every dollar in gold was worth more than two dollars in the war currency which circulated at that time in the Eastern States.

But deep as is the impression of economic iniquity thus bulked, a concrete instance still has force. H. D. Dunn said in 1867 that he "visited in 1860 a farm in Sutter County, twelve miles from Marysville, the owner of which had 170 fine American cows coming daily to the corral and yet there was no milk for tea, and coffee and 'States butter' was bought for family use!"

From 1866 onward, local production of butter increased and importations were soon reduced from five million pounds a year to one million. It was not until 1878 however that local production of butter first equalled consumption—exports at one season about balancing imports at another. The local production of cheese more speedily reached the local limit, for in 1866 the record says: "We have produced more cheese than needed for local consumption, the estimated product being

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Rio Vista Holstein Farm Dispersion Sale

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RIVERA, CALIFORNIA

Tuesday and Wednesday Sept. 19 & 20

At This Sale You Will Find More
HIGH RECORD COWS AND HEIFERS,
DAUGHTERS OF HIGH RECORD COWS,
WONDERFULLY BRED SIRES,
Than has ever before been offered in the West.

Sales Headquarters: ANGELUS HOTEL, Los Angeles, Calif.
Arrangements have been made to take you to and from the ranch from the hotel.

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SANTA ANITA RANCHO
ANOAKIA BREEDING FARM



FIRST ANNUAL SALE, OCTOBER 23rd and 24th.

ARABIAN THOROUGHBREDS: Two-year-olds, sired by Imported Stallion Ibn Mahrus, head of our Arabian Stud. Dams are the choicest thoroughbred mares of Santa Anita Rancho.

SADDLE HORSES: Fourteen of them, some of which are sired by Ibn Mahrus, world renowned imported desert saddle stallion, and Don Costano, a five-gaited Kentucky saddle stallion. These horses are mostly three-year-olds.

POLAND CHINA AND BERKSHIRE BOARS: Four to nine months old. Sired by famous Poland China herd boars—Banker's Boy and Glenview Wonder. And Berkshire Boars—Kintyre Laird, Grandson's Duke and Fashion's Longfellow 5th. The dams are from the very best blood lines. Most all these animals have winnings at World's Fair.

HOLSTEINS: We will sell a number of young bulls. Some aces and grandsons of the noted Prince Gelsche Walker, and bulls from one World-Record cow and two California State-Record cows.

Sixty females of the highest class will be consigned.

Write for catalogue.

WORK HORSES AND MULES will also be offered for sale.

WRITE FOR PARTICULARS.

Anita M. Baldwin,

W. H. TAYLOR, Superintendent.
Santa Anita, Cal.

1,610,000 pounds valued at \$200,000.

To show the increase in dairy production as related to State population, at about the dates named and the present time, these figures are interesting:

	Population	Butter lbs.	Cheese lbs.
1870	560,247	7,969,744	3,395,074
1915	3,064,000	67,522,409	6,105,775

Inquiry as to the reasons why butter production increased nearly eight and one half times and cheese production less than twice, while population increased about five and one half times, opens a large field which we cannot enter at this time.

California Dairy Stock.—California stock has been known for the average excellence of dairy animals for the last quarter of a century. Favorable natural conditions for cattle and commendable effort to breed up to good character and capacity are to be credited with this general attainment which expert observers have often recorded. Beyond this, we have bred cows with high individual performances and have even made world records in this line. It will be interesting to note a few facts of the beginning on the line of dairy cattle improvements in California, in addition the notes on the lines of foundation stock which have been made.

It was natural that the first effort to secure better horned stock should have been manifested in free importation of Shorthorns, or Durhams, as they were universally called half a century ago. California dairying began when there was a beef famine on, because of the free-killing of Mexican beeves to feed the miners. It was not sure whether beef or milk stock would be the more profitable to grow and so the pioneers hedged by choosing a dual purpose breed. Besides, the importance of special dairy breeds had not yet clearly dawned anywhere in America though well demonstrated in European practice. For all cattle purposes the Durham had only one rival in Eastern estimation in 1850, and that was the Devon. Californians with their heavy purses paid long prices for the best they could get of these two breeds. Durhams and Devons arrived before 1856, for in that year both breeds were shown at the State Fair, but we have no record of the exact year when the first arrived. There was a bull "worth \$2,000" and a "cow that cost \$500" shown in 1856—presumably the prices paid for them in the East, and not small prices for those days. For nearly a decade improvement of the common stock rested solely with the Durham and Devon—the former largely leading in numbers and frequency of importation. It is not too much to say that when an "improved animal" was mentioned it generally signified a Durham grade, and it was the influence of the Durham that one saw most clearly and frequently on dairy farms for two or three decades later. In 1863 Alderneys and Ayrshires were publicly shown, and of these two the Ayrshires were more prominent for nearly ten years—alone disputing for favor with the Durham and Devon. In 1872 Jerseys and Alderneys appeared as distinct breeds, but were merged and became Jerseys after that: Jerseys and Ayrshires winning sweepstakes for best cow and heifer respectively. This was at the State Fair and in the same year, 1872, the Holstein was

shown at the Santa Clara Valley district fair. The Jersey was, however, the breed which made the first drive on the Shorthorn, the Ayrshires declining in interest and the Holstein not appearing in force until some years later. The Jersey bull on the shorthorn grade cow, was very popular in the latter '70's, and, until the Holstein-Friesian invasion began in the '80's, held undisputed sway. For three decades past the Jersey and the Holstein Friesian have contended for supremacy in the minds of the doubtful—each remaining supreme, usually, when one has his mind made up either way. During the last decade several other breeds have made entry, and more will be heard of some of them as time goes on. At present, however, one sees California dairy herds largely black and white—either because the style is more numerous, or larger, or black and white can be seen farther than red and yellow.

Dairy Organization.—California dairy interests have been advanced by several organized efforts. The first State Dairymen's Association was organized in 1876, and held several good annual conventions, but could not command sustaining interest. In 1882 another State Association was organized to fight oleomargarine, and secured the State law restricting the sale of it, but provided no ways or means for the operation of the law itself. In 1893 another dairy association was formed to promote the industry through demonstrating profitable lines of export and to protect it from competition with bogus products. This association secured the establishment of the State Dairy Bureau in 1895, which is still doing good work. The association was otherwise forceful for several years, but failed of adequate popular support. In 1901 the Creamery Operators' Association was organized, by those chiefly on the manufacturing side as the name indicates, and since that time it has continued a very useful and energetic association. Since then still another effort was made to organize dairy farmers in a society of their own, but it went the way of the three earlier undertakings of the same kind, but rather more quickly than they did. It has been announced that another effort to organize California dairy farmers would be made at Ferndale during the last week of this month, when the Creamery operators hold their convention at that place. We trust it will succeed. Dairy farming in California is becoming more beset by problems of all kinds each year, and the only way producers can secure justice is to strongly present to the public mind facts and convictions from their own point of view. An industry which produced a value of \$38,377,342 in 1915 for the advancement of California should have a powerful and permanent organization of producers for promotion, etc.

Thus we have skimmed the dairy industry of California, and lavishly poured out the skimmed milk for the nourishment of our readers. The cream we still have in the can for later use, for it is the relation of the dairy industry to mixed farming, to soil renovation, to greater growth of better forage plants, to the growth of better animals and to the greater prosperity of California men and women, which calls for effort of the widest public value.

F A M O U S Blackhawk Shires

Again Prove Their Superiority

By Winning at Sacramento State Fair
TWO CHAMPIONSHIPS, TWENTY-ONE FIRSTS,
TEN SECONDS AND THREE THIRDS.



Black Hawk Shire Mares—Prize Winners.

At the great Shire Show at the Panama-Pacific International Exposition, competing against some of the greatest Show Studs of America.

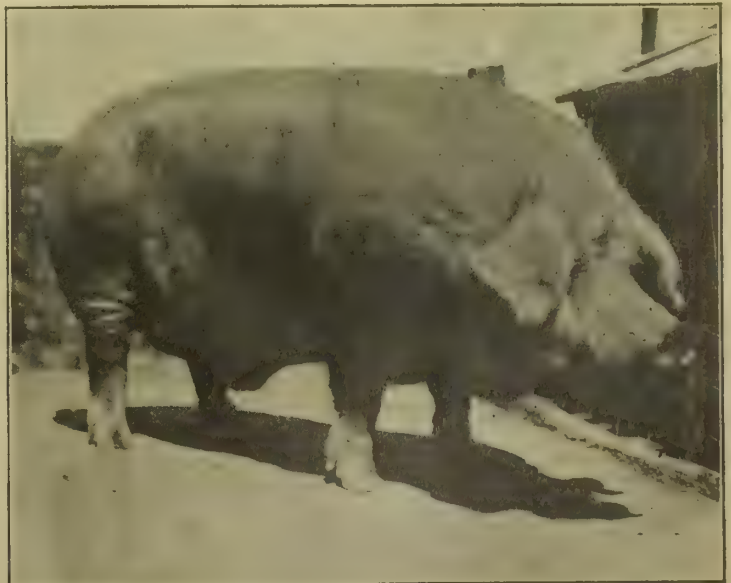
THE BLACKHAWK SHIRES Won 68 Prizes.

We price our stock reasonable and guarantee to please you.

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EASTON & WARD, Burlingame, California

BILLIKEN HERD OF IMPROVED CHESTER WHITES

THE FARMERS' UTILITY BREED



Grand Champion Boar at Sacramento. Weight 1020 lbs.

At the State Fair we took Three Championships, Thirteen Firsts, Nine Seconds, Two Thirds, One Fourth, One Fifth.
EVERY ENTRY IN THE MONEY.

15 Bred Gilts and 60 Spring Pigs of both sexes to offer.

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Vetch

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1 and 5-acre Size Packages.

FRESH and VIRILE

We have a limited supply of
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"THE ONE BEST SELLER"

Because it's a re-
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a mixture.

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COMPANY
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CALIFORNIA HOG BOOK, \$2.00 Postpaid, Pacific Rural Press Office.

Veterinary Queries.

MARE PAWS AND ROLLS.

To the Editor: A six-year mare four months in foal acts as if she were in pain in her bowels. She paws and rolls a great deal and lies down often. She does not seem to strain. She passes gas. Feeding ripe wheat hay and rolled barley. Appetite good. Pains come after watering or driving. At times she runs her tongue out as if trying to get something out, but nothing is there except a swelling just back of the front teeth which I understand is lampers.

Two ducks have gone blind and act intoxicated. The lungs of one were in terrible condition, hard and gray on the outside.—C. B. H., Gray Mountain.

[Give this mare a purge consisting of one quart raw linseed oil and two ounces turpentine. There is no such thing as lampers. The ducks died of ptomaine poison due to some substance they had eaten.]

DANGER OF CAKED BAG.

To the Editor: A 3-year heifer has been giving milk since July last year. She is due to calve Oct. 1. With her first calf, I came near losing one-quarter of her bag as it was swollen and had but little milk. Later it came in and now gives about half of all the milk. Should I milk her right along, or dry her up and milk a few times before calving, or not milk at all and use some other plan?—W. F. R., Gridley.

[It is better policy to dry up completely from four to two weeks previous to calving by gradually letting up on the milking.]

CALVES' BLADDERS FILLED WITH RED WATER.

To the Editor: Two 4-months calves died. They were running in creek bed with running water willows, and alders. Were feeding some alfalfa hay. The first I observed, they did not eat, urinated often, tinged with blood. One lived two days; the other, one. I opened the latter. Its gall was two inches in diameter and more than five inches long. Kidneys somewhat enlarged. Were feeling fine within two days of death.—C. W. S., Morgan Hill.

[This is blackleg. Vaccinate your calves each year for this trouble.]

COW COUGHS.

To the Editor: My cow has a dry cough and breathes heavily when she runs or walks uphill. Does not react to tuberculin test. She had milk fever when she came fresh. The veterinarian said the cough was from strong medicine he gave her, but five months have passed and she still coughs.—A. A., Sebastopol.

[In all probability this cow has tuberculosis regardless of the test. Have her tested again.]

GRANDSONS OF TILLY ALCARTRA



Prince Alcartra Korndyke,
Best bred son of Tilly Alcartra.

Our supply of these young sires is always limited, but we have a few now which we are offering at very reasonable prices.

Write us at once, or call and see the herd.

J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

COLT NAVEL SWOLLEN.

To the Editor: A colt now four months old, contracted serious navel trouble soon after it was born. The veterinarian seemed to have pulled it through, but this morning it is badly swollen and hard. Bathed it with liniment made of egg, vinegar, and turpentine and gave the colt a dose of nitre.—H. G. H., Amsterdam.

[This is an abscess which should be opened and the colt given navel vaccine.]

ITCHY TAIL HEAD.

To the Editor: For two years a cow has had itchy places two inches across either side of the root of her tail. She licks it raw. Have tried Dr. Hess' Dip, but as soon as the dip leaves it, she licks it sore again, but it doesn't spread.—G. W. I., Watsonville.

[Paint with tincture of iodine daily for several weeks.]

Smith Valley, Nev., is becoming a turkey valley. There are about 3000 turkeys there.

Rough's Greenfields POLAND CHINAS

Herd Board
SUPERBA 260623

was
Grand Champion P. P. I. E.
is

**WORLD'S GREATEST
POLAND-CHINA
SHOW HOG**
And One of the Greatest
Sires of the Breed.

Offering Spring Boar Pigs
Sired by Superba. They are
beauties and about ready
for service.

Also Two Tried Sows.
Have each farrowed and are
bred to Superba for Fall
litters.

First check for \$75 takes
either, or \$135 for both.

Rough's Greenfields
ARLINGTON STATION,
RIVERSIDE, CALIF.

WANTED WILLOW WOOD

Must be at least 18 inches
in diameter.

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C. H. HITTENBERGER
37 Laskie St., San Francisco

At prices within reach of
every Breeder and Dairyman.

When you buy a son of our
herd sire, **Prince Alcartra
Korndyke**, you get more than
a Holstein bull with registra-
tion papers—you get a grand-
son of the world's greatest milk
cow out of a high-testing A.
R. O. dam. Our herd of fe-
males has been developed into
one of the best in the State.

Innisfail DAIRY Short- horns

The Great Dual Purpose Cow
**WON AT
SACRAMENTO**



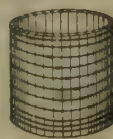
Grand Champion Bull
at Sacramento.

12 FIRSTS—3 SECONDS.
GRAND CHAMPION BULL.
**RESERVE GRAND CHAM-
PION BULL.**
GRAND CHAMPION COW.
**RESERVE GRAND CHAM-
PION COW.**
FIRST AGED HERD.
FIRST YOUNG HERD.
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**A few young Bulls
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Alexander & Kellogg
Props.

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REDWOOD TANKS—SILOS.
Thirty-five years in this bus-
iness in Stockton.—A 500-gal-
lon tank, \$8.00. A tank 6 ft.
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equally cheap. I deal direct
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Clear dry redwood direct from
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Latest improved machinery. Doors, Windows,
Frames, Mouldings.
R. F. WILSON, STOCKTON, CAL.

Raising Poultry for Profit

FOWLS CATCH CHOLERA ONLY THROUGH WOUNDS.

[Written for Pacific Rural Press by Geo. H. Croley, President of Federated Poultry Association of California.]

A very interesting discovery was recently made at the Institute of Hygiene of the Veterinary School at Pisa, Italy, in relation to Fowl Cholera which is said to be the most infectious of poultry diseases. It was demonstrated that infection seldom occurs through the channel of the alimentary canal or throat, as is commonly supposed, but that the virus almost always gains entrance to the system through wounds or abrasions on the surface of the body—most frequently on the feet—or the infection may occur through lesions or injury of the mucous membranes of the throat or nose. It was thoroughly determined that even the swallowing of virulent blood and slime of the fowls that had died of the disease does not result in infection, notwithstanding they were given in large quantities and repeated several times. The digestive system of the fowls seems powerful enough to completely digest the germs and render them harmless. The results of this experiment should stimulate careful observation, by poultry keepers and experimenters, of other virulent poultry diseases such as roup, white diarrhea, and blackhead of turkeys.

QUESTION ANSWERED.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

Turkeys Strain.—My turkeys act as if they are trying to swallow; also strain like hens that are egg-bound. They eat well, have wheat and alfalfa range. I notice more in the morning are affected. Some are early hatched large birds, while others are small ones weighing three or four pounds. One died and we thought it was from diarrhoea, but these that are sick do not appear to have any diarrhoea. Will it develop later?—C. B. S., Lancaster.

These turks are suffering from a mild form of gastritis, which causes constipation and diarrhea in turns. Probably the trouble is due to some-

thing they have found to eat on range that started indigestion. A little irritation soon attacks the whole internal organs, if neglected. If you could confine the birds to a yard for a few days and give them all a dose of castor oil in a little warm mash, allowing a tablespoonful for each large bird and a teaspoonful for each small one; then make a mucilaginous drink by boiling flaxseed and rice in plenty of water, pour the water off the grain and give the birds that to drink instead of water, a few days treatment should put them all right.

SCRATCH FEED AND MASH.

To the Editor: What would you consider the proper amount of scratch feed for 100 pullets seven months old? I keep some before them all the time, a green feed at noon and give them the scratch early in the morning and evening.—B. V. G., Los Gatos.

[Answered by Geo. H. Croley, San Francisco.]

[We would not feed a stated amount of scratch feed, but would give them about as much mash as they would consume; and when they have eaten it, feed them the same weight of scratch feed.

This is because the mash is higher in protein, while the scratch feed is higher in carbohydrates. Hens prefer the scratch feed, and will eat so much of it that they will get too fat to lay well if allowed to eat all they want of it, and they will not eat enough of the mash to make an economically balanced ration unless it is fed to them first, alone, and while they are hungry.

STATE FAIR POULTRY SHOW.

With nearly one hundred exhibitors and approximately 500 birds, the 1916 State Fair poultry show has passed into history as the best exhibit ever held at Sacramento. New, convenient, and commodious buildings and an excellent list of premiums brought out some of the best entries that have ever been cooped at the State Fair. Competition in some varieties, it is true, was not strong, but the quality in every class was exceptionally good for this season of the year.

Probably the surprise of the show was the excellent exhibit of Bantams, more than 200 specimens being shown of several varieties. Judge Robt. V. Moore pronounced it the premier bantam show of the Pacific Coast, the sensation of this class being a Black Cochon Bantam cock.

C. G. Hinds of Oakland, assisted by N. E. Luce of Los Angeles, placed the awards in all classes excepting bantams and pigeons.

The large, light sanitary addition to the building gave breathing room for fowls and visitors, so that the large exhibition was housed comfortably without crowding.

Waterfowl had a merry time splashing in this new cement tank fenced off by wire netting so they could stretch their wings. In this class, our old friend W. A. French of Stockton had what was judged to be the best pair of both ducks and geese.

Poultry Breeders' Directory.

BABY CHICKS NOW READY.—Hatches every week. Write for special "Fall Chick" circular. See why Fall chicks pay. R. I. Reds, Barred Rocks, Black Minorcas, White and Brown Leghorns. Campbell Poultry Ranch, Campbell, Cal.

CLOSING OUT—FOR SALE CHEAP.—3 Electric Incubators, 576 egg capacity each. 16 Electric Brooders, 150 chick capacity each. Complete with circuit breakers, thermostats, connecting sockets, etc. Address T. R. Jacobs, P. O. Box 395, San Mateo, Cal.

CROLEY'S DRY MIXED INFANT CHICK FEEDS for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by GEO. H. CROLEY CO., Inc., Poultry Supplies, San Francisco.

BUFF ORPINGTON CHICKS.—September and October delivery. First hatch Sept. 13th. Orders taken from 25 to 150; \$15 per 100. Eggs \$1.50 per 15; \$8 per 100. The Ferris Ranch, Rt. 2, 144 D, Pomona, Cal.

BARRED PLYMOUTH ROCKS.—"The kind that Win and Lay." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for catalog showing winnings at California's leading shows. Chas. H. Vodden, Box 396, Los Gatos, Cal.

MACFARLANE STRAIN WHITE LEGHORN Cockerels.—April hatched, Hoganized, \$1.00 each, \$9.00 per dozen. Chicks to order, 10c each. Newton Poultry Farm, Dept. 1, Los Gatos, Cal.

THE SANTA CLARA VALLEY HATCHERY solicits your orders for Fall and Spring delivery in 8 breeds of baby chicks. Order early and get the best. Jos. A. Bihn, Lincoln Ave., San Jose, Cal.

FOR SALE.—R. I. Red Pullets, 5 mos. old. Good stock. White Indian Runner ducks, full feathered; fine laying strain. Prices reasonable. Mrs. R. D. Kellogg, Richfield, Cal.

EASTMAN'S BRED TO LAY Barred Plymouth Rocks, Chicks, Eggs, Cockerels. Fairmead Poultry Farm, Fairmead, Cal.

DAY-OLD CHICKS.—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS. Pea Fowl, Pigeons, Wm. A. French, 546 W. Park St., Stockton, Cal.

WHITE WYANDOTTES.—Blue-ribbon winners. Eggs \$2 to \$5. Chicks, pullets, cockerels. R. W. Strawetski, Route 2, San Jose, Cal.

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HART'S BRONZE TURKEYS AND EGGS.—Large reduction in price of stock. Order now for fall delivery. Free Circulars. Albert M. Hart, Clements, Cal.

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Honest materials and manufacture, honest prices, honest service.

Ask for the name of a distributor near you.

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Assures more eggs, better health—less mortality.

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GLOBE MILLS,
LOS ANGELES, CALIFORNIA

Floral Department.

[By Geo. N. Tyler.]

Roses that have been resting for the last six weeks should now be watered. Prune back all weak and blind wood, but not so severely as for winter pruning. Scratch in a liberal coating of bone meal around them, and mulch them with half-rotted manure. Spray the tops two or three times a day for the first week or two as this helps them to break nicely.

Sweet Peas.—If you want some early sweet peas you can plant seed from now on. If you trench and enrich your bed with thoroughly rotted manure and a liberal amount of bone meal to the depth of eighteen inches (some growers enrich to the depth of two feet) you will be surprised at the results, as sweet peas are deep-rooter plants. By planting early you get a good growth before frosts, and if any variety fails to grow you have plenty of time to re-plant. I would advise sowing the Spencer varieties, as they have taken the place of the old varieties. Do not sow a mixture, but sow each color by itself if you have only enough seed for four feet of a row. Sow the seed two inches deep and give a good watering after planting. Cover with lawn clippings or clean straw to prevent them drying out. Do not sow too thick—two inches apart is close enough for planting—and after they are up, thin out to six or eight inches apart. When they have made a growth of six or eight inches, give them supports to run up on. I use six-foot coarse chicken wire, two or three inch mesh, with stakes or posts every eight feet, for the weight of the vines climbing to the top of the wire is pretty heavy when wet. There is a system of growing where the vines run up ten and fifteen feet, and no side shoots are allowed to grow; even the tendrils are cut off. But this is too much work and is only for exhibition flowers.

Violets should now be mulched with one or two inches of cow manure, and all the runners kept picked off if you want early flowers. My plants of Princess of Wales are now making flowers, but they are small yet, and will not be good till the weather gets cooler.

Asters are now in full bloom. While blooming they require a great deal of water; and a light application of liquid manure once a week will greatly increase the size of the flowers.

Now is the time to prepare your bed for next year's plants. Spade in a liberal amount of half-rotted manure and a liberal amount of bone meal. Do not rake it, but let it stand till next spring.

TOMATO SAUCE.

Stew half a can of tomatoes and half a small onion ten minutes. Rub all the tomato pulp through a strainer. Cook one tablespoonful of butter and one heaping tablespoonful of flour in a granite saucepan. Add the strained tomatoes gradually and a teaspoonful of salt and a dash of white pepper. This sauce is delicious poured over and around well-browned lamb or veal chops and is equally good for macaroni.

THE HOME CIRCLE

THE TWO SIDES OF IT.

There was a girl who always said
Her fate was very hard;
From the one thing she wanted most
She always was debarred.
There always was a cloudy spot
Somewhere within her sky;
Nothing was ever quite just right,
She used to say, and sigh.

And yet her sister, strange to say,
Whose lot was quite the same,
Found something pleasant for her-
self

In every day that came.
Of course things tangled up some-
times

For just a little while;
But nothing ever stayed all wrong,
She used to say, and smile.

So one girl sighed and one girl
smiled

Through all their lives together.
It didn't come from luck or fate,
From clear or cloudy weather.

The reason lay within their hearts
And colored all outside;
One chose to hope and one to mope,
And so they smiled and sighed.
—The Children's Friend.

WHAT KITTY FOUND IN THE DRAWER.

[Kate Randle Menefee.]

Grandfather Bryant sat down before the old mahogany secretary and turned the key. Then, pulling out the first long drawer, he placed his hand far back into its recesses and drew out the roll-top desk.

Kitty, his little grand-daughter, peeped around the door-facing, and, seeing that he was occupied, she tiptoed softly into the room. If there was anything Kitty liked, it was to be allowed to view the contents of Grandfather Bryant's secretary. In it were portraits of gentlemen with ribbon-tied hair, ladies with powdered curls, queer jewelry, and bundles upon bundles of letters yellowed with age.

As Kitty made her way on into the room she was wondering if her grandfather could have forgotten that this was her birthday, or his promise to let her have a peep into one of the secret drawers when that important day should have arrived. He was busy, it seemed, so of course she would not bother him; but she would just take another look at the mysterious drawer, and try to imagine what she would see when it was opened. How she did hope grandfather would remember!

At last she was so near to Grandfather Bryant that she could place her hand upon his shoulder, but still he did not turn to look at her. Kitty wondered how grown-up people could be so absorbed in old yellow letters that they could forget one's birthday. But what was this, —there was grandfather's hand approaching the little secret drawer, —and—yes, to be sure, there! he had turned a funny little knob. First it went back, then forward, then back, then all the way round, then—but there the drawer was open! Grandfather was smiling back at her, and must have heard her all the time.

"Oh, grandfather, it's my birthday, you know," she cried, leaning over him and placing an arm about his neck.

"Yes, sir, that's a fact," acknowledged Grandfather Bryant.

"And—and—please, sir, you know what you promised," stammered the blushing Kitty.

"Let's see," said grandfather, "you were to look into a certain drawer, I believe."

"Oh, yes, sir, that was it," cried the delighted Kitty.

"Then, as this is the important day, perhaps you will look, Miss Kitty Bryant,—that is, if you care to."

"Oh, grandfather, if I care to!" exclaimed Kitty, so excited she did not see the merry twinkle in her grandfather's eyes.

Kitty had been eager to look, and yet, now that the time had come, she found it had been lovely to have the surprise to look forward to,—but she must look, and look she did. There in the little secret drawer she saw a little green satin teakettle, its little brass handle curving over its top, and its spout pointing right up at Kitty. On its satin sides were delicate little pink blossoms, and it was indeed a very pretty little teakettle.

"Take it up in your hands," prompted Grandfather Bryant, and Kitty carefully withdrew the kettle from its hiding-place.

"Why, why," she cried, "the top can be taken off!"

"Yes," agreed grandfather, "you may take it off."

Off came the little top, and from within a sound of a little "tick-a-tock, tick-a-tock," greeted the little girl.

"Oh, grandfather," Kitty cried, placing her eyes nearer to the open top, "there's a little watch inside!"

"Well, well," mused grandfather, taking a peep, "and so there is."

Kitty reached in and drew the watch out. It was an old-fashioned, key-winding one, decorated with blue enamel. The key was tied to the gold ring in the top of the watch, and on the inside of the case were the letters "K. B."

"It must have been grand-mother's," Kitty exclaimed. "It must have been!"

The mist formed in grandfather's eyes. "It was," he explained, "but now it is to belong to another little Kitty Bryant."

"Tick-a-tock, tick-a-tock," called the little watch.

Kitty placed her soft warm cheek against grandfather's. "I'm going to be the best little mistress to it!" she whispered.

Grandfather Bryant placed a trembling hand upon her sunny curls, saying, "Had I not known this, dear, I would never have trusted you with it."

"Tick-a-tock, tick-a-tock," agreed the little watch, keeping the exact time of Kitty's little heart, which was also going "tick-a-tock, tick-a-tock," with sweetness and joy.

"Bobby," said the lady in the street car, severely, "why don't you get up and give your seat to your father? Doesn't it pain you to see him reaching for the strap?" "Not in a car," said Bobby. "It does at home."—The Advance.

Mrs. Best's Letter.

My dear Friends: I had the privilege this week of attending the State Fair at Sacramento and of enjoying the new Woman's Building there.

This building is attractive in exterior and well furnished inside and is for the exclusive use of women, both for exhibition purposes and as a resting place. There are a few show cases, containing embroidery, crocheting, hand-painted china, etc., but the great feature of it is the large waiting room with comfortable chairs and settees, potted plants, long French windows opening onto porches and generous windows prettily curtained. At one side of this room is the nursery, fitted up with a couple of large beds and half a dozen cribs, high chairs, etc. Adjoining this is a small kitchen where milk may be heated or food prepared for infants. This nursery is in charge of a capable nurse and there is a doctor on duty also at all times.

At the other side of the large waiting room is a retiring room supplied generously with toilets, wash basins and a telephone.

It is a well-arranged, convenient building and to see the crowds of women there with their small children proved how much it was wanted and enjoyed.

In the columns of this department a few weeks ago, was a description of a rest room at Ripon for women, that although small and not well furnished, still provided the same kind of comfort and convenience that this beautiful building does, and I hope the time is not far distant when every small town and every fair grounds will have a suitable place for women to rest and attend to the wants of their children.

One of the things that I am sure all you mothers would have enjoyed seeing with me was the exhibit of school work.

With the exception of two displays sent in by a High and a Normal School all of the exhibits in this tent (and they were numerous) had been furnished by grammar school children—most of them being produced in the seventh grade. They consisted of baskets made from reed and raffia, manual training work in wood and garments, some made by machine, others by hand, and many of them either embroidered or trimmed with a hand-made lace.

But not alone in the domestic arts were women in evidence at the Fair, for in the poultry exhibit, some of the exhibitors were women and there were at least three women who had creditable exhibits in pure-bred stock—these women are successful enough to prove that a woman with brains and determination can succeed at anything she wishes to do. Rosabella Best.

CARE OF GLOVES.

When putting gloves on, always button the second button first. Then you can more easily fasten the first button without tearing the kid. To remove never pull off by the fingers; turn them off wrong side out and let them air before turning them to their proper shape. Always lay gloves lengthwise—never roll them.

TIRE PRICES

Goods shipped to all points C. O. D. Money refunded on goods returned intact within one week.

Size	Special Prices on Plain Tread	Gray Tubes	Red Tubes
28x3	\$ 6.55	\$1.75	\$1.95
30x3	6.95	1.85	2.10
30x3 1/2	8.95	2.10	2.35
31x3 1/2	9.45	2.15	2.40
32x3 1/2	9.95	2.25	2.45
34x3 1/2	10.95	2.30	2.55
36x3 1/2	12.05	2.40	2.75
38x4	13.20	2.80	3.10
31x4	13.85	2.85	3.20
32x4	14.05	2.95	3.30
33x4	14.70	3.10	3.40
34x4	14.95	3.15	3.50
35x4	15.65	3.20	3.60
36x4	15.85	3.30	3.70
34x4 1/2	20.25	3.85	4.30
35x4 1/2	20.85	3.95	4.35
36x4 1/2	21.25	4.10	4.50
37x4 1/2	21.90	4.15	4.60
35x5	23.65	4.70	5.20
36x5	23.95	4.90	5.35
37x5	24.90	4.95	5.45

Non Skid Prices in Proportion.

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Write for illustrated folder and time table.

Oakland, Antioch & Eastern Railway

L. H. RODEBAUGH, Traffic Manager.
Oakland, California

Good Health.

[By H. E. Pastor, M. D.]

Infantile Paralysis Again.

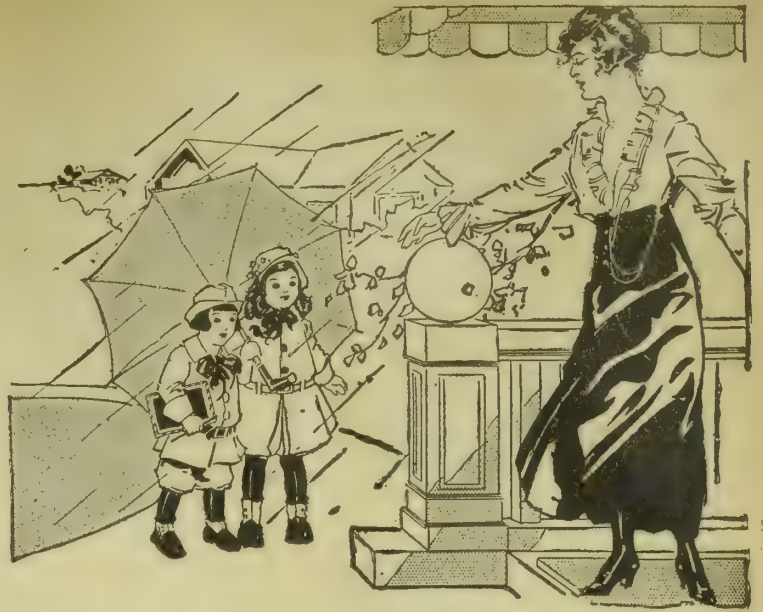
So great is the concern over the spread of this dread disease, and in view of its sporadic appearance on the Pacific Coast, the writer has been asked to add something to what was here written last week. There is little else to be said without going into the matter too extensively for our space limits. The symptoms were epitomized last week, also preventive measures were briefly outlined. In a circular issued on this subject by the Health Department of New York City, which lies before us, is found one or two points of prevention not covered in last week's resume, though they might occur to any parent endowed with ordinary gumption. It says: "Keep your children clean. Bathe them frequently. See that they keep their hands particularly clean. Be sure that each child has its own clean handkerchief." This is very good advice, but should not require an epidemic to suggest its observance.

Spices, Good and Bad.

The expression "good and bad" is not here intended to designate the quality of the various spices (through it might do so with propriety), but rather their physiological effect on the human system. In the late widespread effort to discredit chemical antiseptics, such as benzoic and salicylic acids, etc., as food preservatives a singular oversight is noticeable—little or no reference has been made to our common food condiments, whose value as fruit and vegetable preservatives is familiar to all, but whose relative merits are not so well known. Mustard and cloves are both active destroyers of germs which cause food decay, and at the same time are comparatively harmless otherwise. Cinnamon, nutmeg, mace, and allspice are all valuable in their respective spheres of usefulness, as well as palatable, their antiseptic properties as well as their palatability being attributable to the aromatic essential oils which they contain. The peppers, black and red, though so widely used, should be indulged in sparingly, as they are strongly irritant, and where used too freely are responsible for many cases of stomaclic ulcer and inflammation of the kidneys. The same objection applies, though in less degree, to ginger. As nearly all spices are subject to adulteration, care should be taken that only dependable spices are bought.

The Cost of Neglect.

A news dispatch of the 4th inst. states that a young rancher living near San Pablo had just died from the effects of a rabbit bite. It says that the victim paid no attention to the wound for a day. The teeth of nearly all animals are reeking with disease germs, and a bite from one should be treated immediately with some antiseptic—a solution of carbolic acid, permanganate of potash, peroxide of hydrogen full strength, an application of Antiphlogistine, or at least cleaned with soap and water, and soaked in water as hot as can be borne for 20 minutes or half an hour. Treatment should be repeated until symptoms disappear.



"Hurry, children—I've got a real treat for you."

Ghirardelli's Ground Chocolate

is a fortifying food beverage for all—from childhood to old age.

It comes PROTECTED—as all chocolate should—in 1/2-lb., 1-lb., and 3-lb. hermetically sealed cans.



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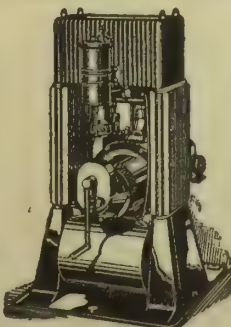
of Western Canada's Rapid Progress

The heavy crops in Western Canada have caused new records to be made in the handling of grains by railroads. For while the movement of these heavy shipments has been wonderfully rapid, the resources of the different roads, despite enlarged equipments and increased facilities, have been strained as never before, and previous records have thus been broken in all directions. The largest Canadian wheat shipments through New York ever known are reported for the period up to October 15th, upwards of four and a quarter million bushels being exported in less than six weeks, and this was but the overflow of shipments to Montreal, through which point shipments were much larger than to New York.

Yields as high as 60 bushels of wheat per acre are reported from all parts of the country; while yields of 45 bushels per acre are common. Thousands of American farmers have taken part in this wonderful production. Land prices are still low and free homestead lands are easily secured in good localities, convenient to churches, schools, markets, railways, etc. There is no war tax on land and no conscription.

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FIGURES GIVEN
ARE INDEPENDENT
AND RELIABLE

Pacific Rural Press Market Report

PRICES QUOTED
AS PAID TO
PRODUCERS

San Francisco, Sept. 13, 1916.

Wheat.

Eastern market strong and active, with some firmness here but no further advance except on California club.

[f. o. b. San Francisco.]

Sonora wheat	....\$2.10	@2.15
Northern club	....2.10	@2.15
Calif. club, ctl.	....2.10	@2.15
Northern Bluestem	....2.35	@2.40
Northern Red	....2.20	@2.40

Barley.

Local prices unchanged but firm, and lower than country quotations, as some local interests bought early at lower prices. Growers are holding very firmly.

[f. o. b. San Francisco.]

Shipping, ctl.	....\$1.75	@1.80
Choice feed, ctl.	....1.67½	@1.70

Oats.

Values unchanged but firm, with good demand for feed grades and large inquiries for seed.

[f. o. b. San Francisco.]

Red feed	....\$1.80	@1.85
Red seed	....2.00	@2.10
White	....1.75	@1.80
Black seed	....3.00	@3.25
Texas Red seed	....2.25	@2.35

Corn.

Yellow is quiet but rather firm. Egyptian quite strong, with little desirable stock of other sorghum grains offered.

[f. o. b. San Francisco.]

Eastern Yellow, ctl.	....\$2.05	@2.10
Milo Maize	....	Nominal
Egyptian	....1.95	@2.05

Beans.

No change aside from a slight drop in bayos. Lima harvest is starting in some places and will soon be general, with prospects of a very good crop. Other grades will not be ready until later; but barring danger of early rain and frost the crop outlook is excellent in practically all lines.

[On wharf, San Francisco.]

Bayos, per ctl	....\$4.75	@5.00
Blackeyes	....3.50	@3.60
Cranberry beans	....5.00	@5.20
Horse beans	....3.25	@3.50
Small Whites (south)	....	Nominal
Large Whites	....	Nominal
Pinks	....5.50	@5.75
Limas (south)	....5.30	@5.40
Red Kidney	....	7.00
Mexican Reds	....5.25	@5.40
Tepary beans	....4.50	@4.75

Seeds.

A very heavy demand is coming out for cover crops, which in some lines is hard to meet. Alfalfa is coming in, and shows a drop in price; mellilotus Indica is lower. Vetch is scarce and firm.

[Wholesale prices, S. F.]

Alfalfa, per lb.	....22	c
Oregon Vetch	....6	c
Mellilotus Indica	....7½	c
Mellilotus Alba	....20	c
Bur clover, re-cleaned	....10½	c
Canada Field Peas	....5¼	c

Hay.

The car shortage bad as ever, and local market is depending mainly on river shipments for supplies. There is no real shortage, but there is only enough coming in to meet current needs, and values are firmly maintained. Many holders in the country are anxious to move hay, but there seems to be no weakness as to values, as requirements are known to be large at many interior points, and no trouble expected in getting satisfactory prices as soon as cars are available.

[Wholesale prices per ton, carload lots, San Francisco.]

Wheat, No. 1	....\$13.00	@14.50
No. 2	....10.00	@12.00
Tame oats	....11.50	@15.50
Wild oats	....10.50	@13.00
Barley	....10.50	@13.00
Alfalfa	....10.00	@14.50
Stock hay	....8.50	@9.50
Straw, per bale	....	.35 @ .50

Feedstuffs.

[Wholesale prices, per ton, carload lots, San Francisco.]

Beet pulp, per ton..	Nominal
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Alfalfa meal, per ton.	\$18.00 @19.00
Bran, per ton	27.00 @28.00
Oil Cake	Nominal
Cocoanut cake or meal	23.00 @25.00
Cracked corn	44.00 @45.00
Middlings	35.00 @38.00
Rolled barley	34.00 @35.00
Tankage	45.00
Rolled oats	34.00 @35.00
Rice middlings	30.00 @32.00

Vegetables.

Summer vegetables in general continue in more than liberal supply; it is impossible to clean up the arrivals of many kinds from day to day. Prices accordingly show no improvement in most lines.

Celery, Alameda, bunch	....10 @15c
Cucumbers, lug	....15 @30c
String Beans	....2 @ 4c
Lima Beans	....3 @ 4c
Summer Squash, lugs	....25 @30c
Peppers, bell, box	....25 @30c
Eggplant, lugs	....30 @40c
Peas, lb	....5 @ 6c
Tomatoes, lugs	....25 @50c
Green Corn, sack	....50 @1.50
Okra, box	....40 @60c

Potatoes and Onions.

The shipping trade has continued in the market for potatoes to some extent, and with moderate offerings of river stock prices are firm. Salinas slightly higher. No. 2 stock shows improvement. Storage operators and shippers both out after onions, with the result that prices are higher.

[On wharf, San Francisco.]

Potatoes, ctl., Delta	....\$1.50	@1.90
Salinas	....2.25	@2.50
No. 2	....	.75 @1.00
Sweet Potatoes, per lb	....	2½c
Onions, yellow	....1.50	@1.75
Garlic, new crop, per lb	....4	@ 5c

Poultry.

The local demand picking up, with high prices in the East diverting shipments from outside points, values show some advance. Broilers and fryers are strong, with slight advance on extra hens and roosters. Ducks and Belgian hares share in

advance; turkeys are firm.

[Wholesale prices, S. F.]

Turkeys, live, lb	....23 @25c
Broilers, 18 lbs to doz. and less, lb	....23 @27c
do, over 18 lbs. to doz	....23 @25c
Fryers	....23 @24c
Hens, extra, per lb, colored	18 @20c
Small leghorn	....15 @16c
Smooth Young Roosters, per lb. (3 lbs. and over)	....23 @25c
Squabs, per lb.	....28 @30c
Geese, per pair	....2.25 @3.00
Ducks	....13 @14c
Old	....13c
Belgian hares	....10 @11c

Butter.

Further heavy shipments have left for England, but the movement has forced prices up to a rather high level, and it is thought highly improbable that any more will go that way for present. Local consuming market in good shape, with some demand from outside points.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	30½	31	—	30½	30	31
Prime 1sts	28½	29½	—	29½	29½	29
Firsts	28	28	—	28	28	28

Eggs.

Extras show further advance, being far above prices of same date last year. Production at nearby points is falling off, and there is some inquiry from other markets.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	38	38	—	38½	38½	38½
Sel. Pul.	32½	32½	—	33	33	33

Cheese.

Y. A.'s are easier, but Monterey cheese shows an advance. Advance in Eastern grades causes a firmer feeling.

[S. F. Dairy Exchange prices.]

Y. A.'s fancy	16½ c
Fancy Calif Flats, per lb	14½ c
Monterey Cheese	15 @ 16c

[Los Angeles Dairy Prices.]

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter	32	33	33	—	31	31½
Eggs	35	36	37	—	37	37

Deciduous Fruits.

Local prices in most lines are pretty well maintained, with offerings of some varieties decreasing. The

berry list has been narrowed down, strawberries are higher, though raspberries and huckleberries are lower. Astrachan apples have been cleaned up, bellflowers are rather weak, as the crop has turned out above expectations. Newtowns are moving in good shape, with strong shipping demand. Bartlett pears are higher here, but have slumped in Eastern market. Peaches are lower, with heavy offerings of rather poor stock. Quinces easy and plentiful, black figs have been shaded. Watermelons have been marked up sharply, and casabas are becoming a prominent feature. All lines of grapes have stiffened up a little, while offerings are liberal they clean up readily, quality in most lines being good. Wine grapes bring \$16 to \$18 per ton.

[Wholesale prices, San Francisco.]

Huckleberries, lb.	....7 @ 8c
off grade	....3 @ 5c
Raspberries, chest	....4.00 @5.00
Strawberries, chest	....2.50 @4.50
Apples, Alexander	....60 @ 75
Bellflower, box	....75 @ .85
Jonathans	....75 @1.00
Newtown	....85 @1.00
Pears, Bartlett, bx, No. 1	1.50 @2.00
No. 2	....75 @1.00
Peaches, lugs	....60 @ .75
Carriers	....70 @ .90
Quinces, lugs	....40 @ .50
Figs, Cal. black, box, double layer	....35 @ .50
White, single layer	....40 @50c
Plums, crate	....75 @1.00
lugs	....75 @1.00
Prunes, crate	....60 @ .85
Cantaloupes, std. crate	....70 @ .75
Casabas, crate	....75 @1.00
Watermelons, doz	....1.50 @2.50
Grapes, Malaga, small box	60 @75c
Muscat, small box	....65 @75c
Grapes, Thompson, crate	....75 @85c
Tokay, crate	....65 @75c
Isabella	....65 @75c

Dried Fruits.

As has been expected for some time, the dried fruit market in general is taking a strong turn for the better, and local packers report satisfactory movement to consuming markets. The situation favors an unusually large domestic consuming demand for the coming season, and a fairly strong market is expected from now on. Peaches are moving off in very satisfactory shape at the advanced prices. Apricots, which were neglected for a time, have been marked up another ½ c., and all offerings at present figures are rapidly absorbed. Figs quite firm, most good stock being already out of growers' hands. Packers again out after prunes, market is very strong, with prices slightly higher. [Net to growers, bulk basis, f. o. b. shipping point.]

Apples, new crop	....4½ @ 5½c
Apricots, per lb. 1916	12½ @13 c
Figs, white, 1916	....5 @ 5½c
Figs, blk, 1916	....4 @ 4½c
Calimyrna, 1916	....9 @10 c
Prunes, 4-size basis, '16	5¼ @ 5½c
Peaches, old	....5 @ 5½c
1916	....5½ @ 5¾c
Pears	....6½ @ 7 c

Citrus Fruits.

Eastern citrus auctions are a trifle lower on lemons, but about the same as last week on oranges. At New York on Monday, Sept. 11th, valencias averaged \$2.90 to \$5.95 per box, and lemons \$5.85 to \$6.75. At Chicago the same day valencias averaged \$3.95 to \$4.90 per box, lemons \$4.95 to \$6.55. Shipment to date for the season now are about 30,000 cars of oranges and 6,500 cars of lemons. It is estimated that about 2,500 more cars of oranges will be shipped by the end of the season.

Western demand for oranges has caused a shortage at shipping points, and values have been advanced sharply, this being reflected in a corresponding jump in the San Francisco market. The local movement is not heavy, as deciduous fruits are getting most attention. Lemons in good demand for the last week, grapefruit also moving well.

Special Deciduous Market Report.

By J. L. Nagle.

The increased shipments and inferior quality of Malagas from several districts has considerably affected Eastern markets, with the result that inspection is very severe and demand not as responsive as on Tokays, which are being purchased readily at high prices and in fact the demand for Tokays exceeds supply. Malagas, however, on good stock is active in the small markets. There has been some complaint about the quality of the Tokays, the first shipments having contained shot berries to a very large extent, which did not carry and caused considerable decay.

The late Peach market, with the exception of Clings, has been affected by Eastern competition. Had the Salways and other late freestones moved East when the trade wanted California peaches, all cars would have been consumed at satisfactory prices but this late variety does not color sufficiently to warrant Eastern shipment when the demand is at its height, consequently growers are forced to withhold shipment awaiting color. The demand for Clings,

however, has been exceptionally active and though some varieties have not been holding up in transit, sound fruit has been realizing exceptionally high prices.

There is also a very strong demand from all sections of the country for California wine grapes in lugs, prices ranging from \$20.00 to \$22.50 net f. o. b. California. Whether or not this will continue long is speculative, as Eastern growers are willing to sell on board the cars at \$8.00 to \$10.00 a ton.

The following prices have ruled for the week:

New York—Tokay grapes averaged \$1.57; Malaga, \$1.25; Muscat, \$1.00; Cornichon, \$1.55; Bartlett pears, \$2.65; Levy peaches, \$1.00; Salway, 75 c.; Orange Cling, 95 c.

Chicago—Tokay grapes, \$1.25; Malaga, 95 c.; Salway peaches, 65 c.; Phillips, 76 c.; Bartlett pears, \$2.15.

Total shipments to Sept. 11, 10,937 cars; total shipments same date 1915, 8730 cars.

Special Livestock Market Report.

San Francisco, Sept. 13, 1916.

Cattle—The local dressed meat market is weaker and prices have been cut accordingly. Few feeders have been bought in Northern California or Nevada as yet and it does not seem probable that many will change hands at the present holding prices on account of the high prices of hay and grain in all of the feeding districts. The same condition is apparent all over the country.

Hogs—The supply at this market has been steady for the past three

weeks, with stubble hogs improving in quality. The market is being crowded with lightweights and packers have shut off entirely on that class for the present.

Sheep—The big end of the sheep supply from all over the West is being attracted to Eastern markets on account of the prevailing high prices there. Locally, supplies from northern California and Nevada are meeting the requirements.

Wool—There is little to report. Buyers here are free sellers but claim there is no market.

P.R.P. 9

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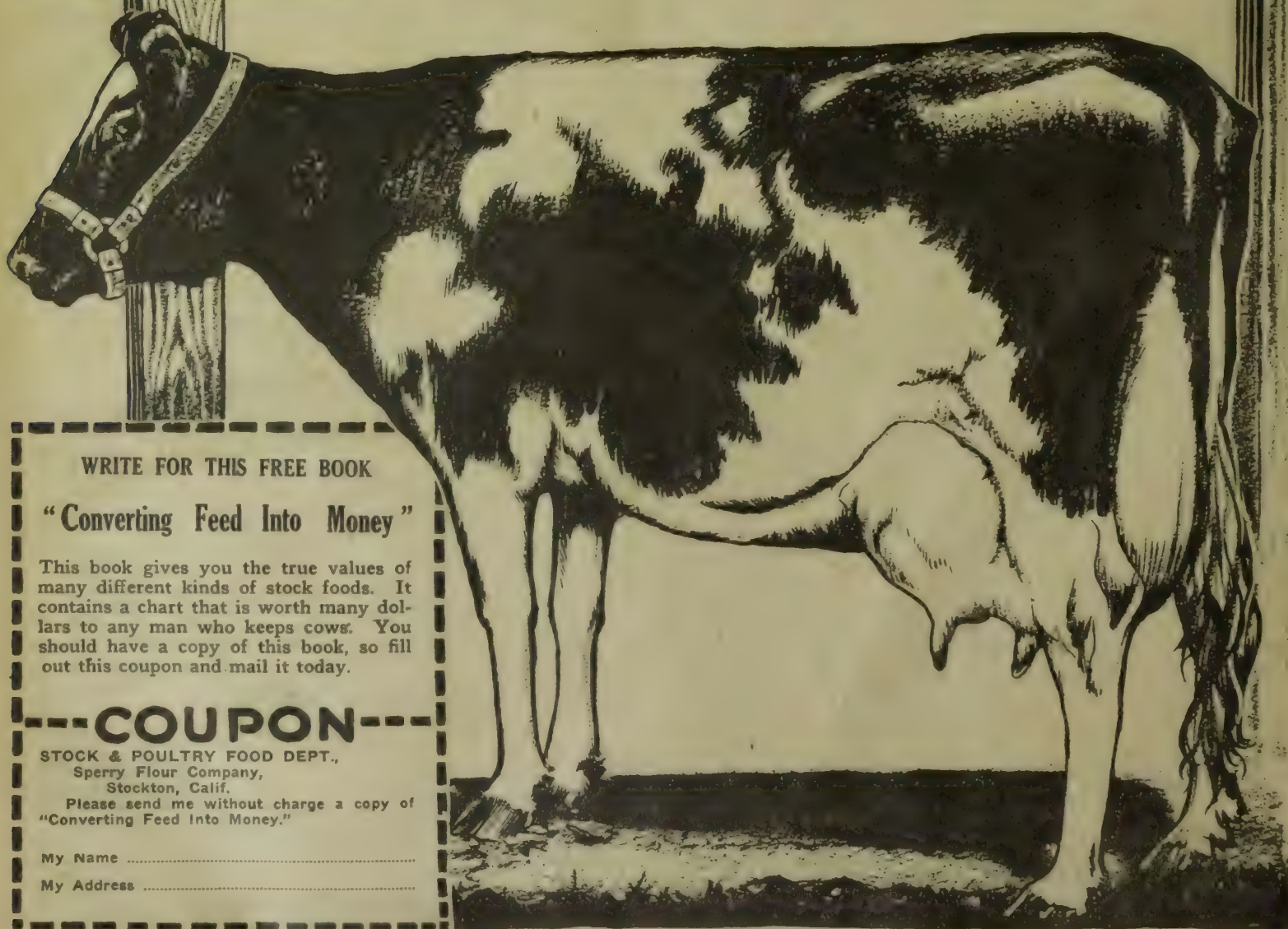
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THE PACIFIC RURAL PRESS

SAN FRANCISCO

SEPTEMBER 23, 1916.

LOS ANGELES

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A Home Folks Gathering, and Water.

How a Home-Loving Community Holds a Home Folk Fair to Attract More Home Folks Settlers.

[Written for Pacific Rural Press.]

AT FIRST glance there is nothing to distinguish the South San Joaquin Community Fair from the other small agricultural shows you have attended in all parts of the State. There are the familiar tents, the merry-go-round, and row after row of automobiles which seem to be the symbol of agricultural prosperity nowadays.

You first realize that this fair is different from others when you begin feeling in your pocket for the coin with which to gain admittance. You look for the ticket seller, then the ticket collector. Both are missing. You ask the man next to you what has become of them and he tells you, "We don't have such critters here." So in you go.

"Pretty good little show, isn't it?" says a cordial speaker, and you explain to him that you have just arrived. That's his cue to get busy. No longer are you a stranger in a strange land. Your chance acquaintance knows everybody he meets and you do too as quickly as he can introduce them to you.

"Here's a man from Manteca I want you to meet," you are told. "That's where we held the first of these fairs last year. This year it's Ripon and next year Escalon."

Before your guide can pull you away, your newly made acquaintance from Manteca informs you that since the water came, two years ago last May, his section has started to develop along agricultural lines in real earnest. Alfalfa leads, but 4000 acres of sugar beets have been planted this year and the yield has been highly profitable. Melons, which at one time, before the water came, made the Manteca district famous, are still an important crop, as are also Indian corn, sorghums and beans. "But say, why can't we jump in my machine and take a trip up there?" he asks. It's only seven miles from here and we have the State Highway connecting the two towns."

Assuring him that you have been through Manteca both by rail and auto and that you'll drop in and see him some day, you follow your guide to the refreshment booth where the ladies are serving ice cream and soda pop. Hung conspicuously above this booth is a sign reading "Parent Teachers' Association."

"Wouldn't believe all this came about through the ladies, would you?" asked our guide. "Fact, though. A farm woman up here a few miles conceived the idea of holding these community fairs. She took her idea to a meeting of the Parent Teachers' Association and the way those mothers hustled us men folks around to their meetings was a caution. Of course they had their way and a good way it was, too. Did a lot of good. People got better acquainted with each other and saw what could be grown. But say, I'm monopolizing all of your time and I promised to help put up an exhibit over in the other tent. Hey, John, here's a man wants to see what water and South San Joaquin Irrigation District soil does. Show him around, will you?"

Now John was from the Escalon section. Over his way alfalfa, dairy cows and hogs predominate, the same as around Ripon. Like all of the 71,000 acres served with water from the irrigation district's ditches the farmer in the Escalon country has plenty of water. "The only thing we need," he assures you, "is more people. We've got thousands of acres of as fine soil as can be found in this South San

Joaquin District. We are close to tide water, have good transportation facilities by rail, boat and motor truck and are close to the metropolis of the State, but land and water won't produce without farmers. Of course we've only had the water two years and new people are coming into the district every day. Not so fast as we would like, but you see all of the boosting this country has ever had is what we who are establishing our homes here could do. As a matter of fact we are just beginning to realize the possibilities of the district ourselves. Take this booth, for instance. There are 131 different varieties of field crops and vegetables that one man grew on five acres of land. Few of us ever imagined so many different things could be grown here. Personally I believe the thing most of us will eventually engage in is alfalfa, dairy cows and hogs. Some of us have got sidetracked into corn, beans, melons, sunflower seed, and this year into sugar beets, but with most of us this is a home-making proposition and we need a permanent form of agriculture. There's something over 3000 dairy cows in this district now, but that's only a starter. Our herds only average about



Scene at a Branching of the Canals of the South San Joaquin Irrigation District—the Life of a Principality.

11 cows each, but it's surprising how fast they increase. And hogs, too. Take hogs, good alfalfa, skim milk and corn like we grow and you have a hard combination to beat."

Advising our friend John that we were particularly interested in stock we were hustled through the rest of the fruit, vegetable and field crop displays, stopping long enough to see the school exhibits and to say hello to bankers, farmers, irrigation engineers, etc., all of whom John had a good word for, then past the Farm Adviser's booth, another important factor in the development of this newly watered empire, through a poultry exhibit that was highly commendable, past innumerable farm utensils, finally arriving at the stock sheds.

Horses, dairy cattle, hogs, sheep and goats were on exhibit. Most of them, you knew at a glance, belonged to men who made their living with them. They weren't showing for money prizes.

"I just brought my stock in to help out," was the common response to our questioning. And that, we found, is the reason no gate receipts are necessary. Everybody puts his or her shoulder to the wheel and helps. The sole aim of everybody seemed to be to further the interests of the communities embraced in those 71,000 acres of irrigable lands.

As we started to leave we felt another elbow in our ribs and looking around found our first made acquaintance. "Say," he said, "if you write anything about our show for your paper don't forget to say that the irrigation ditches are extended to every 40 acres, that we have concrete gates, a new reservoir that will hold 35,000 acre feet in addition to our regular supply. What! got to catch a train. Well, be sure and be at Escalon next year. Better than ever, you know."

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EDITORIALS

THE WEEK.

AS THE edge of the interior heat is dulled by shortening days and southerly sun, and as the grinding surfaces of coast winds are smoothened by the inflow of southerly breezes, there come to California the delights, the inspiration, and the opportunities of the most distinctive subdivision of our seasonal year—the autumnal springtime. It is distinctive because it is peculiarly our own; no other State of this country has it in the duration of its joyful influence upon the life of man and in the depth of its industrial significance. The poets have poured out most mellifluous song as the glories of the Eastern Indian summer shone upon them, but Indian summer is the prologue to a tragedy—the smiling salutation among creatures of the organic world entering a dance of death; we, about to die, salute thee. In what sharp contrast comes the California vernal autumn, the time of sprouting seeds, of flower-decked fields, of new garden-bloom; the haven of migrating northern birds; the home of winter-flying butterflies! And to mankind there comes more than the joy of these things—the awakening of energy, the inspiration to action, the suggestion to go to work, not only for immediate achievement, but in seasonable preparation for a whole year's attainment, and often the actual measure and price of a whole year's reward. September!—the birth of a new year, not only for all-enveloping nature, but for most that man has industrially to do with it. September!—the birthday of the California spirit, in the breadth of life's enjoyment, in the impulse to new enterprise, in new loyalty to the State and its advancement, in incentive to a new and stronger stroke at common work, which becomes a man and proclaims his title to his birthright in this favored land!

A YEAR OF FAIRS.

THE year of the greatest of all world fairs, the Panama-Pacific, is naturally followed by the year of California fairs, of which this issue continues to remind the reader. We have now, in continued excellence, the California-Panama Exposition at San Diego, which is now at the service of Californians for the objective of an autumn trip by train, steamer or State highway, before the new flock of Eastern winter-fliers arrives later in the year. We are also having a series of county and district fairs, which are awakening unusual interest among our own people in different parts of the State. Nor are they lost upon visitors from abroad, for the State is unusually full of tourists, although the threatened railway strike did send many of them scurrying homeward, wishing now they had not, for it was a deep philosopher who said that "when a man found that he could do a thing, he didn't want to." It is worth noting, in connection with outlines in other columns, that we have two new phases of local fairs this year; the fair of the Farmers' Bureau, for the purpose of making itself wiser, of which a good instance is that in Napa county, and the fair made by a community with the declared purpose of making itself larger, like the event at

Ripon, of which an associate gives an appreciative account on the first page of this issue. The three settlements of Manteca, Ripon and Escalon view each other from the points of a triangle; but they are really in spirit and community feeling, points upon an enclosing periphery of a circle of good feeling and sympathetic interest, and their joint agreement to rule out the dollar and all its offspring from association with their neighborhood joy and satisfaction is proof that there is one place, at least in California which does not carry its heart in its pocket. The State will surely be the better for what farmers are doing for themselves at this year's fairs, and their less reliance upon more professional promotive agencies.

HELP FOR THE HUNGRY.

AS OUR producing year begins anew, it is important to remember that California may have more to do than usual during the next few months in piecing out some products which the Eastern States have not gathered in usual abundance this year. The general condition, as made out September 1 by Orange Judd Farmer, is shown by contrasting acre yields in bushels this year and last, as follows:

	Yield 1915	Yield 1916
Corn	29.4	24.1
Winter Wheat	17.0	13.6
Spring Wheat	18.2	8.2
Oats	37.6	30.2
Barley	31.6	23.2
Potatoes	102.7	91.0

We choose the acre yields rather than the billions and millions of total crop because it seems easier to grasp the difference in that way. Any one can figure the percentage of decrease in each crop if that contrast appeals to him as more intelligible. The conclusion must be that production is notably short in all these crops and proportionally the same in other lines of food products, such as pasturage products, field vegetables, etc. It means not only reduced food-product exports, but high prices for both human food and animal feeds and forage.

Of course, we cannot do much for the East in grains, because California is now a wheat, corn, and oat buyer. We can help with barley, which is about our only export cereal nowadays, but Eastern people will drink what they can get of that, and not eat it. And we shall buy back some of that barley in the imported beers which are now being flamboyantly advertised in this State. But we can do something to advantage in beans, rice, and winter-shipped field vegetables, as well as helping out with large quantities of cured fruits of all kinds. It looks as though we could dispose profitably of all the potatoes we can get out of the ground during the first half of 1917: the Eastern potato crop is reported small—from forty to fifty million bushels less than last year. And Californians, who know how to grow winter cabbage, and have a good place for it, should notice that it is figured that there will be, east of the Rocky Mountains, from one-half to two-thirds of a full normal crop, and cabbage is selling now at \$18 to \$20 per ton, with \$30 anticipated. Certainly the wide-awake Californian stands a chance to make some money out of one bunch of hypphenated Americans if he can get a crop of winter cabbage by going right to work at it. The Eastern sauerkraut value of the California autumnal springtime may seem to some people more moving than poetry.

A MORE FRAGRANT OPENING.

BUT it seems as though California had a more urgent call to help the country with onions than with sauerkraut. Certainly the call has come sooner, for onions have been going East continuously since the harvesting of the main crop along the rivers began. This has been largely due to the fact that California can sack dry onions earlier than other parts of the country, and there have been years in which shippers have stored supplies for advance, and held them too long because other States brought in late crops beyond expectation. And yet, with the character of the Eastern summer this year, and the effect it has had on cabbage, as just noted, it is likely that we shall have an opening for onions at the East next spring, or as soon as we can get our earliest crop of dry

onions from the earliest regions. Therefore, the onion is another thing for growers of winter crops to bear in mind. Current gossip is that when the first onions came in this summer a crop of not less than 4000 carloads was expected, but after harvesting it is found that the total falls more than 1000 carloads. It is estimated that close to 2000 carloads have been shipped, which leaves only 1000 carloads for California consumption, and all of this amount is said to be in dealers' hands. Growers are believed to have sold out and a coming price above \$2 per ctn. is looked for by holders of the balance of the stock. And so it looks as though California might find it very profitable to have more onions ready as early as possible in 1917 to help piece out a probable shortage both at home and in the East.

HELPLESSNESS AND RICE.

OF COURSE we do not mean that any Americans are going to be actually hungry—even for onions and sauerkraut. The country is too large and varied in its productions for that. The only thing we mean by hungry is less cheaply fed, and that will not matter so much considering the widely distributed wealth-winning of the last two years. But it is the traditional luck of the farmer to have less to sell when the price is high and some hard-hearted economists are inclined to claim that the price is high for that reason—which is a cruel effort to rob the farmer of the enjoyment of hard luck which properly belongs to him, because a short crop always costs relatively more to produce than a large one. But this does not seem to be very close to the helplessness of rice.

It is possible that if other cereals are high the American people will take more largely to rice cakes, rice puddings full of California raisins, and other bread-substitutes of rice which California is now preparing to present as attractively as possible to the American imagination. Those who do not think much about it, may wonder why the California rice growers are blowing so much chaff into the public eye through the daily papers about their co-operative marketing organization. They may say: is not rice a cereal like other grains which grow on grass-like plants, why then not throw it into the grain trade of the country and not make so much about it—as though it were a prune, a raisin or an orange? The fact is, of course, that rice in this country is not like a common grain and cannot be turned into food form at the cross-roads' mills, as other grains may be, and common grain dealers are not ready to handle it. Of course they could learn to handle it and make the growers pay well for their education too. And then no one but a rice-miller has any use for "paddy rice" as it comes from the field—though why it should be given this Irish name when it belongs to a Chink, we will not stop to explain. The great fact, however, is that the rice growers of California who have the outlook for a crop of over four million bushels this year, have organized to help each other meet the problems of marketing a new crop and do not propose to have themselves individually and their products beaten about by conflicting interests until these interests get all the profit there is in feeding rice-eaters. The California rice growers are starting in strongly with a new product and they are wise in trying to mark out straight lines for the distribution of it. The high prices of other cereals this year will be no disadvantage to them in their important undertaking.

RICE IN ROTATION.

SOME one the other day, speaking of the place of rice in a crop rotation, remarked: "It is probable that on land which will produce other crops rice will be grown only in an occasional rotation, and for the purpose of clearing the land of weeds." In the interest of accuracy it must be said that the main reason for rotation in rice growing is because other crops may clean the land which rice-growing befools. Keeping a shallow flood on the land for about three months induces the growth of semi-aquatic plants which have the power to practically dispossess the rice to the point of unprofitability. The recourse to rotation is to clean the land for rice not by rice. And we are not sure that it may not be also desirable to resort to rotation to clear the air of mosquitoes. One might fairly prophesy that plowing under in the fall the

rank carpet of water-grass, etc., which the flooding induces, would mellow and restore humus, which our hard valley soils often greatly need, to such an extent that the grain yields of pioneer days would be repeated; also that a year's return to dry farming in our interior climate would clean the land for renewed service in rice growing.

WATCH FIRES A LITTLE LONGER!

UNTIL the rains really soak things it is the duty of everyone to guard against field and forest fires. We have had several conflagrations which have caused great public concern and perhaps created too great impression that this was a year of unusual disaster. It is therefore comforting to learn from U. S. District Forester Du Bois of this city that the fire situation in the national forests has been held well in hand, though for the State as a whole the season has been a severe one. Since the beginning of the year, 888 fires, burning over a total of 55,861 acres, have

been reported by the forest officers as against 731, burning over 22,086 acres, for the same period of 1915. Of the fires this season to date, lightning caused 294; railroads and lumbering operations 82; the camper's fires increased from 189 of last year to 223 for this season to date. This is a small increase, considering that travel in the forests has been four times greater than last year. The average camper is showing greater care with fire than ever before. There is decrease of incendiary fires from 104 last year to 83 this season to date: thought to be due largely to co-operation between the forest service and mountain settlers in the burning of brush areas. Of the 888 fires for the season in the national forests, 416 have burned over less than a quarter of an acre each, 280 less than 10 acres, and 183 over 10 acres. The largest fire occurred on the Big Sur in the Monterey forest where almost 10,000 acres were swept over. A fire of 8,000 acres occurred on the California national forest. Both fires are attributed to the carelessness of hunters or campers.

As between the plants you name we doubt if you can improve in speed of either green feed or dry grain by changing from barley. Both Canada peas and horse beans will stand frost, but we never saw them grow faster than barley under usual winter temperatures. They are apt to slow down faster than barley under dry, cool conditions. Under warm, moist winter conditions they will make much more green feed than barley, and be much richer for growing pigs, but they would not serve you so well as barley to be hogged off as a ripe grain. These legumes can be either broadcasted or drill-sown as soon as the ground is moist deep enough to keep them growing.

It is a question as to how far you should try to go in substituting these plants one for the other. They serve different purposes, and it would be good for the hog if you could get a good growth of all of them.

Escaping Tomato Blight.

To the Editor: I wish to plant tomatoes upon land which I used for tomatoes until the blight got into it. I have grown other crops on the land now for three years. Would it be safe to replant tomatoes now? How long does it require to rid the land of tomato blight? I am anxious to use this side hill as it is frostless and we get very early tomatoes. Is there anything I can use to rid or clean up the land from this blight?—C. E., Goleta.

Three years has probably cleaned the land so far as rotation can do it—providing the three crops were of plants not subject to the trouble and therefore unable to maintain the germs thereof. Therefore you would be justified in replanting tomatoes with good anticipations. You do not describe the action of the blight and do not give us any clue to which of several blights destroyed your crop, but from what we can infer from the season of the year at which you would be trying to get an early crop, we judge you have to deal with the "winter blight" which appears during the rainy season and may destroy an entire crop. But you can check it and save the crop if you start in spraying with Bordeaux as soon as you see black spots appearing on the plants.

Trees for Chicken Yards.

To the Editor: Will you name some quick growing trees to plant in chicken yards for shade? How are the fig and elderberry for quick growth? I want to plant a number of different kinds this fall.—L. K., Florin.

We should not count the elderberry much of a tree, but rather a rangy shrub making, naturally, clumps of many stems and not much spread of shade. The California native elderberry is rather more tree-like and can be trained to a single stem, but it would be more trouble to do it than the result would be worth. If you want a thicker, elderberries planted six feet apart each way would make it. But we should prefer something more tree like. The fig makes a grand shade tree but it is not so quick about it usually as the apricot. Another good tree, bearing fruit for chickens, is the mulberry. Both white and black mulberries are good. If you do not care for the fruit, the California large-leaved maple and the black locust are very handsome and very fast, if they get water enough. If you wish quite a collection of trees, the best way to determine which do well under your conditions is to study the dooryards of the older residents. Some of the evergreens, eucalyptus, acacias, etc., are very rapid, but deciduous trees are better for chickenyards, which should be as dry as possible during the rainy season.

Not Ripe Enough for Raisins.

To the Editor: I send a sample of raisins: what ails them? They were dried without being dipped.—L. B., Live Oak.

They were probably made from grapes picked before development of enough sugar in the juice.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., September 19, 1916.

STATIONS	Past Week	Rainfall Data		Temperature Data	
		Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka	0	1.78	.75	66	46
Red Bluff	0	.68	.29	98	52
Sacramento	0	.07	.16	96	50
San Francisco	0	.33	.04	82	50
San Jose	0	.01	.19	92	44
Fresno	0	.08	.01	100	54
Independence	0	.22	.00	90	46
San Luis Obispo	0	.00	.17	96	48
Los Angeles	0	.00	.00	80	54
San Diego	0	.33	.00	74	56

By
the Editor

QUERIES AND REPLIES

Inquirers Must
Give Full Name
and Address.

Make a Good Start with Bulbs.

To the Editor: I have a piece of land with eastern exposure against a white cement house. I thought this plot would make an excellent bulb bed. The soil is very friable and well drained. Will you kindly inform me when and what bulbs to plant to insure blossoms the whole year?—J. L., Eureka.

Considering your situation on the northern coast and so near the ocean, you may expect grand results with such soil, exposure and protection as you describe. In hotter, drier parts of the State, the conditions might be too trying for spring and summer flowering bulbs, though good for winter bloomers. It is impossible in this space to discuss all the bulbs which should enter into such a long succession as you desire. Our book "California Garden-Flowers," has a detailed chapter on the subject and the special "bulb catalogues" of leading California bulb growers should be carefully studied, for they offer the bulbs at reasonable prices and give many valuable hints on the treatment of them. Send for the bulb catalogues as soon as you see them offered in our advertising columns.

It is now just the right time of the year to proceed with your planting. To begin in the fall and work forward is most promising. To begin in the spring is to lose practically the whole beautiful display of California winter bloomers, and to have only a short run of summer and fall flowering bulbs, with which no Californian should be content.

Guayule Not Yet for Cropping.

To the Editor: I have lately read of the cultivation of the Mexican rubber plant, guayule, being undertaken in the vicinity of Hemet. Do you think it likely the plant could be cultivated profitably in Antelope Valley, in the Mojave region?—C. J. M., Lancaster.

Though the plant "guayule" (*Parthenium argentatum*) has been under scientific study for several years and though its natural growth in the Chihuahuan desert has been quite widely used by rubber manufacturers, it is still a long way from suitable for planting as a crop. Nothing short of actual trial under your conditions will demonstrate whether you can successfully grow it. It may be interesting to try, as they are reported to be doing at Hemet, but no one should give time or land to it who needs speed and surety of actual returns. It is proper for institutional trial, as is now in progress at the Arizona experiment station, and practical planters should wait until the requirements of the plant are more clearly established. It has been shown that it will grow with very little rainfall; also that if one tries to speed up the plant with much irrigation or rainfall, he will get more growth and less gum—perhaps not enough to make it worth working. The slow natural growth, up to the profitable size of the shrub for working with a large percentage of gum, is estimated to require ten years. The plant is hard to start—only about 17 per cent of the seed coming under the best planned system of propagation, and it requires great care in transplanting. And

then, the plant is quite subject to depredations. In one experiment in Arizona, the jack rabbits ate down and killed the plants so in new places experimental plots have to be fenced and that would probably have to be done with crops until enough of it could be spared to feed the local population of jacks—which, perhaps, are few in the desert where the plant grows naturally. We do not advise anyone to think much of the guayule at present, except in an experimental way.

Practice Before Purchase.

To the Editor: I am at present a clerk with not very much knowledge concerning farming. Before buying any land or equipment I intend to work for a practical rancher for at least six months. Is that a good plan?—E. G., Los Angeles.

It is a very good plan, and will give you a chance to see how you like the real thing before blowing your money into something which may make you very homesick for counter-jumping. Some city people get wild about farming before they have any real knowledge of what it is and what it requires, and rewards. But of course you must remember that practical farmers, as individuals, are just like other people. You may go to work for a pessimist who can send the shivers down your back every time he opens his mouth; or you may hire out to an optimist who will make your head go light with his dreams of what he would do, if he had the money for it. As the poet says, such a man "never is, but always to be, blest." Try to hook up with a man who does a lot of his own work; who has a prompt, business-like manner as he works; who has a neat patch on the knees, but not on the seat, of his overalls, to show that his wife is onto her job of keeping him busy, and whose farm and farmstead show that he is wide-awake, and thrifty, and believes he is doing something worth while. If you find such a man, never mind about the wages; you will make more out of your half-year than he can.

Natural Cover Crop.

To the Editor: Is it necessary to plant cover crops in a pear orchard where a heavy green crop of wild oats, alfalfa, bur clover and weeds spring up voluntarily after the winter rains?—D., Wheatland.

It is not necessary, if the natural growth you describe is really heavy—that is, about as heavy as you can plow in. When it gets less than that, spread some stable manure in the fall, and get freer growth and more seed into the ground. If you have no stable manure, sow a cover crop. It is simply a question of getting under ground as much green stuff as you can and making that leguminous when you can.

Early Feed for Hogs.

To the Editor: I have been sowing barley for early hog feed, hogging it off in May. I would like to know if horse beans or Canada peas will make earlier feeds, and if there is any advantage in the substitution. When should they be sown and how?—R. S., Hanford.

Pruning Young Apricots.

To the Editor: There is a difference of opinion and practice as to the better method of pruning young apricot trees in this valley. The customary method is to cut back the main limbs each year for three or four years.

The other method is to allow the tree to grow from the time it is planted for four or five years, other than cutting off unnecessary limbs—keeping the tree symmetrical—keeping the center open.

The objections to the first method are: (1) By cutting back the limb, dead wood is formed at the point of cutting, weakening the limb. (2) It is contrary to the nature of the tree to cut off so much growth when the tree is young. Those who practice the second method claim that the tree is more vigorous and begins to bear earlier, and continues to increase. The limbs are stronger to sustain fruit. The tree is longer lived, etc., meaning that the tree is better in every respect by following the second method. Has it been demonstrated, absolutely, that one or the other is the better method?—A. W. T., Hemet.

[Nothing but death and taxes have been demonstrated "absolutely" and everywhere, because conditions dif-

fer. It is the general opinion that cutting back young trees induces them to become stockier and therefore stronger. The wounds on young trees trained reasonably open from the start, will not weaken the tree as a rule. So far as being contrary to Nature is concerned, very few of your objectors would care to eat the fruit of orchards cared for by Nature, and they wouldn't get enough of it to sell if they liked it. Modern commercial orcharding is necessarily artificial, and the fruits thereof are most pleasing.

On the other hand, we are not so sure much cutting back of young trees makes them appreciably stockier than they would grow if kept balanced and thinned out to make best growth.

With apricots, if you want early bearing, do not prune back the switches below the point where they branch out into a spray. If you think you will get enough better tree to pay for prevention of early bearing, the way is indicated.

LATE-PICKED RAISINS BEST.

[Written for Pacific Rural Press.]

Raisin picking is in full blast in Fresno county, but why the rush? Is there any more danger from rain late in September or early in October than now? G. M. Flint of Fresno county says that raisins must lie 10 days on the trays before rain will hurt them. If that is so, it might be better to delay picking as he did in 1915 until mid-September. The grapes would then contain more sugar, and make heavier, better raisins, of better color. More of the second crop could then be picked at the same time.

Our weather records for Fresno show that in no case, back to and including 1912, has there been even a trace of rain after the week ending Sept. 23 until after the second week in October.

In 1912, the only rain recorded is 0.1 inch in the week ending Sept. 3. In 1913, there was a trace in each of the weeks ending Sept. 2, 16, and 23. In 1914, there was .02 inch in week ending Sept. 22 and .18 during the following week. In 1915, there was a trace in the week ending Sept. 7.

In none of these four years was any rain reported in the first weeks of October.

People used to pick as soon as grapes would make raisins at all, because the early raisins were the only ones that sold for cost of production. The habit seems to remain, though the cause for it has been interred.

FUNGUS CAUSE OF ORANGE JUNE DROP.

The mysterious cause of "June Drop" of navel oranges is now believed by the University of California to have been found. That a fungus of the genus *Alternaria* is the cause is the theory advanced in the September issue of the University of California Journal of Agriculture by J. Eliot Coit, Professor of Citriculture, and R. W. Hodgson, a graduate this year of the College of Agriculture. The infection occurs in the blossom end. It is more serious in

the interior districts than in the coast regions because in regions of heat and low humidity the extreme transpiration of moisture by the foliage brings about a daily reversal of the sap current, which sucks the poison produced by the fungus back through the joint in the stem, causing it to weaken and break. It is now suspected also that this same fungus is responsible for a considerable proportion of the "splits" occurring in the interior valleys.

Having found a probable cause, the University is now carrying on experiments in the hope of finding a means of controlling the "June Drop" through prevention and control of the infection of navel oranges by the *Alternaria* fungus.

GROWTH OF CITRUS EXCHANGE 1915-16.

[By G. Harold Powell.]

The movement of California shippers towards the Exchange during the past year has been the largest in recent years. The combined efforts of the Field Department, the local Associations and the District Exchanges in giving growers a more complete understanding of the Exchange system, have brought into the Exchange fourteen shippers who formerly marketed through other channels, and nine newly formed associations. In addition, individual growers representing 4,379 acres and more than 1,560 cars of fruit have joined and shipped through established associations.

For the coming season four shippers (not included in the above data) who formerly marketed through other channels have joined the Exchange, and individual growers representing 1,600 acres of fruit have recently become members of the organization.

PEACH BLIGHT AND SHOTHOLE OF APRICOTS.

[Written for Pacific Rural Press.]

Shothole of apricots and blight of peaches are the same thing. They are unnecessary. They caused untold damage and many inquiries to this office last season, when it was too late to remedy the trouble.

This disease must be sprayed with a fungicide, usually Bordeaux in November and again with Bordeaux or lime-sulphur in spring when leaves open. Spraying is too late to be effective even after Dec. 1.

The disease is a fungus which makes shotholes in the leaves, dark, scabby spots on the fruit, and deadened spots on the twigs, doing its special damage around peach buds which ooze gum in spring after infection, and die.

Its presence on cannery fruit requires that fruit to be thrown out, as remarked by W. C. Huston of

Sutter county.

The shothole scabs go so deep that the lye process of peeling does not remove them. Mr. Huston says that a man cannot pick and sort a ton a day of Tuscan. The expense of sorting, the loss of fruit buds, and of the fruit which does mature, are a high price to pay for negligence in fall spraying. We will have more to say about this later if our subscribers desire it.

There is more time for pruning lessons now than when pruning begins. How do your neighbors do it?

ANY STRONG MAN can squeeze out enough money to invest in that which will bring back dollars in his right hand.

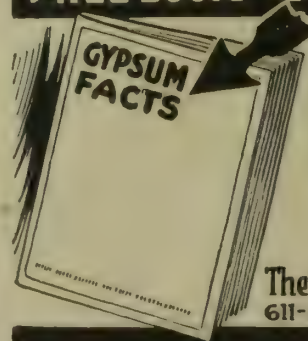


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Winter Sunburn Whitewash.

[Written for Pacific Rural Press.]

Sunburn of young fruit trees is not due so much to heat as to excessive drying out, which may be due to excessive heat or to lack of adequate moisture. If plenty of moisture could be supplied from within the trees, to the parts that are sunburning, there would be little damage. To these facts is due at least some of the winter sunburning of trees newly set out. The damage may not be noticeable to the passerby; but close inspection may show the possibility of sap flow greatly restricted by sunburn-damage to the bark.

Winter sunburn may often occur when hot dry days dry out small tree trunks, during dormancy of the roots when they are unable to supply needed moisture. The same is true of new plantings until roots

have become established. To prevent it, tree protectors are used or whitewash is applied.

To forestall many inquiries for whitewash recipes, we reprint one mentioned in our "Second Thousand Questions in California Agriculture" as being specially durable.

- (1) Quick lime62 pounds
Water (hot)12 gallons
- (2) Common salt 2 pounds
Sulphate of zinc ... 1 pound
Water (boiling) ... 2 gallons
- (3) Skimmed milk 2 gallons

Slake the lime thoroughly in (1); dissolve the salt and sulphate of zinc in two gallons of water (2); pour (2) into (1) and add (3). Mix thoroughly. Two pounds of flour paste (dissolved in two gallons of hot water) may be added instead of the skimmed milk.

FIRST COMMERCIAL SHIPMENT OF TEHACHAPI PEARS, SEPT. 9.

To the Editor: The first commercial shipment of Bartlett pears from the Tehachapi district was made Sept. 9. It went to Eastern markets.

These Bartlett pears come mainly from the orchard of B. M. Denison, a few being from the older trees of the Tehachapi Fruit and Land Company.

The work of sorting and packing the pears is being done by an experienced force brought here by and under the personal supervision of W. S. Killingsworth of the Pioneer Fruit Company.

Mr. Killingsworth says that he understands there are no other Bartletts on the market at this time that have not been in cold storage; because of this fact, the quality of the pears, and the lateness of the ripening season, the Tehachapi Valley Bartletts are in a class by themselves.

These first commercial shipments mark an eventful epoch in our development; this spring it was currants; now it is Bartlett pears; a little later the new commercial planting of winter varieties of apples will be in bearing. C. T. McKinnie. Tehachapi.

APPLE STORAGE HOUSE.

To the Editor: Where can I get information as to the layout and construction of an up-to-date apple shed with storage capacity for a 25-acre orchard?—D. F., San Francisco.

[Chas. King of Sonoma county, with an apple orchard two to 40 years old, has a cold storage house with a capacity of 7,500 boxes or more. In this he stores Bellflowers, Spitzenbergs, Newtowns, and Wagners for himself and a neighbor.

The building is 40x60 feet, has no refrigerating equipment, but is kept cool by night ventilation. Some of the Wagners and Newtowns are held as late as Apr. 15. The shrinkage by decay, etc., does not exceed two per cent.

The floor and sides are of sawdust held in place by board sheeting inside and out, 8 inches apart. The ceiling has two layers of sheeting and 14 inches of sawdust, above which is six feet of air space, then

the regular gabled roof. The air space helps shield the ceiling from the heat on the roof.

Along the peak of the roof is a low, open, continuous cupola. On each of two sides are seven doors about two feet square, built like the sides, and located just above the level of the floor. At night these are opened. A wire screen on each prevents exit or entrance of any codling moths or rodents.

The fruit is stacked in trays 22 inches square and 3 inches deep. Their bottoms are of eight lath so spaced that apples rest squarely on them. One lath on each side leaves plenty of chance for ventilation.

Trays are stacked 30 deep in piles so there is an aisle from each door to the one on the other side of the house. A gentle draft of cold air flows in at night while the warmer air flows up through the cupola.

At the end of the season, the house is closed tight and sulphur burned to kill any loose insects.

GRAPE COVER CROP AND FALL CULTIVATION.

To the Editor: Is sowing some kind of grain in fall or winter a good fertilizer for a vineyard? What kind of grain and how is it best to sow it, and how high shall it be grown to make a good fertilizer? Would it be a good idea to work the land up after the first good rain in fall to give the rains in winter a better chance to settle in the ground and would it help the ground any?—J. P. G., Dinuba.

Why should you grow any kind of grain which adds no fertilizer, though it may help make some plant food more available to the vines, when a legume such as bur clover, melilotus, vetch, etc., will do as much or more good, besides adding a lot of nitrogen? We see no objection to fall plowing and cultivation except that it softens ground for pruning.

The Growers' Information Bureau takes exception to the prune production figures recently published by the Dried Fruit Ass'n. These figures claim, among other things, that in the past nine years 708,000 tons of prunes have been produced in California, which the Information Bureau contends are 119,500 tons in excess of the actual output. The variance cited is probably due to different methods of arriving at the total estimate rather than to any deliberate intention to mislead the public.

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See your local dealer and go over the machines with him, or write us for catalogues and information, but don't buy a disk harrow, spring-tooth or peg-tooth harrow, or cultivator this spring until you have seen the IHC tillage line.

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Wheat averaged in 1915 over 25 bushels per acre
Oats averaged in 1915 over 45 bushels per acre
Barley averaged in 1915 over 40 bushels per acre

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Are We Ready for New Zealand Flax?

[Written for Pacific Rural Press.]

The plant commonly known as "New Zealand Flax," (Phormium tenax) as a flag-like plant which has for years been grown in California as a garden ornament. It is vigorous of growth, tenacious of life, will stand considerable drought, and some alkali. It is a perennial and once established will endure and yield crops for many years.

The long, flag-like leaves are of a grayish green color; they will average 2 1/4 inches wide and 4 feet long, and consist of a mass of extremely strong fibers, the fibers being the full length of the leaves and small fibers stripped from a green leaf are stronger than equal size of good cotton thread. This plant, while it will grow in a comparatively dry soil and while it will stand a lot of drought, yet requires water to be developed profitably, and the plant doesn't care how much water you give it, in fact it just revels in an abundance of it and will grow like taxes, in a waterlogged soil and hasn't any objections to being occasionally overflowed.

The value of the plant is in the fiber only. In New Zealand enormous quantities are raised and one

of the chief exports of that country is the rope fiber, all of which comes from this plant. In our country not only is there an immense market for the fiber but a gigantic market is before us at all paper mills. Our paper mills are now paying from three to four cents per pound for old rope and old rags; the fiber of the flax does not need to be extracted for use in a paper mill. All that is necessary is to cut, wilt and dry the leaves the same as if it was hay, for, when thoroughly dried, the fiber contents of the leaves are over 90 per cent of the whole.

This plant, it is estimated, will yield two tons of dried leaves or unextracted fiber per acre per year, and the expense of handling the crop is very small, because once planted the only expense is mowing, raking, stacking and baling. In New Zealand as far as can be ascertained no cultivation is done at any time, the plants simply growing wild and covering the entire ground.

A better crop for the delta lands could hardly be hoped for, the use of paper is constantly increasing and the dearest ingredient used in paper making is fiber. No matter how cheap a grade of paper is made from wood pulp or anything else, some fiber must be used and the better and stronger the paper, the more fiber is required, so that an unlimited market is ahead of anyone raising fibrous material. Rags suitable for paper making have never sold here for less than \$15 per ton, and it is unlikely that this low price will ever be reached again. Therefore a crop that costs to raise less than hay, and that raises more tons per acre than grain hay and that once established never needs replanting, ought to be an ideal crop. Anyone owning wet land should give this New Zealand flax a trial. The writer believes that if fairly tried out, that in a few years all the low lands of our deltas now used only as pastures will be solid fields of fiber flax plants.

The plants are raised either from seeds or from root divisions. Seeds and roots can be obtained from any seedstore or nursery. There is no monopoly on these articles and no exorbitant prices to pay. This is not some new marvel just developed and being put on the market by some wizard of the vegetable kingdom, but an old and well-known plant, used for years in the Australian islands as a fiber producer and grown here in California in our gardens as an ornament. We just simply have never thought before of using it as a crop, and now that we have thought of it, let us make ourselves the great paper State of the United States. We have now several factories here which are at a loss to get fiber; amongst these being the Pioneer Roofing Material Co. of Los Angeles, The Paraffine Paint Co. of Emeryville and a new large plant being now erected in Richmond by the F. W. Bird Co.

The powder companies purchase great quantities of cotton fiber for use in making gun cotton and nitrocellulose; they could use this fiber instead. So another field is open to us; in fact the uses to which this fiber could be placed are endless.

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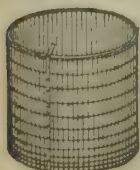
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Pacific Portland Cement Co., Con.
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CALIFORNIA HOG BOOK, \$2.00 Postpaid, Pacific Rural Press Office.

What is wanted is for the farmer to start right in and raise it. We have the climate, the soil, the wet land and the market. A. W. S. Oakland.

[The suggestion is timely. But it is not wholly up to the farmer. He cannot put his land into anything on the prospect that some one may buy it. It is the duty of the manufacturers to test the product

and, if satisfactory, offer contracts to growers. Plenty can now be had to make such tests, as our correspondent intimates. The plant was grown in considerable quantity by the University of California thirty years ago and proposed for trial as a local fiber product, but at that time there was no such demand for fiber as there now seems to be.—Editor.]

The Alameda County Fair.

[Written for Pacific Rural Press.]

Affording unusual opportunities for the city visitor as well as the farmer, the Alameda County Fair held at Pleasanton is always assured a large attendance, and as large attendances attract exhibitors, one can always expect to see a representative county fair at Pleasanton.

Horticultural and agricultural exhibits this year were largely made by the various Farm Centers of the Alameda County Farm Bureau. As is always the case when farmers show their own products these exhibits were highly representative of the agricultural and horticultural resources of the district. As might be expected there was an abundance of the fresh product in these dis-

plays and a satisfying lack of the bewhiskered, glass-enclosed monstrosity so frequently used by the professional showman.

Poultry this year comprised an important part of the show, being judged both from a fancy and utility standpoint. It is but natural that a district so closely identified with commercial poultry raising should have a poultry show that in quality stood second to none.

Although several herds of cattle and hogs were absent because of car shortage, the livestock show was general in nature and of good quality.

The State Fair champion herd of Ayrshires was shown by the Steybrae

Stock Farm as was also the State Fair Grand Champion Berkshire boar by H. L. and E. H. Murphy. The same firm had the only exhibit of beef Shorthorns on the grounds. Milking Shorthorns were exhibited by Alexander and Kellogg and G. A. Murphy. Both Holsteins and Jerseys, in any quantity, were missing. Bishop Bros. were the only sheep exhibitors with their Shropshires.

A one-day's draft horse show was a feature during the week, as it allowed neighboring stallion owners to compete without losing an entire week's time.

BISULPHIDE GROUND SQUIRRELS.

To the Editor: I have been fighting ground squirrels for 25 years in California and have poisoned them by the hundred; but will say that there are places, conditions, and seasons when it is very hard to get

them with poison, and I have found that a sure way to get them is to use bisulphide of carbon or "quick oil."

First, I go around with pick and shovel and close up all the holes. Some holes might not have any squirrels. About two days later, I go around with the stuff in a bottle. I put as many old rags in a bucket as I can poke loosely into the hole, pour on them four or five tablespoonfuls of the oil, dump into the hole, poke with a stick far enough so that they will not be covered with dirt, and close the hole up, and tamp it down. Ready made balls can be bought to use instead of the rags.

The idea is to do the job as quickly as possible, as the liquid is soon evaporated and gone after leaving the bottle. It also seems to me that very early in the morning is the best time to do the job. U. S. Adams.

Modesto.

TO SELL HONEY, SEND SAMPLES.

To the Editor: In reply to your inquiry whether your readers want the honey market quotations continued, will say that I take the paper for the market reports and am a beekeeper and have a small orchard. Do you know a dealer to whom I can safely ship my honey?—W. H. B., Esparto.

[Answered by R. M. Tooker Co., S. F.]

[If this is strained honey, and can have a few small samples, we can easily sell it East provided there is enough to make a minimum 15 ton car. We might sell smaller lots of either strained or comb honey to California or to Pacific Coast buyers, at the market price, quality considered; we think new crop strained honey is worth anywhere from 5% to 6 1/2 cents—depending upon quality and color.

Will be very glad indeed if we can be of any service to any of your patrons, though ought to say that we would either want to charge them a brokerage as is customary, or might possibly be able to add to their prices to cover value of our selling service.]

CHEATING ORCHARD JACK-RABBITS.

[Written for Pacific Rural Press.]

Jackrabbits like young orchard trees in spite of protectors, etc. G. B. Abbott of Tehama county saves his from being girdled, though the new growth on almonds, pears, and prunes is so tasty that rabbits get it anyway. They do not seem to like peach buds.

Mr. Abbott shoots a rabbit, splits it, and rubs the inside of the carcass up the trunk of each tree. One rabbit will treat 10 acres and prevent gnawing of the bark for a month.

There will be open for settlement, from November 7 to December 4, 1916, about 140,564 acres of land withdrawn from the Monterey National Forest. These lands are in San Benito, Monterey, and Fresno counties, and are mainly good for pasturage only.

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plowing, disking, seeding, haying, harvesting, spreading manure, road-grading, dragging logs, hauling heavy loads, etc.

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Shell and grind your corn, run your shredder, thresher, ensilage cutter, drill wells, pump water for any purpose—even for irrigation—saw wood, and in fact, furnish power for any purpose, small or great, on or about the farm, going from one job to another like a thing of life.

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Mechanical Power on the Farm.

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of your experiences and troubles.

PUMPING PLANT STAND PIPE.

To the Editor: I have a pumping plant consisting of a 25 h.p. gas engine and No. 7 centrifugal pump. Am forcing water through 1000 feet of 12-inch sewer pipe which elevates it 10 feet. Have had considerable bursted pipe which is probably due to vibrations of the gas engine. I wish to build a tower to prevent breakage of the pipe. What dimensions should it be?—F. S., Gilroy.

[Answered by Krogh Mfg. Co., S. F.]

We would understand that the party contemplates installation of an open top stand pipe in connection with his pipe line, discharging from his pump into this stand pipe, the water flowing from the stand pipe into the pipe line. He does not state what capacity he is obtaining from his 7-inch centrifugal pump. Assuming that he is obtaining the normal capacity, or 1200 gallons per minute, from this pump, the elevation plus the friction head will amount to 14½ feet; we assuming that this sewer pipe is accurately laid in line. If the joints are badly out of line, the friction head will be much more than mentioned above. Therefore, if a stand pipe 14½ feet high is installed the water would rise just to the top of same. We would recommend that the stand pipe be not less than 20 feet in height, and that it be 18 to 24 inches in diameter. The pump can discharge into this stand pipe at any height desired. The stand pipe should be left open on top and should be located outside of the pump house, as when the pump is shut down there may be surges in the line which will cause the water to surge over the top of the stand pipe; this being the primary object of using a stand pipe to permit the water to surge and relieve the pressure on the line. If the stand pipe is closed at the top, no particular benefit will be obtained from same, unless the stand pipe is used as an air chamber and is frequently charged with air.

It is our opinion that this pipe line is not breaking from the pulsations of the gasoline engine. We think if your inquirer will place pressure gauge on his pump, he will find that the variation in pressure due to the pulsations of gasoline engine are very slight. It is our opinion that this breakage is caused by water ram or hammer which takes place when the plant is shut down and the valve on the pump closes. The direction of the flow then reverses and when the valve closes a heavy waterhammer is produced which runs the pressure away up on the line. The use of a stand pipe will eliminate the water ram.

We wish to state that sewer pipe, which we understand is ordinary terra cotta soil pipe, is not intended to be used under any pressure at all. It is very brittle and has little tensile strength and is intended for drain pipe only.

STEEL AND MACHINERY PRICES.

[Written for Pacific Rural Press.]

The National Implement and Vehicle Ass'n appointed a committee some time ago to get a line on the

possibility of getting steel to make into farm implements at prices that would let them avoid raising the prices of implements and tractors. The committee reported that they were unable to get any concessions from the steel men for farm implements because the war demand was so strong for steel at prices "advanced 125 per cent base since purchases were made which entered into implements sold to the trade last spring."

The committee reported that farm implement prices had not kept pace with the prices of their raw material because manufacturers had hoped that steel prices would drop. This is now hopeless for a long time to come, and it is recommended that farm implement users or prospective users be told why the prices must come up; and the increased earning power of such implements be called to their attention. Though higher prices prevail for implements, they also prevail for the products of implement users; and no one can afford to be without machinery he needs, at this stage. He might possibly save some of the advanced price by waiting indefinitely, but meantime he would be losing the opportunity afforded by machinery to enlarge the production of his own higher-priced product.

HEADLIGHT DIMMERS.

[Written for Pacific Rural Press.]

Not enough automobile drivers have yet been arrested for blinding others coming from the opposite direction by omitting headlight dimmers. Some time ago we printed a note regarding Epsom salts dissolved in water. Some inquiry fails to reveal users, and A. S. Gardiner of Marin county writes that it flaked off from a bathroom window. Osen-McFarland of San Francisco use white enamel, but say white paint will work all right. It should be applied on the lower (not the upper) half of the glass, with a small semi-circle above the center, to come directly in front of the globe.

SILOS NEED ROOFS.

[Written for Pacific Rural Press.]

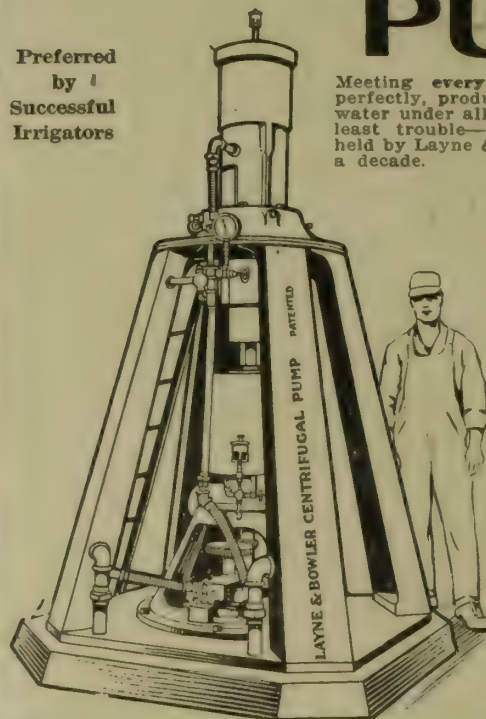
Although silo roofs have not been built on the majority of silos erected in this State because of the idea that the silage does not need protection in our mild winters, it is evident to anyone who gives the matter any thought that a roof is badly needed during the long summer season when the majority of silos are empty. We have recently seen the effects of this double sunning on a number of silos and in every case the damage done to the silo in one or two seasons would more than have paid for the small roof required.

Announcement is made that the New York State Department of Foods and Markets has signed contracts with farmers and dairymen owning 190,000 of the 250,000 cows supplying milk to New York City for the handling of their milk at cost during the coming year. This will add about one cent a gallon to the producers' income.

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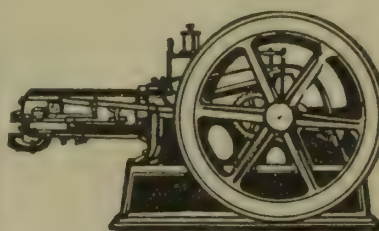
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"Last summer I replaced my batteries with one of your Plugoscillator Magneto, and am more than pleased with it. No trouble to start and no trouble while running."

"Will say that I have had more satisfaction from the money spent with your company than any money I ever spent in my life."

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Fill out the coupon and mail it to us and we will recommend a belt that we will unqualifiedly guarantee to do your work satisfactorily. We have had seventy years' manufacturing and selling experience.

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Redwood Tanks — Silos.
Thirty-five years in this business in Stockton.—A 500-gallon tank, \$8.00. A tank 6 ft x2 1/2 ft., \$7.50. Other tanks equally cheap. I deal direct with the consumer, saving 10% to 25%. All sizes in stock. Clear dry redwood direct from the mill. Write for price today.

Latest improved machinery. Doors, Windows, Frames, Mouldings.
E. F. WILSON, STOCKTON, CAL.

VENTURA COUNTY FAIR.

[Written for Pacific Rural Press.]
The attendance at the Ventura County Fair Sept. 13-16 was estimated at 12,000 to 15,000 and the show was the greatest ever.

The livestock was better than in the previous year, by the addition of swine, which were not shown last year on account of cholera. More than half the stock was horses, over 100 head being shown. Cattle, hogs and sheep were put into panel pens newly built. Durocs led the hogs with 18 or 20 head, Poland Chinas 13 head, and Berkshires 7. The most interesting exhibit was that of two litter mates, one fed by a High School agricultural club boy, the other by the farmer who bred them. One weighs close to 200 pounds, the other less than 100 as we guessed it. (More about this later.) Five sheep were shown. Eight Guernseys, including three heifers with first calves were the most striking. The Holstein exhibit of six was mostly bulls. Jerseys were represented by three females. A Hereford and two Shorthorns made the beef show. Horse races by local people with their own stock held first interest.

The agricultural exhibit is where the Fair made its greatest stride this year by nearly filling a tent 180x80 feet with varied and representative exhibits, mostly by Farm Bureau members. Last year agriculture was represented by three tables in one end of a tent. Indian corn lined the tent walls. Three tables held twenty exhibits of limas on the vines. The apple tables opened the eyes of even the natives and made a bigger exhibit than citrus fruits. The most beautiful lemon display ever noticed by the writer was of three trays, every lemon perfectly colored and of the same size as the rest. This was by the Rancho Sespe, who also included a chart and scales showing their system of individual tree records. A lot of really flaming giant Tokays drew exclamations from across the tent. There were two exhibits of the most varied crops from one farm. First prize was won with 57 varieties by Gwyn Thurmond, who was also superintendent of agricultural exhibits. Fourteen exhibits showed the transformation of beets into sugar and dried beet pulp.

The Holt, Yuba, and Samson tractor people demonstrated their machines, and the De Laval Supply Co. had a feed cutter run by one of their own engines.

The automobile and truck display outnumbered the Panama-Pacific and the State Fair, to say nothing of the equally interesting exhibit of farmers' automobiles parked everywhere about the grounds.

Poultry included a dozen breeds of fowl, many waterfowl, pigeons, and turkeys, besides noisy dogs and sleepy cats.

The Women's and Children's Building was well filled with a strong competition for prizes on all kinds of needle work, baking, canned fruit, pickles, candies, baked beans, flowers, manual training school work, painting, etc.

The attendance at the Humboldt Co. twentieth annual agricultural fair was the largest in the history of the county. The weather was ideal throughout the week.

Ross Silo Fillers and Feed Cutters

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Stock in 17 Sizes.
A Cutter for Every Requirement.

We guarantee more capacity with less power than any cutter on the market.

Ball Bearing End Thrust
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the use of a Hercules Stump Puller. Bumper crops instead of stumps. Big money in place of taxes. \$1,200 from 40 acres the first year—\$750 in extra crops every year after. Get the catalog of the

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From Iowa

An annual fruit show will be held at Paradise October 6 and 7.

Mr. Farmer

WINTER IS APPROACHING.

HOW ABOUT YOUR FARM BUILDINGS?

Are they in shape to protect your crops, your stock, your machinery, implements, etc.?

Remember that galvanized iron building materials are practically everlasting.

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Also stock watering troughs, tanks, and A. I. Irrigation Pipe.

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Circular containing 100 mechanical movements mailed free.

General Agricultural Review.

FIELD CROPS.

Twenty-one tomato-canning factories in California report an aggregate acreage of 3,087 in that vegetable, as against 1,847 in 1915.

The American Beet Sugar company has just closed a 5-year lease on several thousand acres of the large Newhall ranch in the vicinity of Saugus.

The condition of the cotton crop in California at the end of August was 92 per cent of a 6-year average—about the same as last year (93 per cent).

W. G. DeCelle, rice culture expert for the Yolo Water and Power Co., has been named president of the corporation. He will maintain offices in San Francisco.

The best crop on the 700-acre Spreckels ranch, near Sargent, is being harvested, and the product shipped to the sugar factory near Salinas. The crop is good.

A. E. Miat, Secretary of the Tulare Co. Board of Trade, says a tract of 300 acres of alkali land of the worst kind situated south of Pixley, Tulare Co., will yield about 35 sacks of rice per acre.

The condition of the hop crop in California, on the basis of a ten-year average, is 95 per cent. The condition of the same crop throughout the United States, on the same average basis, is 88.4 per cent.

The field agent for the Sacramento Valley Sugar Co. at Hamilton is interviewing landowners in that vicinity relative to planting sugar beets this season. The company offers \$6 per ton at the loading place.

The laborers who were dismissed from the Butte Co. Hop Company's fields at Chico, on the grounds that they were not picking clean hops, and were making trouble, were replaced by a band of about 75 Indians.

Seed inspectors and others interested in determining the purity of Sudan grass seed may obtain a technical description of this method in Dept. Bulletin 406. "Distinguishing Characters of the Seeds of Sudan Grass and Johnson Grass."

The Pacific Coast potato crop for this year, according to Portland, Ore., market experts, will be 42,000,000 bushels, against 48,000,000 bushels in 1915. They claim the greatest loss both in acreage and condition is in California.

Shipments of beets from Owensmouth will reach 40,000 tons this season. The best beets bring \$8.50 per ton, the highest price yet realized. The sugar company pays the freight from anywhere in the valley without deduction on tonnage price.

Sixty per cent of all Ventura county squirrels are deceased because of the Farm Bureau squirrel campaign in which 28½ tons of poisoned grain has been distributed at about cost, 50c per gallon. As others are selling poisoned grain at \$1 per gallon, it is figured that \$6,000 has been saved to farmers in poison alone besides what would have been the squirrels' feed bill.

Damage to the country's cereal crops during August caused a loss of many millions of bushels in prospective production, cutting down the outlook for wheat to below the amount required for home consumption. The Dept. of Agriculture estimates the wheat crop as 611,000,000 bushels, or 9,000,000 bushels less than necessary for domestic use. A carry-over of approximately 160,000,000 bushels of old wheat from last year's record-breaking crop makes up the deficiency and leaves something like 100,000,000 bushels available to supply the foreign demand.

DECIDUOUS.

The Pasadena Canning Co. paid the growers of the Visalia-Farmersville-Exeter district for the 4,000

tons of peaches bought of them close to \$105,000, the biggest price ever secured by the growers of the district for a like tonnage.

An order for the eleventh car of peaches is reported by the Calif. Peach Growers for shipment to France.

Mountain View is to have a big prune and apricot celebration on October 4, with a view to advertising the locality.

The Ainsley Cannery in the Camp-

bell district, below San Jose, put up 70,000 cases of apricots, peaches, and pears this season.

The crop of French prunes in Tulare Co. is the heaviest and best in years, and the growers will realize handsome returns. A big price goes with the abundant crop.

The fruit standardization law will be made uniform throughout the State next year, according to J. Ralph Zion of the department of viticulture of the Univ. of California.

Horticultural Commissioner D. Moulton of San Francisco has positive opinions regarding the kind of fruit he will allow to be sold in this city. He says the "O. K." of the inspector must appear on every pack-

age of apples. Many carloads of inferior fruit have been turned back.

Owners of alkali land will be interested to know that 200 acres of land in Sutter Co., formerly considered worthless, will be soon producing peaches, plums, cherries, and apricots. An experiment was carried on at the Plant Introduction Gardens at Chico to ascertain whether a peach tree which thrives on alkali land in China would do equally well on alkali land in California. The roots grew into trees which produced good fruit. Scientifically the root brought from China is known as the Davidiana.

Kings Co. apricot and prune men endorsed the proposed Calif. Prune

Hudson Now Holds World's Greatest Hill-Climbing Record

Makes Fastest Time Up Pike's Peak

No hill-climb or mountain test in the world equals that imposed on motor cars that race to the summit of Pike's Peak. A Hudson Super-Six Special made the best time of more than 20 contestants to the top of America's most famous mountain, over the longest, steepest, highest travelable road in the world.

The start, at a mile and three-quarters above the sea, is higher by far than is the altitude of the finishing line in most hill-climbs.

The finishing point of Pike's Peak is almost two and three-quarters miles above sea level. In the twelve and a fraction miles of the course there are 60 turns, and the rise is almost one mile high. There is no place where the car is not climbing.

The high altitude affects the power efficiency of the motor and water boils at such low temperature that motors cannot be cooled as they are in lower levels.

Hudson Fastest Time

The Hudson climbed up this winding steep road to the "Top of the World" in 18 minutes, 24 seconds. Its time was 2½ minutes faster than the next fastest car.

This feat now gives to Hudson practically every worth-while record. In speed—when 102.3 miles an hour was attained at Daytona; in endurance—when 1819 miles were covered in 24 hours, with a stock Super-Six chassis we established marks not likely soon to be equalled.

Now we have added to these the greatest of all hill-climbing feats. In it we have shown the endurance of the Super-Six.

Others Failed

Motors of some of the most famous racing cars in the world were unable to withstand the strain of that climb and so did not get to the summit.

It is constant hard pulling all the way and more than three-quarters of the distance must be made in second speed, even with specially geared cars.

In addition to mere climbing, as is required in all hill-climbs, here is added the difficulties of carburetion and cooling.

The altitude that affects one's breathing so much that even the strongest man can stand only the least amount of physical exertion, has a similar effect in reducing the power of the motor.

We made that record in a contest in which were entered, as described by a Denver newspaper, "Fours—Sixes—Eights—Twelves and Super-Sixes."

And, as in all tests in which they have been entered, the best performance was shown by the Super-Six.

Phaeton, 7-passenger . \$1475
Roadster, 2-passenger . 1475
Cabriolet, 3-passenger . 1775

Touring Sedan . . . \$2000
Limousine . . . 2750
(All Prices f. o. b. Detroit)

Town Car \$2750
Town Car Landaulet . 2850
Limousine Landaulet . 2850



HUDSON MOTOR CAR COMPANY, DETROIT, MICH.

& Apricot Association, following an address by Colonel Weinstock, who outlined the purposes of the proposed organization. It is estimated that there are 124,000 bearing apricot and 132,000 bearing prune trees in Kings Co.

The Sebastopol Berry Growers, Inc., have launched on the market a new beverage called Loganberry nectar. It is claimed to "please the palate, tickle the throat, quench the thirst, agree with the stomach, and tone up the system, all without woozy feeling or woolly taste in the morning." It must be great!

CITRUS, OLIVE, SEMI-TROPICAL.

Recently H. E. Brooks of Oak Flat sold a load of this year's crop of almonds valued at \$1,000.

The opening of the olive packing season is near at hand in Porterville, which has an enviable reputation for high-grade olives.

An agricultural school in connection with the Citrus Experiment Station of the University of California is contemplated at Riverside.

A solid trainload of walnuts is to leave Los Angeles the end of this week, to consist of 25 cars, having an estimated value of \$100,000.

The harvesting of the Oroville fig crop, which is now well under way, is reported to be heavy, with good prices prevailing. There is said to be an increased use of figs in confections.

The Calif. Walnut Growers' Association estimates this season's crop of nuts at 12,150 tons, after taking much pains to secure an accurate forecast. Opening prices on the "Diamond Brand" were announced Wednesday of this week. (?)

G. P. Rixford, special government expert on figs, dates, and nuts for California, while in our office recently, stated that the fig crop of California this year was estimated at 5,000 to 6,000 tons of all varieties. From 1,500 to 2,000 tons of these are Smyrnas, for which the growers were receiving from 9½ to 10 cents per pound in sacks dried.

The first processing of walnuts at the Goleta walnut house by the new drum processor instead of by the old tank system has been tried. Definite results will not be known for a week or two. By the new process the hot bleach is shot over the walnuts in the drum instead of allowing the nuts to soak in a tank.

At the annual meeting of the Lindsay-Merriman Citrus Exchange, held on the 11th inst., it was shown that the Exchange had signed up over 2000 acres of new business during the year, comprising the following: Orange Cove Citrus Ass'n, Orange Cove, Fresno County Elderwood Packing House Co. in the Woodlake District, Lindsay District Orange Co. and the Hersey Groves at Lindsay, also the Lancashire-Harris groves at Naranjo, with new houses and the latest equipment it is in splendid shape to care for its members.

The president of the Coachella Valley Date Growers Association says: "There is one seedling garden in the valley five years old, consisting of 20 acres. A few of the earlier varieties are now beginning to ripen, but the high-grade dates will not be ripe for from 30 to 60 days. They are selling at from 30 cents to \$1 per pound. One Deglet Noor palm 12 years old, has 20 bunch of dates, averaging at least 35 pound per bunch. This palm and its sister tree during 1915 brought \$309.30 to its owner. Five palms four years old changed hands last month at \$40 each."

Confirmation of orders booked previous to the naming of prices by the California Almond Growers' Exchange came in so fast following the naming of opening prices that within a few hours the exchange discovered that practically the entire crop had been sold. A meeting of the directors was called and it was decided to raise the quotation for all grades 1 cent. Prices in effect under the new schedule are as follows: Non-

pareil, 20½c; I. X. L., 18c; Ne Plus, 17c; Drakes, 16c, and Languedoc, 16c. It is estimated that the exchange will handle approximately \$1,000,000 in almonds this year.

GRAPES.

The raisin crop in the Wasco district will reach 1,000 tons, valued at from \$60,000 to \$70,000, according to A. J. McCombs.

A Kerman vineyard of 50 acres of Malagas has just sold for \$12,500. The purchaser is G. M. Virgin and the seller Dr. R. D. Alway.

The Thompson Seedless raisin grape crop will be 8,000 to 10,000 tons greater than last year, according to announcement made by the

California Associated Raisin Co. The 1915 crop was about 18,000 tons of Thompsons and approximately 8,000 tons of Sultanas.

The directors of the Chamber of Commerce, Sacramento, have sanctioned a plan to secure a farm adviser for Sacramento county.

Raisin shipments by rail for August, 1916, amounted to 14,186 tons, according to an announcement made at the offices of the California Raisin Co.

One of J. A. Schlueter's Thompson Seedless pickers near Kerman got seven trays from his first two vines, and "guessed maybe he'd get to the end of the row around Christmas time."

MISCELLANEOUS.

Generally speaking, California fruit and nut growers are enjoying exceptional prosperity this year. Prices on all lines are on a high plane.

PERUVIAN ALFALFA SEED

Guaranteed to be genuine. My fields were planted from seed recommended by the U. S. Experimental Station at Indio, Calif. Guaranteed to be free from dodder and Johnson grass. Acclimated perfectly to arid districts. Prices on application. Any amount up to three tons.

A. H. SMITH,

INDIO,

CALIFORNIA.



There Are Dollars In Your Subsoil. Get Them Out!

The value of your land can be greatly increased by means of subsoiling. Beneath the surface soil of your fields, which has been thoroughly stirred by your plow and kept fertile by the rotation of crops, there lies a subsoil that you have never touched.

This subsoil is probably either one of two things—rich soil of which you should be getting the benefit, or a hardpan which is obstructing drainage, deforming the roots of plants and trees, and in other ways lessening the value of your land. In either case it should be broken up by means of

HERCULES DYNAMITE

If the underlying soil is fertile and rich so much the better. Subsoiling with Hercules Dynamite will stir it up, bring part of it to the surface where it will be at the disposal of your crops, loosen it so that the roots can penetrate it easily and get out of it all the good there is in it.

On the other hand, if the subsoil be a hard, impervious layer beneath the cultivated soil it is imperative that it be broken up in order to facilitate drainage, give roots a chance to spread naturally, and get out of it the mineral food it contains.

By means of subsoiling the yield of thousands of acres

in this country has been increased anywhere from 10% to 200%, depending on the crop and local conditions. Soil that has been utterly unproductive has been made fertile.

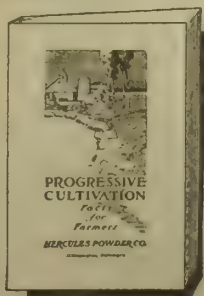
If you have not looked into this question you should. As a first step write for our book, "Progressive Cultivation." It will be sent free on request. It not only discusses in detail the matter of subsoiling with dynamite but also tree planting, irrigation, drainage work, rock and stump blasting, etc.

You will find it worth reading. Send for your copy today. Please use the coupon below.

HERCULES POWDER CO.

Chronicle Building,

San Francisco, California



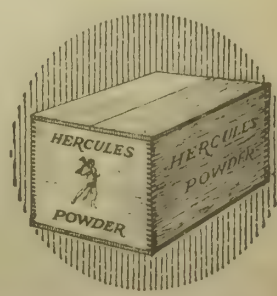
Hercules Powder Co.,
Chronicle Building,
San Francisco, Cal.

Gentlemen:—Please send me a copy of "Progressive Cultivation".

I am interested in dynamite for.....

Name.....

Address.....



Livestock Facts and Fancies.

(By the Editor.)

Ever since the Pacific Rural Press began its work nearly fifty years ago it has labored persistently and consistently for the development of live stock industries in California. At the time of the establishment of this journal in 1870 it was very easy to look back to the very beginnings of the Americanization of California agriculture only twenty years earlier; and its declared purposes, to know accurately, to write conscientiously and to prophesy reasonably, commanded the cordial and generous support of the pioneers who were then still living in large numbers and active in developing permanent lines of production with the wisdom they had learned from their two decades of experimental effort. It was then seen that certain special lines of production could be pushed to great and distinguishing accomplishment which would bring to the State unique standing and large wealth. It was also seen that to realize the great and varied resources and adaptations of the State, practically all lines of production must be undertaken and developed, that California farmers might minister to all the needs of the largely increased population which her unique attractiveness and opportunities would assemble and to all the lines of trade in food products which could be profitably exported. Therefore the Pacific Rural Press was established not as a specialty journal but as a capable exponent of the diversified agriculture of a State which had no rival in the ability to produce, not only greatly but in great variety also.

In pursuit of this reasonable policy, the truth of which has been so amply demonstrated by new achievements in each of the last five decades, the Pacific Rural Press has made strong offensive drives on all agricultural fronts against doubt, distrust and ignorance of what California could do in successful and profitable production. It has therefore been the good fortune of this journal to be recognized, at one time and another, as a leader in the promotion of grain growing, wool growing, fruit growing, dairy and poultry production, meat production, etc., as each of these has arisen as a line of specialty development on the basis of demonstrations made of its capacity by its promotion as a factor in diversified farming. Our motto in all promising agricultural development has been: "Prove all things: hold fast that which is good."

In pursuit of this policy it has always been the ambition of this journal to be well informed, energetic and progressive in the promotion of the livestock resources and capabilities of California. It has always been alert to point out better ways to turn our splendid natural pasturage to good account and to urge the introduction of forage plants which would enhance the carrying power of our lands for domestic animals. It has been influential in the importation, local breeding and distribution of better animals. Years ago it found men with means and tastes for such public-spirited enterprises and it has helped them to

command the popular interest and patronage which have brought their honorable ventures to their own success and to the public service. It has led in dairy organization and ministered to the widespread adoption of advanced dairy machinery and methods which have constituted California one of the great dairy States of the Union. It worked for years in support of true conceptions of value in horses as agricultural agencies rather than as sport-factors. It has labored consistently to bring home-grown pork products to a higher standard by wiser feeding of better hogs and it has always urged that mutton and lamb should be well bred and fed farm products and not merely by-products of the wool and mohair industries.

In such undertakings, of which we mention a few only for the sake of concrete illustration, this journal has been actuated by the principles which prevailed in its establishment nearly fifty years ago, viz.: that reasonable promotion of the livestock industries must be based upon practical agricultural uses. Purchase of better stock for breeding, expenditure for better pasturage and supplementary feeding, the cost of better handling of animals for thrift and for protection against diseases—all these and others like them involve considerable effort and investment. From the points of view of individual prosperity and State building they can be reasonable only as they are resolutely held on the basis of actual producing values. It ought to be a clear fact that there is no other enduring basis upon which such efforts and expenditures can be urged. Of what use is it to boost the prices of purebred animals beyond the reach of those who alone can make profitable use of them? Of course we have no right to object to mutual admiration societies among breeders. Whether they practice their ritual on each other or on the animals they own, it matters not to us. We must remember, however, that the principles upon which this journal was established, and which it has always consistently labored to maintain are that the measure of value of an improved animal is its service in a reasonable farming scheme to help a producer get more profit from his effort and investment. Unless purebred animals are a constructive agency toward practicable farm improvement, they are simply works of art, fit to awaken thrills in the hearts of fanciers.

Of course, while we are shouting our "principles" like a presidential candidate, we do not forget that a breeder may have ends to serve in securing blood or publicity which will meet his desire for "points" in his stock or other points in his own popularity. We do not question his reasonable right to pay what he likes for such gains; nor do we question his wisdom, for we do not know anything about that. But if he has no such particular purposes to serve and simply undertakes co-operative boosting with the idea that a high sale average or a sky-shot for an in-

Auction Sale!

AT

Modesto, Cal., September 28, 1916



LILY OF S. B., 1st Prize-Winner at Oregon State Fair, One of the Many Good Ones in This Sale.

75 REGISTERED JERSEYS 75

This will be a complete dispersal sale of one of the finest herds of Registered Jersey Cattle in California, consisting of 48 mature cows, 22 Heifers 6 to 12 months old; one Herd Bull and 4 Young Bulls. These cows, heifers and bulls are typey individuals and prize-winners, and are of the best blood, being close descendants of Golden Fern Lad, Famous Tormentor, and Interested Prince, Bulls of World Renown.

For further information and catalog write

COL. BEN H. RHOADES,
Auctioneer,
1501 S. Main St., Los Angeles.

OR MURRAY & JONES,
Owners,
Modesto, Cal.

STENZEL'S HOLSTEINS Champion Butter Fat Producers WON FIRST AND SECOND IN THE FIVE-DAY BUTTER-FAT PRODUCTION CONTEST AT THE STATE FAIR.



Beryl Clothilde Hengerveld.

Beryl Clothilde Hengerveld's record for five days was:

351.9 lbs. Milk
21.11 " Butter

Test 4.7%

This beat by far all previous records made on State Fair Grounds.

Clothilde Pontiac Creamelle, recently at 2 yrs. 1 mo., made an official 7-day record of 22.52 lbs. butter, 391.7 lbs. milk, test 4.72%, making her CALIFORNIA CHAMPION TWO-YEAR-OLD.

GOOD ENOUGH FOR ANY HERD.

This youngster is half brother of the California Champion Two-Year-Old, both being sired by Dutchland Pietertje Creamelle. His dam is granddaughter of Pontiac Korndyke, the world's greatest Holstein sire, and she has a record of 28.17 lbs. butter, 456 lbs. milk, test 4.9%. This bull is perfect in type, 50% white, and just ready for service.



Anggie Grace Pontiac Creamelle.
Born Apr. 22, 1915.

A few other choice young bulls with butterfat breeding behind them.

F. STENZEL, Breeder of High Test Holsteins
SAN LORENZO, CALIFORNIA.

dividual, will engender a general demand among farmers for purebred stock, he is very apt to be mistaken. It may attract rich amateurs to plan entering breeding business on the basis of inflated prices, but they might otherwise do something worse with their money. In our notion it is not desirable that purebred stock should establish a higher auction value here than elsewhere, as we have heard that it is coming to be. It will not only keep farmers from buying but also shunt to other parts of the country an export trade we should have. It should be known around the Pacific Coast that California not only has good purebreds but California is a good place to buy them. Unless the business is built up this way it will fall over.

We are tempted to indulge in separate writing along livestock lines in this and coming issues because we have always kept the faith with domestic animals as a basic factor in California agriculture ever since we entered on the service of this publication in 1875, and because we enjoy the effort to keep them straight before the public. By particular attention and a liberal policy the present publisher, Mr. Honeywell, has carried the breeders' interest and support of the Pacific Rural Press beyond anything of the kind ever attained before. He has done that by being true to his conviction that a larger livestock industry, based upon a genuine belief in the purebred animal, is a constructive factor in the greater California farming which is

to come. We fully concur in that view and shall work for it.

Another condition which tempts us to place more emphasis upon this phase of our work, is the greater apparent opportunity and need for it. The only California publication which made a broad titular claim to serve the animal industries, the Live Stock Journal, recently of Sacramento, fell into the cutter and has been comminuted and blown into the silo of one of our southern contemporaries, where it will ferment into oblivion, along with the other journalistic stover which had previously taken the same course. The Butchers and Stock Growers' Journal still floats in the blue but it loves the first part of its name too dearly to follow broad lines. The Pacific Dairy Review still has the sunrise hue, but it, too, chooses rather strict specialization. Therefore it remains for the Pacific Rural Press to reassert the faith in livestock, in which it was born half a century ago and for which it has labored uninterruptedly ever since, and to summon all Californians to renewed and increased interest in the livestock industry on the good old basis of its fundamental relation to the full development of the State and to promote this industry in a true, constructive and educational way for the greater prosperity of all who honestly and reasonably engage in it.

In this effort we must write as we see and think. If we think not aright and see not straight, the reader has a duty to perform.

Growing Importance of the Purebred.

[Written for Pacific Rural Press.]

California has only commenced to realize the importance of purebred beef cattle; and is therefore just in its infancy as a purebred beef State; but destined to become the home of more good herds than any State in the Union, because of our favorable feed and climatic conditions.

Such is the belief of D. B. Harris, manager of the Sierra Vista Vineyard Company whose ranch is located at Minturn, Madera county, where the work of building up a fine herd of registered Herefords has been under way for the past nine years.

The present herd numbers over 60 head, of which 30 are mature cows and 10 are heifers. Many of these are sired by a Beau Perfect bull which Mr. Harris purchased in the East several years ago, but the herd sire of the future will be a yearling bull brought from the East this year, last year's best son of Perfection Fairfax, known as the King of Herefords.

Never, in late years at least, has a better bred or more promising show bull been brought to California than this young fellow; and by careful handling Mr. Harris expects to breed most of his cows to him when he gets a little older. As a yearling, a month after making the trip he weighs about 1,000 pounds.

One of the factors which Mr. Harris believes will have a great deal to do with the future production of this class of cattle is the simplicity with which they may be raised on alfalfa land.

On the Sierra Vista Vineyard, the

problem is not so much one of keeping the purebreds fat but of keeping them thin enough for breeding, notwithstanding the fact that they have but a small acreage of alfalfa to run on and even that does not produce heavily except during the spring months when moisture is plentiful. In fact a small field containing 12 or 15 acres of old alfalfa carries the band of 30 cows most of the year; and with the exception of some trouble with foxtail, little attention is required.

NEVADA SHOULD GIVE HER DAIRY COWS MORE PROTECTION.

The past winter was a very severe one, and thousands of dollars were lost to the dairy interests of the State through the decreased production.

The principal importance is to keep up the milk flow. If the production is allowed to fall off, the original flow can not be regained until the cow calves again. This is especially true of cows which have been milking three months or more.

The dairy cow is thinly clad as compared with beef cattle. They do not have the fat to protect. In the cold weather the cow must warm her body by burning up her feed and tissues. This must be replaced by expensive feed, as alfalfa hay. A warm barn can be built almost as cheap as a shed, and the cows kept comfortable in extremely cold weather. This would seem to really more than pay in the long run.

THE KIND OF HOLSTEINS YOU WANT TO OWN

Will be offered at your own price at the
STATE FAIR GROUNDS Sacramento, Cal.
OCTOBER 26-27, 1916

FROM THE HERDS OF

A. W. MORRIS & SONS, Woodland. FRANK HATCH, Modesto.
BRIDGFORD CO., Knightsen. S. G. KOUNIAS, Modesto.
FRED W. KIESEL, Sacramento. TOYON FARM, Los Altos.
DR. E. J. WELDON, Sacramento. HEWITT & HEWITT, Dixon.

THERE WILL BE SOLD

180 Head Registered Holsteins

INCLUDING

Five daughters of KING KORNDYKE SADIE VALE, one out of a 29-pound cow that has a 34-pound world's record 3-year-old daughter. Four heifers bred to a son of KING SEGIS PONTIAC ALCARTRA, the \$50,000.00 bull, and a 30-pound daughter of Tidy Abbekerk Prince. Fifteen daughters of a 33-pound bull. Twenty-five great heifers and young A. R. O. cows safe in cal to a 33-pound bull.

BULLS

You can buy some of the best young bulls in the West at this sale!

INCLUDING:

A son of PRINCE GELSCHER WALKER, out of a former world's record cow.

A son of PRINCE GELSCHER WALKER, out of a 27-pound 3-year-old. A son of KING KORNDYKE HENGELVELD ORMSBY, and out of a 23.86 pound 4-year-old. Second prize aged bull at California State Fair this year.

A son of KING KORNDYKE SADIE VALE.

A son of a 27.50 pound cow whose dam is a 33-pound cow. The three nearest dams of this bull average 30.25 pounds butter in 7 days, 930 pounds butter in one year.

EVERY ANIMAL OFFERED MUST PASS RIGID PHYSICAL EXAMINATION, AND EVERY ANIMAL OVER SIX MONTHS OF AGE WILL BE TUBERCULIN TESTED BY A DEPUTY STATE VETERINARIAN AND CERTIFICATE ISSUED BY THE STATE VETERINARIAN. BUYERS FROM OTHER STATES WILL NOT BE DELAYED IN SHIPPING.

Catalogs Ready October 15. Write for One Now.

CALIFORNIA BEEDERS' SALES AND PEDIGREE CO.,
C. L. Hughes, Sales Manager,
Sacramento, Cal.

COL. BEN A. RHOADES, Auctioneer, - Los Angeles, Cal.

BELLA VISTA HERD Hampshire Swine

THE SUPERIOR QUALITY OF THE HAMPSHIRE HOG is rapidly being recognized. The Hampshire Exhibit at the State Fair was excellent, and, as usual, THE BELLA VISTA HERD helped make it a success, winning 23 prizes with 22 entries.

Specially this herd was awarded:

FIRST AND GRAND CHAMPION for best female Hampshire shown.

CHAMPION BOAR, any age, bred by exhibitor.

CHAMPION SOW, any age, bred by exhibitor.

GOLD MEDAL, 4 swine, get of same boar, Berkeley King.

GOLD MEDAL, 4 swine, get of same sow, Showers.

SPECIAL SILVER TROPHY, awarded by American Hampshire Association for 4 pigs under 6 months, bred and exhibited by a resident of the State of California.

Some specially good gilts for sale, bred to Evans' Bond, the best bred boar on the Coast; his sire, Messenger Boy; dam, Nora Duchess.

Some fine young boars for service or weanlings, \$20 up.

ADDRESS:

DR. J. W. HENDERSON

522 1st Nat'l Bank Bldg.,

BERKELEY,

CALIFORNIA

Rambouillets

1800 YEARLING RAMS AND 1000 EWES.

These sheep are purebred, large and smooth, with heavy fleece of fine, long, staple, white wool. Individuals or carload lots.

Prices reasonable.

Correspondence solicited.

CHAS. A. KIMBLE, HANFORD, CAL. Breeder and Importer.

Live Stock and Dairy Notes.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

DAIRYING AND DAIRYMEN.

Tulare creameries paid \$85,000 to dairymen for August deliveries of cream.

There is a big demand for young dairy stock in Northern California by Arizona buyers.

Exeter creamery butter got the highest number of points in the butter-scoring contest at the State Fair, the score being 93½.

Three dairymen were arrested recently by State Dairy Inspector Whitaker of Fresno, charged with improper sterilization of utensils.

A Guernsey 2-year-old heifer, Rois Valentine, owned by the Elliott-Brant ranch of Owensmouth, Los Angeles Co., yielded a profit of \$700 in one year to her owners.

The largest single shipment of butter ever forwarded from this Coast, totaling 125 tons, left for New York over the Western Pacific Railway the other day. Its ultimate destination is England.

F. W. Anderson, secretary of the State Dairy Bureau, after a tour of inspection to the creameries of the county, commends the creameries of Tulare Co. for their modern equipment and good management.

The last of the 700,000 pounds butter order, filled for the government by the California Central Creameries, has been delivered. A half million pounds of this was shipped from the Ferndale plant of this company.

C. N. Louth, a Jersey cattle breeder of the East, has secured enough advance orders in the Orland district for Jerseys to warrant his bringing a full carload from Kentucky. Most of these cattle will be bought at the Kentucky State Fair.

The highest mark in butter production among the 1,073 cows tested for August for members of the Stanislaus Cow Testing Association was reached when fifty-five won a place on the honor roll by making an average of 1.5 pounds a day for the thirty-one days.

The attention of those of our readers interested in Jersey cattle is directed to page 332 of this issue, where will be found the announcement of the auction sale of 75 registered Jerseys owned by Murray & Jones of Modesto. The sale will be held at Modesto, September 28.

The U. S. Dept. of Agriculture announces that reports from 166 firms in the United States show that these firms had 102,843,822 pounds of creamery butter in cold storage Sept. 1st. On the same authority, 152 firms show they had 30,437,771 pounds of American cheese in storage on the same date.

The seventh annual convention of the California Cream Operators' Association will be held in Ferndale Sept. 28-30. The train leaving San Francisco Wednesday morning at 7:45 on the California & Northwestern Railway reaches Ferndale that evening, making a daylight trip through a highly interesting tract of country. Humboldt promises a royal welcome to visitors.

Six cows in the Gridley Cow Testing Ass'n produced over 50 pounds of fat during July as follows: Holstein, owned by A. L. Kaiser, East Biggs, 63.4 lbs. fat; C. Goetz, Tudor, Shorthorn, 62.9 lbs. fat; Morehead and Son, Sutter City, Jersey, 58.3 lbs. fat; D. Beals, Gridley, Holstein, 58.3 lbs. fat; S. C. Doen, Oroville, Shorthorn-Jersey, 55.6 lbs. fat; J. H. Guill, Chico, Holstein, 51.2 lbs. fat.

The American Jersey Cattle Club of New York is to be represented in California by J. M. Roberts, ex-president of the Associated Students of the University Farm at Davis, and a member of the class of '16. Mr. Roberts' appointment is the outcome of the increased activity and wide-

awake campaigning promoted by the Club throughout the country. The Jersey is on her way back full speed into popular favor.

The call for the fourth entry of the California Educational Butter and Cheese Contest and the State Fair Contest, brought thirty-two cubes of butter and thirty-five cheese. The average score of all classes of cheese entered was 90.55, which was .5 higher than in the previous contest. Several of the entries were criticised for unclean odor and flavors. The next scoring takes place the first part of November. The average score of the 32 samples of butter submitted was 91.8.

BEEF CATTLE.

Blackleg has broken out among cattle in Sutter and Yuba counties. Only fat cows and calves seem to be affected by the disease.

Steers full-fed from birth should not run beyond 20 or 21 months of age, as there is a decided falling off in the rate of gain after this age, reports the Missouri Agricultural Experiment Station.

The Tehachapi Cattle Co. of Bakersfield expect to feed out a large number of beef cattle, mostly calves and yearlings, on their ranch in Kern county the coming winter. Roland Hill, manager, says that they have all of their large concrete silos well filled with kafir corn silage.

Approximately 9,493 square miles of territory in six States is released from quarantine on account of the Texas-fever cattle tick by an order signed by the Secretary of Agriculture effective September 15. The order releases the last area under quarantine in California.

HOGS AND SHEEP.

A sow owned by T. F. Sullivan of Tulare has farrowed 37 pigs in five months.

The Muzzy ranch of 4600 acres, has been sold to Henry Peters of Dixon for a sheep range.

Henry Peters of Dixon has recently purchased the 6,000 acre Muzzel ranch near Elmira for his increasing flocks of sheep.

Martin Pradere, a large sheep raiser of Carson Valley, Nevada, has sold his land and sheep to E. A. Settlemyer of Gardnerville.

Hogs valued at \$72,000 were shipped from Kings county to San Francisco markets in the month of August. They sold at an average price of 7½¢ a pound, and averaged 200 pounds in weight.

Homer Brown of Dixon received five head of big, white-wool Rambouillets from Hanford recently. Mr. Brown selects this French breed of sheep for the purpose of crossing with his Merinos.

Mr. John G. Taylor of Lovelock, Nev., who has extensive land holdings in Elko and Humboldt counties, has bought a number of fine Cotswold sheep from Joseph Hennen of Lamolille valley with which to improve his flocks.

According to figures compiled by the Hanford Chamber of Commerce there were \$72,000 worth of hogs shipped out of Kings county during August. They averaged 200 pounds in weight and sold for 7½ cents, f. o. b. Kings county shipping point.

Among others who purchased high class Shropshire rams from Bishop Bros. at the State Fair were Gion Gibson, manager of the J. S. Gibson Co. at Williams and W. H. Parrot of Loleta, Humboldt county. Both are considering the establishing of purebred flocks.

We are informed that the following sales have been effected by the Riverina Farms: Riverina Nema 14th, first prize senior sow pig at Sacramento to Frederick N. Woods,

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½¢ per word.

SWINE.

Poland Chinas.

SMITH'S POLAND-CHINAS—Sows and gilts bred to Joker, First Prize Boar at the Wisconsin State Fair, 1915. These sows and gilts, sired by Iowa Wonder, who is a son of A. Wonder, the most celebrated Poland-China boar, living or dead. Litters from this mating are the best I have ever seen anywhere. Prices low quality considered. Will sell one or a carload. As a special inducement each purchaser will be given a year's subscription to the American Swineherd, the best swine paper published and a copy of the Handbook on the Sow; also a copy of the Pig Feeders' Manual. Geo. A. Smith, Corcoran, Cal.

YOUNG POLAND CHINAS, LARGE TYPE—Boar IBA Wonder won first and Reserve Championship P. P. I. E., weighing 730 pounds under 2 years and in breeding condition. 60-day special—fine young sows bred to IBA Wonder at very low prices; also weanling pigs, either sex. Satisfaction, or money refunded. W. A. Young, Lodi, Cal.

ROUGH'S GREENFIELDS HERD, headed by Superba, World's Fair Champion. Have recently added 3 noted sows. No better in the West. Prices reasonable. W. H. Rough, Arlington Sta., Riverside, Cal.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated, purchaser to return crates. E. A. Hall, Watsonville, Cal.

LAKESIDE STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Linn, Linview, Route A, Modesto, Cal.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

POLAND CHINA HOGS FOR SALE—Registration papers furnished free. C. A. Cooley, Durham, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

POLAND CHINAS—Young boars for sale, \$25 each. J. A. Crawshaw, Room 1, Bissell Bldg., Hanford, Cal.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 27A, Davis, Cal.

POLAND CHINA HOGS—Registered. Cholera immune. R. J. Miller, Llewellyn Ranch, Lathrop.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, E. 4, Lodi, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

REGISTERED POLAND CHINAS—Young stock for sale. J. H. Cook, Paradise, Cal.

REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED POLAND-CHINAS and Duroc Jerseys. M. F. Harrold, Orland.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

Berkshires.

REGISTERED BERKSHIRES—World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapeville Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

BERKSHIRES—Herd headed by Artful Masterpieces, Grand Champion State Fair 1913-14, and Improver B. Grand Champion 1915. Open sows. Service boars and weanlings for sale. Oak Grove Dairy Farm, Box 1, Woodland.

CHOICE REGISTERED BERKSHIRES—Fine bred Rival Champions Best and Masterpiece pigs, \$15 each. Trios, \$40. A 700 pound son of Star Value for sale at a bargain. W. H. Waugh, Riverside, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Rush, Santa Rosa, Cal.

SPECIAL SEPTEMBER OFFERING—Berkshire boars 3 to 11 months. Also aged boar. Write for photo and prices. Imperial Stock Farm, Morcan Hill.

REGISTERED PUREBRED BERKSHIRE PIGS—Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

REGISTERED BERKSHIRES—For sale. Bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

ROSEBROOK BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Perris, Cal.

REGISTERED DUCOC SOWS with 6 pigs. 40 gilts, 20 boars. Extra fine breeding. John Kincaid, East Bakersfield, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. Milesell, Manteca.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

BERKSHIRES—Carruthers Farms. Mayfield, Cal. Second annual sale, August 2, 1917.

REGISTERED BERKSHIRES—Weanling pigs \$10 each. G. A. Carter, R. 7, San Jose.

REGISTERED BERKSHIRE PIGS—Write or call Greenwood Ranch, Brentwood, Cal.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

REGISTERED BERKSHIRES—Bred sows. Also a few gilts. G. E. Shelford, Healdsburg, Cal.

CHAS. GOODMAN—Breeder of high-class Berkshire Swine. Williams, Cal.

Duroc-Jerseys.

REGISTERED DUROC-JERSEYS—80 head priced to sell before October 1st.—Bred sows and gilts, open gilts, boars, and spring pigs, representing the most noted families of the breed. Only choicest individuals, shipped for breeding purposes, at prices within reach of every one; absolutely guaranteed and in first-class condition. For particulars write to Haden Smith, Route 1, Box 84D, Woodland.

DUROCS from River Bend Farm, St. Helena, Cal., are large type, smooth, rangy, with fine backs and deep cherry color. We sell only those we'd like to keep in our herd. Don't write us if you want cheap stock.

DUROCS and BERKSHIRES for sale, reasonable. First premium Berkshire boar and 3rd on Duroc, the only two hogs we entered State Fair, 1916. Perkins & Co., Perkins, Cal.

DUROC JERSEYS—Herd boars. E. N. N's Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. M. Boudier & Son, Napa.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High class pure-bred hogs, both sexes. Any age.

THOROUGHBRED DUROC-JERSEYS to farrow in August. Dr. T. A. Guthrie, Woodland, Cal.

REGISTERED DUROCS from best Eastern blood lines. S. S. Southworth, Napa.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROC JERSEY SWINE—Frederick M. Johnson, Napa, Cal.

REGISTERED DUROCS—All ages. Either sex. W. A. Pack, Hollister, Cal.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

Other Breeds.

BILLIKEN HERD OF IMPROVED CHESTER WHITES—The Farmer's Utility breed. Quiet disposition, big, uniform litters, easy feeders, rapid growers, size combined with quality. 15 bred gilts and 60 spring pigs, of both sexes, to offer. Prices are reasonable and quality is high class. The best and most popular blood lines of the breed are represented in this herd. Every one interested by the virus serum treatment. Write for circular and prices. C. B. Cunningham, Mills, Sacramento County, Cal.

HAMPSHIRE SWINE—Fancy belted boars and sows. Good ones, \$25 and \$30. Better ones up to \$45. All registered. Ben F. Thorpe, Manager, Canfield Estate Ranches, Rossall, Cal.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

LARGE YORKSHIRE SWINE—Gilts to farrow in September and October. Service boars and spring pigs. Both sexes. Elverina Farms, Paradise Road, Modesto, Cal.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

REGISTERED IMPROVED CHESTER WHITES—Grizzly Bear Ranch, East Auburn, Cal.

REGISTERED O. I. C. SWINE—C. D. CONWAY, Rinon, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire Rambouillets and American Merinos, both sexes. Also Red Faced cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

FOR SALE—Shropshire bucks, yearlings and lambs. Individuals to carlots. Purebred but not registered. J. R. Bloom, Dixon.

KAUFKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

BREEDER OF MERINO SHEEP—Rams for sale. J. Bidegaray, Fresno, Cal.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers of Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets. Hanford, Cal.

BEEF CATTLE.

FAIR OAKS RANCH WHITES, Cal.—Young registered Shorthorn bulls for sale. Sired by Landseer 379318, grandson of Imported Villager 295884.

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esposito, Cal.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords. Newman, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

DAIRY CATTLE.

Holsteins.

REGISTERED HOLSTEIN BULL CALVES—Sired by Lorena Komdyke Alcarra, whose dam made 29.75 pounds butter fat in seven days as a four-year-old. J. M. Campbell, Escalon, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Cream-elle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

REGISTERED HOLSTEINS—Have a few Bells from El Prado Wayne Colantha, whose dams and sire's dams average per cent fat at 4 years is 5.01. See my stock at the State Fair. J. W. Benoit, Route C. Modesto, Cal.

REGISTERED HOLSTEINS—Sired by King Komdyke Bengerveld Ormsby 53822. Dam Pieterje Maid Ormsby 78051, world's record when made 35.56. Send for pedigrees. Geo. Koumas, Modesto, Cal.

17 HEAD Grade Holstein cows, bred for milk production on my own ranch. Will sacrifice at low figure. Quitting farming. W. E. Clanton, Melrose Farm, St. Helena, Cal.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

THE McCLOUD RIVER LUMBER CO., McCLOUD, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

A SPLENDID 8-months-old Holstein bull with good A. R. O. breeding for \$135. K. W. Abbott, Milpitas, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS Corp., Importers and Breeders, Woodland, Cal.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chino, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnyside Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams R. F. Anderson, Modesto, Cal.

30 HIGH-GRADE Holstein milk cows for sale at once. Hewitt & Hewitt, Dixon, Cal.

HOLSTEIN COWS for sale with records. Dr. Stelson, Napa, Cal.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Calif.

Jerseys.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3 lbs. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

REGISTERED JERSEYS—Herd established 1888. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

VENADERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly record. Guy R. Miller, Route 1, Modesto, Cal.

JERSEY BULLS—Serviceable age. Sons of Gerlie's Lad, who has two daughters that made over 600 lbs. butter as two-year-olds. A. A. Jenkins, Tulare.

WANTED—JERSEY COWS—10 to 20 young heavy producers for Stanislaus County ranch. J. L. Bowden, 5483 Taft, Oakland.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Corra, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

YOUNG REGISTERED JERSEY BULL CALVES at reasonable prices. O. J. Ames, Oakdale.

REGISTERED JERSEYS—Young bulls and bull calves. T. R. Purvine, Petaluma, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Haworth, Modesto, Cal.

FRESH JERSEY MILK COWS for sale. E. M. Locke, Lockeford, Cal.

Other Breeds.

GUERNSEY BULL CALVES from Grand Champion Bull. Also Hampshire Swine, both sexes from Grand Champion 700-lb. boar and Grand and Junior Champion Sow. Bella Vista Herd J. W. Henderson 1st National Bank Bldg. Berkeley, Cal.

BREEDERS OF REGISTERED SHORT-HORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

WILLOWMOOR AYRSHIRES—Great records: economy. 300 head in herd. J. W. Olson, Redmond, Wash.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellner, Suisun, Cal.

YOUNG REGISTERED GUERNSEY BULL for sale cheap. Guaranteed sound. Kenneth Evans, Gilroy, Cal.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes, McCoy, Oregon.

HORSES AND MULES.

STOCKTON PERCHERONS again winners at Sacramento. Get next brother farmer. H. G. Learned, Producer, Stockton.

REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders, Easton & Ward, Proprietors, Burlingame, Cal.

MISCELLANEOUS.

CROLEY'S CALF FEED with skim milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

D. O. LIVELY, 216 Hobart Building, San Francisco, buys and sells livestock—any kind—any quantity.

DUROCS AND GUERNSEY BULL CALVES Guits bred to 900-lb. boar. Ed. E. Johnson, Turlock, Cal.

DOGS.

THOROUGHbred SCOTCH COLLIES—All bred from our noted prize-winners. Have a few 3 months old puppies—very choice. Write us what you want. Brownale Kennels, Redwood City, Cal.

Jr., San Mateo, and two junior boar pigs, winning first and second at Sacramento, Riverina Chief and Riverina Harry 2nd to H. S. Bates, Holt, Calif.

To educate and organize the farmers of Yolo Co. so that they will be able to take advantage of the new farm loan law when it goes into effect on Jan. 1, 1917, the Yolo Co. Farm Bureau has taken upon itself a campaign of county-wide extent.

LARGE YORKSHIRE AWARDS, SACRAMENTO STATE FAIR.

Aged boars and sows: 1, Montalena Big Dick, A. L. Tubbs Co., Calistoga; 2, Oak Grove Ladd 7th, Riverina Farms, Modesto. Junior yearling boars: 1, Riverina Laddie 5th, Riverina Farms. Senior boar pig: 1st and 2nd, Riverina Chief and Riverina Harry 2nd, Riverina Farms. 3rd, Grove Hill Doch, A. L. Tubbs Co. Junior boar pig: 1st and 4th, Riverina Admiral and Riverina Model, Riverina Farms; 2nd and 8rd, Montalena Nemo and Montalena Prince, A. L. Tubbs Co. Aged sow: 1, Lake Park Queen 54th, Riverina Farms. Senior yearling sow: 1, Riverina Nema, Riverina Farms. Junior Yearling sow: 1st and 2nd, Riverina Nema 6th and Riverina Lady, Riverina Farms; 3rd and 4th, Riverina Lady 3rd and Riverina Belle 3rd, A. L. Tubbs Co. Senior sow pig: 1st and 2nd, Riverina Nema 14th and Riverina Martha, Riverina Farms. Junior sow pig: 1st and 2nd, Montalena Duchess and Montalena Nema, A. L. Tubbs Co.; 3rd and 4th, Riverina Topsy 5th and Riverina Princess, Riverina Farms. Grand champion boar and champion boar bred by exhibitor: Riverina Laddie 5th, Riverina Farms. Grand champion sow and sow bred by exhibitor: Riverina Nema 6th, Riverina Farms.

Herds—Boar and 3 sows over one year: 1, Riverina Farms. Boar and 3 sows under one year: 1, Riverina Farms; 2, A. L. Tubbs Co. Boar and 3 sows under one year bred by exhibitor: 1, Riverina Farms; 2, A. L. Tubbs Co. Get of Sire: 1, Oak Grove Ladd 7th, Riverina Farms; 2, Oak Lodge Vim 91st, Riverina Farms. Produce of Dam: 1, Deer Creek Nema 8th, Riverina Farms.

PUENTE TRACTOR DEMONSTRATION.

[Written for Pacific Rural Press.]

"Tell us what tractor work you want to see done, and we will do it," was the general invitation issued by those in charge of the tractors of nearly a dozen manufacturers, with at least 21 machines demonstrating their various good points at the Puente Tractor Demonstration Sept. 19-23.

This can be only a report of the first day and of what was expected for the rest of the week, on account of our time of going to press. It was a greater and better demonstration in all ways than that at the State Fair.

The mornings were given over each day to demonstrations; and many kinds of work were shown. Wednesday, Thursday and Friday afternoons were given over to public demonstrations of plowing—everybody to be lined up on the corner of his laid-out field at 12:55 sharp, and everybody to start at 1:00 and at once. Each demonstration field was 900x1125 feet for the first days, and 400x1125 for the last.

"It isn't a question of educating people on the different uses of a tractor in a public demonstration by the tractor people as a whole," said Mr. Martin of the Bates Steel Mule Co., in whose hands most of the arrangements were placed. "The idea is to show all the machines at the same work on similar ground, so people can compare. Plowing is the basic operation for all of them."

Arrangements were complete before the opening. The private demonstration fields were carefully laid out on the basis of relative horsepower of the machines taking part. Several machines extra were on exhibit. A different field was laid out each day and the position of each tractor fixed on a chart. Each of

the fields was 450 feet long. The Sandusky, of which two machines were on the field, had a strip 315 feet wide; the two Bates Steel Mules had 273 feet; the Samson, with five machines on the field, had 336 feet; the Big Bull, 210 feet; the Los Angeles Tractor, 168 feet; the Hart-Parr and Happy Farmer tractors had 399 feet; the Sure Grip, 210 feet; the Lambert, 108 feet; Holt, 150 feet; Yuba, 357 feet; Best, 168. Much of the ground had produced a crop of beans this year, and made fine plowing.

Two fields side by side, 500x900 feet, were set apart for the big 75 h.p. Holt and Best machines. These were grain fields—cracked adobe soil, dry to the bottom. One of these machines pulled a Killefer tractor subsoiler of several standards, some 18 inches deep, after which the ground was plowed 16 inches deep, with the tremendous Killefer 4-gang plowing 64 inches wide. Other machinery exhibits included: Oliver plows and disks; Holt tractor land leveler; Moline plows, disks, clod mashers, etc.; Representative E. P. Bosbyshell Co., and John Deere machines; and an array of plows, harrows, fanning mill, silage cutters, feed grinder, hay chopper, etc., by Dixon-Griswold; mostly in tents. Fairbanks-Morse had engines and centrifugal pump operating near by.

Perfect weather and a location on a central boulevard tapping the magnificent highways of Southern California, helped insure a great attendance of farmers.

THE HELM SALE A SUCCESS.

The Holstein sale, held at the Frank M. Helm ranch near Fresno, on September 12th, was a pronounced success, under Col. Ben A. Rhoades, auctioneer. Bidding was spirited and prices ranged from \$100 up to \$600.

The Edgemoor Holstein Farm of Burbank bought eight cows and heifers at from \$195 to \$305 each. McAlister and Son, Chino, secured six cows and two heifers at from \$200 to \$310. Z. M. Dickey, Dinuba, got a bull for \$160. W. L. Chrissier, Riverdale, bought a bull for \$150. S. A. Hamilton, Snelling, bull for \$180. T. J. Gilkerson, Le-moore, a bull for \$165. John Phillips, Fresno, a bull (Segis Pontiac Mead), \$600. Alex Whaley, Tulare, two bulls at \$325 and \$335. R. F. Guerin, Visalia, two bulls at \$300 and \$400. W. W. Beard, Kerman, two cows, \$300 and \$310. H. E. Vogel, Fresno, bid in twelve cows, three heifers and two bulls, paying from \$150 to \$400 per head. A. W. Morris & Sons, Woodland, secured seven cows and one heifer, at prices ranging from \$150 to \$310. Kearney Vineyard, Fresno, bid in six bulls, paying from \$165 to \$200. H. O. Smith, Tipton, purchased twelve cows, two heifers and two bulls, paying from \$100 to \$295 each.

THE STANISLAUS FAIR.

[Written for Pacific Rural Press.]


As this is written it is apparent that the Stanislaus County Livestock Show and Exposition has developed, overnight almost, from a local pro-

ducts show into a show of State importance, second only to the State Fair in many respects.

Stanislaus is not only notable for its herds of purebred cattle, the pick of which is on exhibition at this fair, but it enjoys pre-eminence as the banner dairy county of California. Prizes aggregating \$2,250 have been offered for the best showings in the several lines of cattle, horses, and swine. There is a healthy rivalry for the generous cash prizes which have been offered by the fair management, and the showing of livestock is particularly strong, Monday's count showing 64 Duroc, 47 Poland-China, 32 Berkshire, 17 O. I. C., and 12 Yorkshire hogs on the grounds with more to come. Dairy cattle were represented by 89 Jerseys, 53 Holsteins, 23 Ayrshires, and 20 Shorthorns. The stock judging will be done by Prof. Gordon H. True of the University of California.

The agricultural, horticultural, and commercial exhibits are of unusual beauty, and of State Fair quality. A comprehensive exhibit of automobiles occupies a 50x200 foot tent.

Not the least interesting exhibit at the fair is a baby show, six prizes being offered, ranging from \$1 to \$5.



RACINE HORSESHOE TIRE

THE THOROUGHbred

TIRE

There's lots of life and stamina in this tire—the kind that makes possible remarkable mileage records. Guaranteed 5 0 0 0 miles. Write for folder.

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LARGEST SADDLERY HOUSE IN WEST.

Edgemoor Farm Guernseys

Have again emphasized their reputation as a Show Herd by winning the major part of the premiums at the California State Fair, and also winning First and Second place with cows having best official records.



**A Few Choice
Bulls and Heifers
are Offered
For Sale.**

**SANTEE,
San Diego County, California**

F. H. SCRIBNER, Superintendent. W. H. DUPEE, Proprietor

First Prizes to Farm-bred Horses.

[By Wayne Dinsmore, Sec'y Percheron Society of America.]

Nearly all of the Percherons in the United States are being bred by men who have small studs ranging from two to ten mares. That these small breeders are successful proves encouraging to others who contemplate replacing their present grade horses with purebred mares.

The success won by the small breeders at the Ohio and Iowa State Fairs is of particular interest in this connection. At the Iowa State Fair, the first prize two-year-old stallion headed a ring of more than 20 two-year-olds, which were admittedly of as high character as any ring of two-year-olds ever shown at that Fair. This horse was bred by a small breeder who has but four or five mares and who, in his desire to breed high-class Percherons, went to the expense of purchasing a stallion for his own use.

The first prize yearling stallion, also winner of the Futurity Class, at the Iowa State Fair, in a ring of 22 stallions, was bred by a small farmer who owns only ten or twelve mares.

The first prize yearling filly at the Iowa State Fair, also winner of the Futurity Stake, was bred by a breeder who owns but a small band of mares, and who, furthermore, was making his first exhibit at the Iowa State Fair.

At the Ohio State Fair, the first prize two-year-old stallion was bred by a farmer who has only 12 or 15 mares, but who was sufficiently determined to have a good stallion to go out and buy a stallion for his

own use.

The first prize yearling stallion was bred by another farmer, who has only eight or ten mares.

The first prize yearling filly was also bred by a small breeder.

The yearling stallion and yearling filly just referred to were winners of the Eastern Percheron Breeders Futurity, so that six out of a possible eight first prize winners in the two-year-old and yearling classes at these two great State fairs, were bred by small breeders who owned only enough mares to do their farm work, and in all instances the Percheron mares which produced these winners were mares which did their full share of work on the farms where they are kept.

The fact that these colts, bred by small breeders who keep Percheron mares for strictly utility purposes, were able to win over the best colts sent forward by the larger breeding establishments, has especial significance. It shows that numbers are not necessary to success, and shows that the small breeder who is a good judge of horses can, by exercising care in the selection of his foundation stock, and by breeding to sires of approved type, achieve marked success in horse breeding. It goes without saying that these colts, all of them, received the best of feed and care, for while none of them were fat, they were all well grown in frame and muscle and showed ample evidence of having received plenty of food from birth.

EDGEMOOR GUERNSEY SALE.

[Written for Pacific Rural Press.]

With an average of almost \$230 for 30 head the auction sale of Guernseys held at the State Fair Grounds, September 6, by Edgemoor Farms was considered very satisfactory from a seller's standpoint.

As has been the case with all livestock auction sales in the State, buyers used a good deal of discrimination, picking the good ones with an evident disregard of price but fighting away from the mediocre ones, despite Col. Ben Rhodes urgent solicitation.

Guernsey men from all over the coast were present, buyers being as follows: Grapewild Farms, Escalon, \$1945; Frank Helm, Fresno, \$1535; D. O. Brant, Owensmouth, \$1395; Calla Grove Farm, Manteca, \$650; L. D. Smith, Berkeley, \$295; C. T. Wilson, Portland Oregon, \$400; W. J. Higdon, Tulare, \$240; C. S. Rasmussen, Loleta, \$175; W. H. Saylor, San Francisco, \$150; D. W. Wiley, Soledad, \$180; R. J. Van Teger, Live Oaks, \$50; Mrs. H. A. Palm, Sacramento, \$60. Average for 25 cows, \$250.60. Average for five bulls, \$122.

JERSEY BREEDERS MEET.

[Written for Pacific Rural Press.]

The California Jersey Cattle Club held their regular annual meeting and banquet, September 7, at Sacramento, electing J. W. Coppini of Ferndale, president to succeed Ralph Watson, C. D. Hayworth of Modesto was chosen for vice-president. J. E. Thorpe of Stockton will continue as secretary of the association for another year.

The action of the association in electing a Humboldt county breeder as president and a Stanislaus county breeder as vice-president will simplify the holding of more meetings in all parts of the State than has been possible in the past.

RAISING CALVES ON A MARKET MILK DAIRY.

[Written for Pacific Rural Press.]

Quite frequently dairymen who are selling whole milk believe that they cannot afford to raise their own heifer calves because of the milk expense. An exception to this case is A. Haley of Alameda county, who runs a 120-cow dairy and who sells his milk in San Francisco.

Mr. Haley's experience has shown him that he cannot buy high producing cows nearly so cheaply and surely as he can raise them himself, even though whole milk is worth over 15 cents a gallon to him.

For the first two months he feeds whole milk to his calves twice a day. During the next two months they are fed milk once a day and allowed the run of a pasture. After that they are pastured and fed some mill feeds.

Care is used also in selecting the heifers, only those from the heaviest producing cows being kept, the others being sold at birth to a calf buyer who makes a specialty of raising them to a vealing age.

July and August have been exceptionally prosperous months for Fresno county dairymen. Figures furnished by the Danish Creamery Association gives the gross receipts for August at about \$100,000, and the production in excess of 300,000 pounds of butterfat.

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Prince Alcartra Korndyke,
Best bred son of Tilly Alcartra.

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HOLSTEINS: We will sell a number of young bulls. Some sires and grandsons of the noted Prince Gelsche Walker, and bulls from one World-Record cow and two California State-Record cows. Sixty females of the highest class will be consigned. Write for catalogue.

WORK HORSES AND MULES will also be offered for sale.

WRITE FOR PARTICULARS.

Anita M. Baldwin,

W. H. TAYLOR, Superintendent.
Santa Anita, Cal.



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Grand Champion Boar, Sacramento, 1916.

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Veterinary Queries and Answers.

[Answered by Dr. H. B. Wintringham, Petaluma, Cal.]

[Subscribers wishing an immediate reply should send money order for \$1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

SOWS DON'T BREED.

To the Editor: A number of purebred Poland China sows have failed to get with pig although have tried everything imaginable, but no medicine. These sows are all ages, are in good flesh but not overly fat for Polands, are fed on skim milk and alfalfa. A very few of them breed regularly to the herd sire but the rest seem hopeless.—J. C. L., Tulare.

[This is probably a form of leucorrhea or chronic catarrh. Would advise douching with a warm solution of cooking soda once a day. One tablespoonful per pint of water.]

LUMP UNDER TAIL.

To the Editor: Early last spring, a soft spongy lump started under the tail above the rectum of a mare. Lately it has enlarged so it about covers the rectum and seems to pain her.—D. M., Boulder Creek.

[Operative treatment is indicated here. Call in your veterinarian.]

SHEEP RUN AT NOSE.

To the Editor: Twenty sheep and lambs in fine shape and well fed cough and run at the nose. Is it dangerous or catching?—H. H. E., Clio.

[Call in the State Veterinarian.]

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Everything for the Honey-Bee.

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This may be verminous bronchitis.]

MILK BLOODY AND THICK.

To the Editor: A fresh cow gave milk that was bloody, then got thick and curdy and most of the flow has stopped. We gave potassium iodide following a large dose of salts, for several days without results.

[Continue the iodide treatment for at least two weeks.]

PIGS COUGH.

To the Editor: Shoats weighing 50 to 70 pounds have a dry cough, and one dies about every 10 days. Have been on alfalfa and barley pasture all summer. In the last few days, a brood sow has commenced to cough in the same way.—H. H. R., Lassen.

[Call in your nearest veterinarian and have his opinion as to whether this is cholera or not.]

HOOF'S CRACKED.

To the Editor: Two horses are quite lame at times when driven on country road. One has a "contracted hoof" and the other a crack in the heel or soft part. Doctoring makes it better; then it gets worse.—E. B., San Juan.

[Have both these horses shod with tips which allow the heels no contact with the ground.]

BELLY ACHE.

To the Editor: Our animal has spells in which she groans as if in pain, refuses to eat, is stiff in her legs, her back is cold along the spine.—H. C. P., Pixley.

[Give two pounds epsom salts at one dose.]

SORE TEAT, GARGET.

To the Editor: A cow giving 5 gallons milk daily got the end of one teat cut on barb wire a month ago. It seemed to heal, but afterward that teat gave stringy, clotty milk and there is a hard core from the base of the teat upward. Milk it clean every day twice. Have treated for garget with saltpetre and poke root, have syringed with peroxide, and rubbed in turpentine and oil. Is alfalfa hay a healthy feed if fed alone?—E. M. S., Merced.

[Look up treatments given for garget. Alfalfa is all right alone but it is better combined with some grain.]

WEAK IN HIND LEGS.

Have fed eight pigs three months old, milk soured in a barrel. They got weak in the hind legs and wobbled. One drags his hind parts. Legs are not swollen.—Sub., Kingsburg.

[Give these pigs one dram arecanut and follow with one tablespoonful epsom salts.]

GARGET.

To the Editor: I have a cow that had a calf two weeks ago and three of her teats give milk very slowly; the other is all right. This is her fifth calf.—M. T., Moraga.

[Look up treatments given for garget.]

ABORTION.

To the Editor: Within a week three cows have aborted with calves 7, 5, and 3 months along. Cows looked well. Fed alfalfa hay darkened by being slightly heated. Had good clear water. This is my first trouble of this kind.—G. G., Pixley.

[This looks like contagious abortion, but the history points to forage poison due to the moldy alfalfa, which will cause abortion.]

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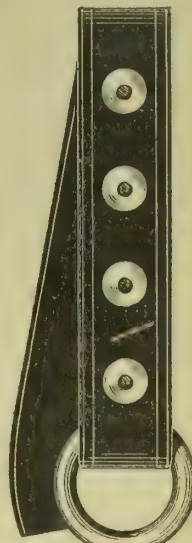
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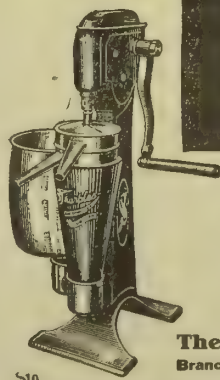
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THE BROWNING STOCK FARM

W. H. BROWNING, PROP.

WOODLAND, CAL.

A Farmers' Fair at Napa.

[Written for Pacific Rural Press.]

The County Fair held at Napa last week was essentially a farmers' event. It was suggested and promoted by the Napa County Farm Bureau and ably managed by Farm Adviser H. J. Baade.

Being a farmers' institution it was natural that farmers should support it both from an exhibitor's and an attendance standpoint. And this they did in a manner that was surprising to everybody concerned.

The agricultural and horticultural exhibits were made up entirely by Farm Centers, there being seven of these exhibits which ably presented the vast agricultural and horticultural resources of Napa county. These were housed in commodious tents where one also found industrial, school, women's work and better baby exhibits that were educational in nature and pleasing to look at.

The most surprising exhibits, at least to the stranger, were in the livestock division. Here one found dairy cattle, hogs, sheep and horses in surprising numbers and high in quality.

Here one realized the change that is taking place in Napa county agriculture. There is only one meaning to a representative livestock show in a horticultural county: diversification instead of specialization.

In dairy cattle you saw State Fair prize winners in the Guernsey herd of B. E. Nixon and the Holstein herd of the Napa State Hospital. Jerseys

were shown by M. L. Mitchell and F. M. Johnson.

Hogs which have commanded more than ordinary attention from the Napa county farmer in recent years were largest in numbers. Durocs have gained a strong footing and this was evidenced in the show. Here you found additional strength by the addition of the first and second prize yearling boars at Sacramento and the first prize yearling sow, all three purchased the week previous to add quality to Napa county Durocs.

The largest single exhibit of hogs was made by the A. L. Tubbs Co. with Yorkshires. Here also was State Fair material shown by a Napa county breeder. Berkshires and Poland Chinas were shown largely by members of the Napa High School Agricultural Club. Sheep, lacking the showman's professional touches, but bearing evidence of utility, were on display, as were also draft horses.

Poultry, for long the horticulturist's friend, was well represented by exhibits of choice breeds.

The farm folks of Napa county were proud of their first agricultural fair. It was better than they had expected but not so good as the one they are already planning to hold next year. And well they may be proud, for it was promoted and supported almost solely by Napa county people, no exhibits from other counties being shown.

250-POUND HOGS IN EIGHT MONTHS.

[Written for Pacific Rural Press.]

The growing conviction among hog raisers is that to make the most money from a hog, it should be turned off at a much earlier age than has been the custom. Experience seems to show eight months a reasonable length of time for a well-bred hog to put on 200 to 250 pounds of flesh.

This is the age and weight that R. R. Henderson of Kings county has been marketing his purebred Poland Chinas and at a good profit.

Mr. Henderson's experience, like other successful hog raisers, has been that to secure such weights some grain must be fed all of the time.

To his sows and young pigs he feeds soaked middlings and ground barley, with alfalfa pasture. This is continued till the pigs are three or four months old when they are put on a straight ground-barley ration and alfalfa pasture. When the final fattening period starts, barley is replaced by ground corn which is grown on the ranch, the hogs at this time being closely confined and not given any room for exercise.

During winter months, the feed is somewhat varied, yellow pie-pumpkins then taking the place of alfalfa. Often the supply lasts till the first of January. These furnish a good succulent growing food in connection with grain, and are grown at small expense on pieces of land that would otherwise lie idle.

To secure the advantages of alfalfa pasture and not damage it by over-pasturing, all the pens are

made of movable panels which allow frequent and easy changing.

Individual houses are used for the brood sows at farrowing time. The average number of pigs raised per litter with this system has been eight.

After weaning time, the hog does not enjoy the protection of any specially constructed house, shade and shelter being provided for each pen in the form of home-constructed, straw-thatched roofs, supported by posts. Each pen is provided with fresh drinking water but no wallow.

The experience on this ranch, like many another in Kings county, seems to show that feed and breeding are more essential than fine quarters, in the economical production of market hogs.

SANITARY CALF BARN.

[Written for Pacific Rural Press.]

While many dairy calves are grown in California without shelter of any kind other than trees or the small amount furnished at the side of buildings, better calf culture is possible when a special building is provided for them. This also simplifies the work of feeding, as was recently seen at the dairy of the State Hospital at Napa.

The tax rate of the Modesto Irrigation district has been fixed at \$3 on \$100 assessed valuation.

Duroc - Jersey Swine

S. S. SOUTHWORTH, Napa.
E. C. CURTIS, Napa.
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Registered Holstein Cattle.
NAPA STATE HOSPITAL, Napa.
DR. STETSON, Napa.

GREAT SALE OF GREAT RECORD HOLSTEINS.

Just as we go to press a partial report of the dispersion sale of the Rio Vista Holstein Farm herd, at Rivera, Sept. 19, reaches us. From it we learn that four cows and two

bulls had been disposed of for \$1000 before 3:30 p. m., the first day of the sale; also that, besides these, fourteen cows and two bulls were sold at \$400 and over. A complete report of this important sale will appear in our next issue.

PUREBRED LIVESTOCK BREEDERS

IN
NAPA COUNTY, CALIFORNIA.

No district in the entire State of California presents more ideal conditions for the proper and economic raising of purebred livestock than Napa county. The directory below gives the names of prominent breeders whose stock is of superior excellence.

Montelena Herd LARGE YORKSHIRE SWINE



MONTELENA BIG DICK,
First Aged Boar and Reserve
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THE IDEAL HOG
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Young Stock for Sale.
Both Sexes.

Calistoga, Cal.

Revada Guernseys

BRED IN THE PURPLE.



Junior and Reserve Grand Champion Cow at Sacramento.

REVADA FARM

B. E. NIXON, Proprietor. Yountville, Napa County, Calif.

Every animal on this farm is imported, and carries the blood of such noted sires as Governor of the Chene, Sequel's Monogram, and Governor of the Gree.

HERD BULL IMP,
Ricardo of Edgemoor 34367.

Nothing for sale at the present time, but we are booking orders for year-old bulls out of limited supply of delivery.

Registered

Duroc-Jersey Hogs

Our old and young boars took ribbons in every event in which they were entered at the State Fair when 206 Durocs were in keen competition.

We cull closely, selling only stock which we would like to keep, and our guarantee insures satisfaction.

If you want superior foundation stock write us for prices on our "High Model," "Crimson Wonder," and "Defender" boars.

RIVER BEND FARM

ST. HELENA,

CALIFORNIA.

MAPLEWOODE RANCH

CALISTOGA, CALIF.

Won First and Grand Champion on Senior
Holstein Bull Calf at the Napa County Fair.

Have two young bull calves for sales
at a great bargain.

E. M. HOLJE, Owner.

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Raising Poultry for Profit

QUESTIONS AND TAFFY.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

Hens Gasp and Wheeze.—What is the cause of "gapes"? Had a hen die recently from it. She breathed through her mouth, extending neck at same time and gasping, made a noise like an asthma sufferer. — D. C. R., Galt.

I have lived in California nearly a quarter of a century and had chickens all the time and never yet met a case of "gapes." There is no such disease in this state. Your chickens are suffering from bronchial trouble; and the one that died lived until the disease reached the lungs. Unless you treat the whole flock it may become epidemic and cause you much loss and trouble. Clean up all your grounds as well as possible and keep all lime away from the yards or dropping boards. Sometimes dry lime will so irritate the lining of hens' throats as to cause bronchitis, yet some poultrymen continue to throw it around. Give tincture of aconite in the drinking water or in a little warm mash, allowing one or two drops for each fowl. Repeat this treatment about three times per day, and you will cure all that are curable in two days and prevent others from getting it, provided your housing is right.

Catarrh in Eyes.—What is the cause and fault with my chicks? They have mattery eyes and have some trouble in breathing. — S. C. S., Tres Pinos.

The fault is not with the chicks but with the care given them. They have catarrhal cold which is fast developing into roup. You did not state the age, or if they are brooder chicks or older ones that perch, so it is difficult to advise. Anyway the chicks have a bad cold and you should investigate their sleeping quarters. The remedy lies in correcting the cause and trying to stop the spread of it. Give all of them a dose of castor oil in a little warm mash, wash the eyes and nose in a solution of peroxide of hydrogen and water, made strong enough to kill the germs. Do this for several days but repeat the oil treatment only once, about two days after the first treatment. See that the chicks are not exposed to drafts of cold air and are not crowded in corners, as this is very often the cause of colds.

Taffy, Prunes, Chickens, Bees.—Three years ago you wrote an article in the Press about prunes, chickens, and bees. Well, I had the prune trees getting old, and I thought it would be best to replant between the rows and dig the old trees out in a year or two. But after considering what you said, it seemed to me pretty good logic. Then I set about getting the chickens and bees, bought some Orpingtons from you and some Leghorns from Petaluma. After the first year sold the Leghorns, as I found I got more eggs in winter from the Orpingtons; and I bought twenty stands of bees.

The result has been most gratifying. Most of my neighbors are shy of prunes this year while I have a very fair crop, and have enough honey besides what is sold to more

than pay whatever expense I went to. The chickens have enriched the soil and made all my fruit trees look fifty per cent better than before the chickens. The trouble with fruit growers in this (Placer) county, and I suppose other places, is that we don't put enough back on the land. Our peaches this year are heavier than usual and I give the credit to the chickens. They put fertilizer on the ground, scratch around and keep the ground stirred up better than a man and cultivator. We grow more fruit hereabouts for shipping than for drying, but it weighs whether green or dried. Our prunes are good and are nearly dry now and instead of digging these trees out, wish I had more. — Orchardist.

CHICKS' EYES MATTERED.

To the Editor: Leghorn chicks were hatched in June. They have done nicely, and are putting on size and weight. They show no indications of bowel trouble; no symptoms of cholera, with which I have had much experience in past years. Several deaths have occurred the past week. I find a number with watery eyes, some slightly matterated. The chick droops and dies. There is no swelling on the head except in the eye, and those I have examined have shown clean mouths. It does not appear to be roup. The chick is in good flesh and feather, and retains its appetite. — L. B., Glen Ellen.

[This looks like pox. Vaccinate.]

VALUE OF DUCKS.

To the Editor: What is the value of white Indian Runner ducks about two months old (full feathered and from a very good egg-laying strain)? I should like to sell for breeding, as I think that will pay best. — Mrs. R. D. K., Richfield.

[Answered by Geo. H. Croley, San Francisco.]

[Good quality, purebred white Indian Runner ducklings two months old intended for breeding, should be worth 50 cents to \$1.00 each. If exceptional specimens were selected, these values might be greatly increased. The value of a duckling at this age is greatly influenced by the feed and intelligent care it has received. A fixed price could not be stated without seeing them.]

POULTRY NOTES.

About 143,000,000 dozen of eggs are held in cold storage by 221 firms in the U. S., says a report of the Dept. of Agriculture recently issued.

Premium lists of the 19th annual show of the Santa Clara Valley Poultry and Livestock Association are ready for distribution. Address Secretary Charles R. Harker, Porter Building, San Jose.

In explaining the purposes of the new organization known as the Poultry producers of Central California, Inc., which if successfully promoted will market the entire poultry product of this section of the State, State Market Director Weinstock says: "Under this plan Central California is to be divided into districts, but before the organization may become effective at least 75 per cent of the poultry of the districts shall be represented by the signed contracts. This would mean that the organization would control approximately 1,000,000 hens. No stock shall be disposed of except to poultry raisers, and should a purchaser go out of business, the association retains the right to pur-

chase such stock in preference to outside buyers. The producer agrees to market all his eggs and poultry through the association for such products, less 2 cents per dozen on eggs, and 50 cents per dozen on poultry, the estimated selling costs."

Farmers and their wives who attend the practical Short Courses given by the poultry division of the University Farm will benefit by investigations carried on for the past three years concerning comparative feeding values of high protein feeds, such as meat scrap, fish scrap, buttermilk, linseed, soy beans and coconut meals, blood meal, tankage, alfalfa meal, etc., for laying hens. They will also learn how to hatch, rear, feed, breed, and care for fowls. Instruction will be given in practical carpentry work as applied to building poultry houses and making coops, nests, hoppers, crates, etc. Demonstrations will be given of the best way to grow such crops as alfalfa, rape, kale, beets, etc., for green feed for fowls.

Poultry Breeders' Directory.

CLOSING OUT—FOR SALE CHEAP.—3 Electric Incubators, 576 egg capacity each. 2 Electric Incubators, 144 egg capacity each. 16 Electric Brooders, 150 chick capacity each. Complete with circuit breakers, thermostats, connecting sockets, etc. Address T. R. Jacobs, P. O. Box 395, San Mateo, Cal.

BARRED PLYMOUTH ROCKS.—"The kind that Win and Lay." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for catalog showing winnings at California's leading shows. Chas. H. Voden, Box 398, Los Gatos, Cal.

INCUBATOR CHICKS.—Thoroughbred White Plymouth Rock, \$25.00 per hundred; White Leghorn, \$12.50 per hundred. Highest class of stock bred to standard and to lay. Awarded all first prizes at California State Fair 1916. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

BABY CHICKS NOW READY.—Hatches every week. Write for special "Fall Chick" circular. See why Fall chicks pay. R. I. Reds, Barred Rocks, Black Minorcas, White and Brown Leghorns. Campbell Poultry Ranch, Campbell, Cal.

CROLEY'S DRY MIXED INFANT CHICK FEEDS for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by GEO. H. CROLEY CO., Inc., Poultry Supplies, San Francisco.

BUFF ORPINGTON CHICKS.—September and October delivery. First hatch Sept. 13th. Orders taken for from 25 to 150; \$15 per 100. Eggs \$1.50 per 15; \$8 per 100. The Ferris Ranch, Rt. 2, 144 D, Pomona, Cal.

THE SANTA CLARA VALLEY HATCHERY solicits your orders for Fall and Spring delivery in 8 breeds of baby chicks. Order early and get the best. Jos. A. Bihn, Lincoln Ave., San Jose, Cal.

1000 BARRED ROCK, R. I. Red Baby Chicks. How many do you want? Price and quality will suit. Roofden Poultry Ranch, Campbell, Cal.

EASTMAN'S REED TO LAY Barred Plymouth Rocks, Chicks, Eggs, Cockerels. Fairmead Poultry Farm, Fairmead, Cal.

DAY-OLD CHICKS.—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS. Pea Fowl, Pigeons, Wm. A. French, 545 W. Park St., Stockton, Cal.

WHITE WYANDOTTES.—Blue-ribbon winners. Eggs \$2 to \$5. Chicks, pullets, cockerels. R. W. Strawetski, Route 2, San Jose, Cal.

ONE PAIR Plumaged Golden Pheasants. T. D. Morris, Agua Caliente, Cal.

TURKEYS, DUCKS AND GEESE.

HART'S BRONZE TURKEYS AND EGGS.—Large reduction in price of stock. Order now for fall delivery. Free Circulars. Albert M. Hart, Clements, Cal.

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Guaranteed harmless to the birds yet is 20 times stronger than carbolic acid in the destruction of germs. Comes in powder form. As a paint for the walls, ceilings and floors of poultry houses, cellars, dairies, barns and other places it is unequalled. Just mix with water and put on with brush or sprayer. Will paint any surface a beautiful snow-white and disinfect the premises at one operation. Will not taint food products of any kind.

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Will never flake, peel or blister. Adheres to wood, stone, brick or cement. Get it from your dealer. If he will not supply you send his name and your order to us.

10 lbs. (10 gals.) for \$1 and postage. 20 lbs. (20 gals.) for \$2 delivered free. 50 lbs. (50 gals.) for \$4 delivered free.

A trial package, enough to paint and disinfect 250 square feet, from your dealer or sent by parcel post for 25 cents.

GERMAIN SEED & PLANT CO., Distributors, Dept. L, LOS ANGELES, CAL.

Mrs. Best's Letter.

My dear Friends: The nearness of the first of October brings a realization that we must have fall clothes whether the task of selecting them is a pleasant one or not.

New models in suits are being shown in both fitted and belted models and the materials are wool velours, broadcloth, duvetyne, checks, and fine serges. The coats are quite a bit longer and sleeves have a tendency to be tighter and trimmed with fancy cuffs and buttons. The skirts are even with the tops of the boots, but it is equally good style to have them a little longer and much better taste for women who have passed their first youth.

The colors, in addition to navy blue, taupe and black, include plum, Burgundy and brown and there is a very extensive use of fur, mole, Hudson seal, beaver, and Patagonian kid fox.

Coats are very luxurious this year, made with wide flares, deep collars and large cuffs—many of them belted and some with fur trimming and others with entire capes of fur.

In hats, the two most popular models are the toques and the sailors. The toques are many times made of breast feathers in all colorings and if of velvet are worn with the new veil which is fastened to hang straight down all around, in some instances touching the shoulders. These veils are of fine net with designs and borders on them. The sailors are very simply trimmed, often just a flat ornament or the new wool embroidery in many colors. These are shown mostly in black, but there are also some beautiful white and soft grays.

Marabou trimming is having a revival of popularity. You see it on dresses and sweaters and also used as scarfs and large collars. It is very soft and pretty, but is not as durable as fur, especially in the rainy season.

Separate collars are quite the vogue this fall, the materials include organdie, net, Georgette crepe and white broadcloth. The styles include sailor collars, simple roll collars and others that fall far down the back.

To be modish this fall, the hand-bag must be odd and you will find them of velvet, steel-beaded moire, and crocheted, as well as ornamental leather.

Shoes are high, in both cut and price, and have many combinations of colors as well as the conservative blacks and bronzes. One very good style is to match the upper of the shoe to the suit or dress.

Rosabella Best.

LAUNDRY HINTS.

Discolored white or cream-colored lace may be bleached by washing and dipping in blue water, then cover with a lather of castile soap and dry in the sun. Afterwards, rinse in cold water and iron.

Tar stains should be rubbed with lard, then washed with warm water and paint stains with turpentine.

If you rinse a plate with cold water before breaking the eggs on it, add to them a pinch of salt and then stand where there is a current of air, you will have no difficulty in beating them to a froth.

THE HOME CIRCLE

TO KILL COCKROACHES.

Editor Home Circle: The following is a reply to an inquiry that lately appeared in your publication: The brown or black cockroaches are a great pest to ships in tropical seas. They lie in the cracks of the woodwork and come out at night. A certain remedy is to get five or six pounds of crude alum and dissolve in hot water, and having cleared the pantry of all movables, wash all the woodwork and hard paint thoroughly with the hot strong solution. The cockroaches will disappear with the first application generally, but occasionally a second may be needed. No dead ones will be seen; they simply disappear. W. H. Marston. Berkeley.

A COOKY DRAWER.

Having hit upon an excellent place for keeping cookies, I thought some one else might welcome the idea. I took a smooth, wooden grocery box, three inches deep and three feet long and as wide as the pantry shelves and painted it inside and out with white enamel paint. Then I hung it so as to pull out like a drawer close up under the lowest pantry shelf. The cookies can all be laid flat on sheets of waxed paper, thus preventing their breaking.—Mrs. D. S. G., Ripon.

GRAPE JUICE RECIPE.

Editor Home Circle: Will you give me a recipe for making grape juice for family use?—G. L. K., Haywards.

[Answered by Wm. V. Cruess, Zymologist at U. of C.]

In answer to your correspondent's request for a recipe for making grape juice for family use, would recommend the following procedure: Take equal quantities of ripe Muscat grapes and any red wine grape. The wine grape chosen should not be too ripe but should be of a tart or acid taste. Remove the berries from the stems and crush them together. Heat the crushed grapes, preferably in a double boiler, to a temperature of 130 degrees F. A dairy thermometer can be used for this purpose. During the heating process, the grapes should be stirred constantly to facilitate extraction of color. Set the grapes aside and let them stand for about six or eight hours. This allows time for the dissolving of the color from the skins. Press out the juice and strain it through a jelly bag until it is clear enough to bottle. The bottles used to receive the juice should be perfectly clean and should be scalded out with hot water before use. At the same time that the bottles are prepared, sterilize enough corks for

the purpose by boiling them in water for about four or five minutes. Fill the bottles to within an inch and a half of the top. Cork with the sterilized corks and tie the corks down with string. Prepare a sterilizer by placing a wire screen or a wooden grating in the bottom of a washboiler or a large pot. If a screen is not at hand, several layers of cloth will do for a false bottom. Place the bottles in a horizontal position on the bottom of this sterilizer. The bottles may be piled one upon another. Fill the boiler with cold water so that the bottles are completely immersed in it. Heat the water very slowly to a temperature of 175 degrees F. This temperature should not be exceeded and a temperature of at least 170 should be reached. The range is between 170 and 175. Maintain at this temperature for fifteen minutes. The water can then be poured off and the bottles removed to a quiet place to cool. Before the bottles have cooled, the corks should be dipped in hot paraffine and as they become cooler they should be dipped in paraffine at a moderate temperature so that the corks are completely coated with this substance. This will make an air-tight seal necessary for the prevention of spoilage by yeast or mold. Juice prepared in this way will not be absolutely clear but will have a good flavor and color.

PEACH KISSES.

Pare and halve six large, ripe peaches. Boil one pint of granulated sugar and one-fourth pint of water until the syrup snaps when dropped into cold water. Dip halved peaches into syrup and set away to harden on a buttered dish. When hard, whip the whites of four eggs stiff, beat into this five tablespoonfuls of powdered sugar and two tablespoonfuls of blanched and chopped almonds. Drop the egg mixture in large spoonfuls into a pan of boiling water and cook for a minute or two, then lift out carefully and place on a plate. Fill each peach half with this. Serve cool.

REST ROOMS.

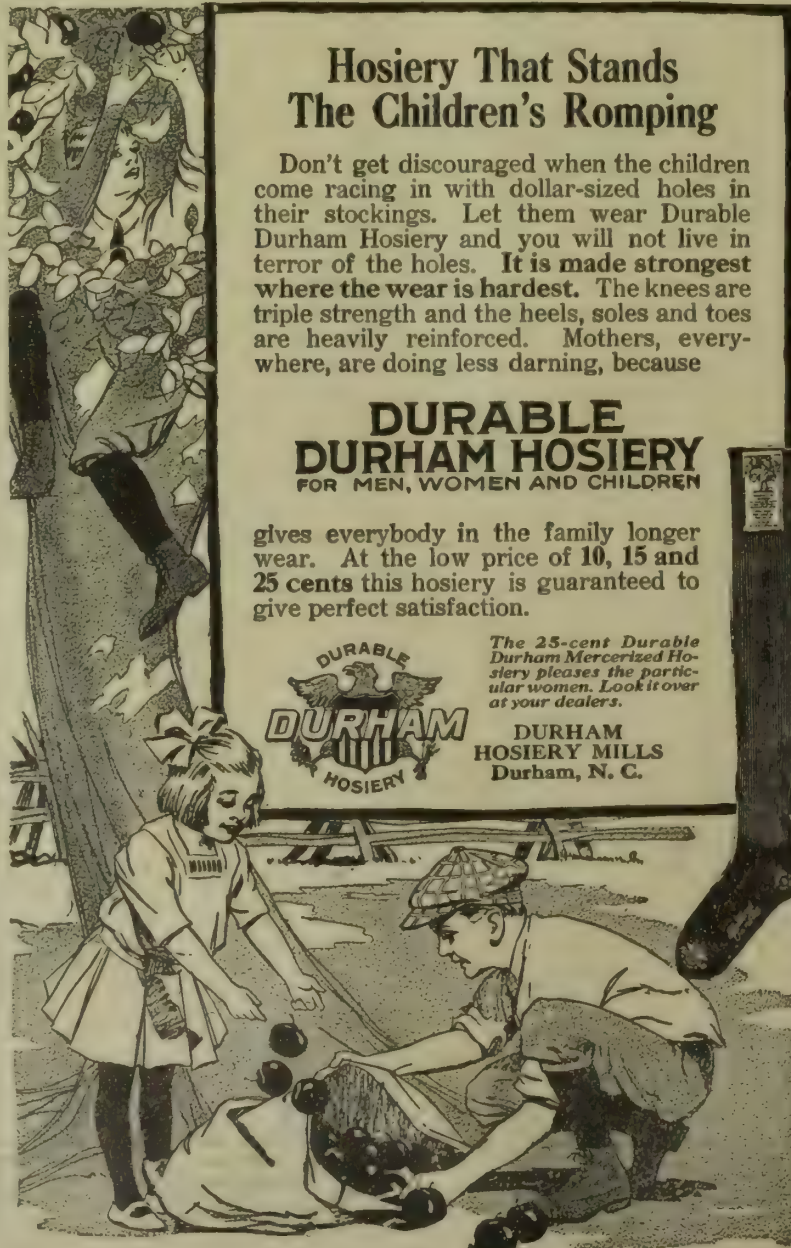
In the little town of Ripon, in the San Joaquin Valley, in front of a modest white cottage, is the hospitable sign "Rest Room and Library," and on the door the words, "Walk in." Obeying the invitation, the writer entered to find two rooms, with chairs and tables and a comfortable amount of reading in the form of books and periodicals.

These rooms, which were part of a house, were furnished and kept open by the Parent-Teachers' Association and were for the use of anyone who wished either to read or rest. They hope in time to furnish a third room with a couch or bed, for the use of mothers with small children who have driven to town and need some place to rest and care for their children.

He is happy whose circumstances suit his temper; but he is more excellent who can suit his temper to any circumstances.—Hume.

Slouchy postures menace health and induce bodily malformations.

Health brings happiness; sickness, misery.



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The Children's Romping**

Don't get discouraged when the children come racing in with dollar-sized holes in their stockings. Let them wear Durable Durham Hosiery and you will not live in terror of the holes. It is made strongest where the wear is hardest. The knees are triple strength and the heels, soles and toes are heavily reinforced. Mothers, everywhere, are doing less darning, because

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gives everybody in the family longer wear. At the low price of 10, 15 and 25 cents this hosiery is guaranteed to give perfect satisfaction.

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Those who prefer the old style 8-rib garments will find Mayo 8-rib Underwear an excellent value.



The 50c Men's Underwear that's knit in the dollar way

All dealers have Mayo Underwear or can very quickly get it for you.

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Our Catalogue of Hyacinths, Tulips, Narcissus, Lilies, Hardy Plants and rare winter-blooming plants free to all.
John Lewis Childs, Inc., Floral Park, N.Y.

Floral Department.

[By Geo. N. Tyler.]

Bulb Growing.—As it will soon be time to plant, a few notes might help. All bulbs require a very rich soil. Use only thoroughly decayed manure; two years old is the best. Under no consideration use green manure where bulbs are planted. Small bulbs, such as sparaxis, Ixias, crocus, etc., should be planted two inches deep; tulips, jonquils, Spanish iris, narcissus, etc., three inches; hyacinths four inches, and always measure the depth from the top of the bulb. You can plant from October to January. No bulb requires so rich a soil as the hyacinth. If planted in poor soil the flowers may do very well for the first year, and if planted more shallow than four inches the heat of the sun will cause the bulb to split and divide into innumerable small bulbs that will not bloom well for two or three years. Remember that all bulbs and plants have a tendency to lift while growing. Freezing and thawing have the same effect, so it is better to plant a little too deep than too shallow. Hyacinths should be set eight inches apart, tulips six, and smaller bulbs closer. Lillium candidum (St. Joseph lily) should be planted as soon as the corms can be procured—the same applies to Longiflorum, Specosium, and all the types of lilies. Plant candidum in the bright sun; and a shady location for the others. Do not try to bloom them for Easter as this can only be done in a greenhouse that is well heated.

Pot Culture.—It is very important that the bulb should form a strong root growth before leaf growth starts. Bulbs when flowered in pots in the house, should be kept in as cool a room as possible; a few degrees above freezing will answer. Pot the bulbs in pots of a sufficient size, in a sandy soil mixed with rotted cow manure and leaf mold (three parts sandy loam, one part manure, one part leaf mold) and give thorough drainage. After potting give a thorough soaking and then put away in a dark cool place for six weeks and water them every two weeks, or oftener if they require it. Never let them dry out after starting root growth, or you won't get any flowers. This is to encourage root growth. In six weeks' time leaf growth will have started, but do not move them directly into the sun for a week or two. You can put them out of doors on the porch where they will get a little morning sun and gradually give them more till they can stand the bright sun. Remember that all bulbs coming into flower require a great deal of water at the root, and in some cases twice a day is not too often to water them.

ATTRACTIVE SUMMER HOUSE.

Editor Home Circle: I read in the Rural Press of a few weeks ago a description of a playhouse for children where the covering was palm branches and I thought you might be interested to know how ours is made. In shape it is just like an arbor and instead of vines being planted around the sides, we planted Thompson seedless grapes and en-

couraged them to grow freely. In a very short time, the whole arbor was covered and the vines produce fruit as well. The green foliage lasts all through our hot weather and the arbor is a cool, attractive place for the little ones to play.—Mrs. D. S. H., Turlock.

Pickle for Meat.—To each gallon of water, allow 1 lb. salt, 6 ozs. brown sugar and 1 oz. saltpetre. Boil five minutes. When cold, the meat can be put in and should be kept for five days.

Sunlight and sanitation, and not finery or frippery, make the healthy baby.

Good Health.

[By H. E. Pastor, M. D.]

THE HOUSEHOLD MILK.

Pure, clean milk is an unexcelled article of food for both children and grown-ups. In California, at this season of the year, when pasturage is dry and the atmosphere laden more heavily than usual with invisible disease germs, when there is a lack of the cleansing effect of frequent rainfalls, care is especially necessary in the drawing of the milk and its subsequent handling. Typhoid, dysentery, and other diseases may be transmitted through



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Each taste—Japan, English Breakfast, Ceylon, Oolong—is distinct, different. And one of them is the taste that will make you tea-happy! If you will send ten cents, we will mail you the Taste Packet—the simplest, surest way to pick YOUR kind of tea. It contains four parchmyrn envelops of the four taste types—enough to make five or six cups of each kind.

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REFLEX SLICKER \$3.
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Ant Destroyer—is slow acting—does not kill instantly, but gets the nest as well as the parent. Does not lose strength. Positively non-poisonous—no danger to children, house pets, or foodstuffs. Send 6c for trial can. Ask your neighbor. She uses it. At your dealer. Accept no substitute.
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Single box to carload lots. Samples by mail. Fancy pack, single box, \$1.25 del'd.

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its agency. If you do not produce your own milk, obtain it from those only whose premises are kept scrupulously clean, and if your milk is dependable and satisfactory do not change your source of supply. Cows are not subject to many diseases dangerous to milk-users. If the cow is seemingly in good health and has no signs of udder inflammation, and has passed the tuberculin test, her milk is likely to be wholesome and safe. Better employ a veterinarian for the tuberculosis test. The milk-pail should be washed and scalded with clean water before using, the premises where the milking is done should be in sanitary condition, the hands of and person of the milker clean, and the milk should be cooled quickly after being drawn and kept cool until used.

Wise Procedures Not Always Compulsory.

An inquiry has been passed up to this department relative to the employment of a medical attendant in cases of childbirth—as to whether it is compulsory or optional. While it was not designed to pass upon medico-legal questions in this column, and we do not invite such, it may be said that such attendance is not legally compulsory, though neglect to do so in emergencies would render the offender subject to prosecution. The ushering into this with many dangers to both mother and babe; and while no untoward incident may accompany such an event, it is worse than imprudent to neglect professional aid when such may be obtained. Parturition may, as some contend, be a “natural” or physiological function, but it is one which borders closely on a pathological condition, and may easily, and frequently does, become mainly such. Don't take unnecessary chances.

Health vs. Wealth.

What doth it profit a man if he gain the whole world and lose his own health? is an admonition sent out by the U. S. Public Health Service. This is not exactly gospel truth, but is just as true as if it were. In the mad scramble for social or political position, for a competence and something more, to in some way get ahead of the other fellow, the ambitious man forgets the respect due his body and its limitations, and before he is aware of his indiscretion is suffering the inexorable consequences. With the loss of bodily health there is a loss of mental efficiency, and the strenuousness that was supposed to bring happiness and comfort results rather in wreckage. Be content with moderate attainment, and taste some of the joy of life as you go along.

Health Jottings.

Ill-health lowers earning power. Disease is one of the nation's greatest burdens—and largely an avoidable one.

The first step in national preparedness is for each of the nation's citizens to cultivate physical fitness in his own person.

If you persist in tolerating a polluted well on your farm, don't complain of the size and frequency of the undertaker's bill.

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

San Francisco, Sept. 20, 1916.

Wheat.

Export buying has caused a firmer feeling in the East, and there is a lively demand locally, which has sent values up a little further on club and Sonora varieties.

[f. o. b. San Francisco.]

Sonora wheat	.....	\$2.15@2.20
Northern club	.....	2.15@2.23
Calif. club, ctl.	.....	2.10@2.20
Northern Bluestem	.....	2.35@2.40
Northern Red	.....	2.20@2.40

Barley.

The speculative market has developed a little weakness this week, with some pressure to sell, and while prices on the spot are firmly maintained the movement is rather quiet.

[f. o. b. San Francisco.]

Shipping, ctl.	.....	\$1.75 @1.80
Choice feed, ctl.	.....	1.67½ @1.70

Oats.

Prices stand unchanged, with a fairly active movement in both feed and seed grades. Good seed is scarce, and some holders are asking an advance, but there is a good deal of poor stock offered.

Red feed	.....	\$1.80@1.85
Red seed	.....	2.00@2.10
White	.....	1.75@1.80
Black seed	.....	3.00@3.25
Texas Red seed	.....	2.25@2.35

Corn.

Eastern yellow moves slowly here, but there is some demand, and prices have again been marked up. Egyptian is in good demand at the old prices.

[f. o. b. San Francisco.]

Eastern Yellow, ctl.	.....	\$2.10@2.15
Milo Maize	.....	Nominal
Egyptian	.....	1.95@2.05

Beans.

The bean market is beginning to show a little more life. There have been some small offerings of new-crop large and small whites, which have been taken up at high prices, as stock has been very scarce; but prices will be much lower shortly, when the harvest gets well along. The crop here is very good, and the Eastern outlook is much better now than it was a few months ago. Limas hold steady, and red kidney beans are lower. Spot supplies in general are well cleaned up, but some markets are still fairly well supplied, and prices are expected to get down to about the normal level within the next few weeks.

[On wharf, San Francisco.]

Bayos, per ctl.	.....	\$4.75@5.00
Blackeyes	.....	3.50@3.60
Cranberry beans	.....	5.00@5.20
Horse beans	.....	3.25@3.50
Small Whites (south) new crop	.....	7.00
Large Whites, new crop	.....	6.00
Pinks	.....	5.50@5.75
Limas (south)	.....	5.30@5.40
Red Kidney	.....	6.50
Mexican Reds	.....	5.25@5.40
Tepary beans	.....	4.50@4.75

Seeds.

More alfalfa is coming in, and some is offered below the last quotations. Oregon vetch is also available at easier prices, though it is not offered very freely. Canada peas are scarce.

[Wholesale prices, S. F.]

Alfalfa, per lb	.....	20@22 c
Oregon Vetch	.....	4½@5 c
Mellilotus Indica	.....	7½c
Mellilotus Alba	.....	20 c
Bur clover, re-cleaned	.....	10½c
Canada Field Peas	.....	5½c

Hay.

Arrivals last week were the lightest in a long time, most of it coming by boat, as it is still impossible to get cars to handle the shipments from many sections. However, it is believed that most of the hay has been taken from the fields, and little increase in arrivals is expected from now on, un-

til the movement from warehouses begins. Local business is not very active, but prices are well maintained; and there has been a very satisfactory trade in the country, which promises to increase during the winter. A new factor of strength is the awarding to a local firm of a contract for 9,000 tons for Government use in Manila and Hawaii.

[Wholesale prices per ton, carload lots, San Francisco.]

Wheat, No. 1	.....	\$13.00@14.50
No. 2	.....	10.00@12.00
Tame oats	.....	11.50@15.50
Wild oats	.....	10.50@13.00
Barley	.....	10.50@13.00
Alfalfa	.....	10.00@14.50
Stock hay	.....	8.50@9.50
Straw, per bale	.....	35@50

Feedstuffs.

There is little feature in this market, nearly all lines of feed being in good demand with the consuming trade, with prices steadily held.

[Wholesale prices, per ton, carload lots, San Francisco.]

Beet pulp, per ton	.....	Nominal
Alfalfa meal, per ton	.....	\$18.00@19.00
Bran, per ton	.....	27.00@28.00
Oil Cake	.....	Nominal
Cocoonut cake or meal	.....	23.00@25.00
Cracked corn	.....	44.00@45.00
Middlings	.....	35.00@36.00
Rolled barley	.....	34.00@35.00
Tankage	.....	45.00
Rolled oats	.....	34.00@35.00
Rice middlings	.....	30.00@32.00

Vegetables.

Prices show very little change from last week, most lines of summer stock, such as tomatoes, cucumbers, summer squash, peppers, eggplant, etc., being in more liberal supply, with prices about as low as they ever go. The cannery demand still helps tomatoes out a little. Celery is becoming more plentiful, and good stock is offered at 10c. String beans are steady, with little attractive stock offered, but limas are lower. Green corn holds steady at the former level.

Celery, Alameda, bunch	.....	15@19c
Cucumbers, lug	.....	2@30c
String Beans	.....	2@4c
Lima Beans	.....	2@3c
Summer Squash, lugs	.....	25@30c
Eggplant, lugs	.....	30@40c
Peas, lb	.....	5@6c
Tomatoes, lugs	.....	25@50c
Green Corn, sack	.....	50@1.50
Okra, box	.....	40@60c

Potatoes and Onions.

The outside call for potatoes has dropped off sharply, resulting in a recession in prices for both Delta and Salinas stock, \$1.75 being the top price for the former. Sweetens continue to gradually decline. Onions have been marked up a little locally, but a drop is reported in Eastern markets, following reports of a large crop in Oregon.

[On wharf, San Francisco.]

Potatoes, ctl., Delta	.....	\$1.50@1.75
Salinas	.....	2.25@2.35
No. 2	.....	75@1.00
Sweet Potatoes, per ctl	.....	1.90@2.00
Onions, yellow	.....	1.75@1.90
Garlic, new crop, per lb	.....	4@5c

Poultry.

Jewish holidays this week have caused a better feeling in the chicken market, and all good offerings have sold off well, large hens being especially in demand. Young stock also has been marked up a little, and other lines are firm in sympathy.

[Wholesale prices, S. F.]

Turkeys, live, lb	.....	23@26c
Broilers, 18 lbs to doz, and less, lb.	.....	25@28c
do, over 18 lbs to doz	.....	24@26c
Fryers	.....	24@25c
Hens, extra, per lb, colored	.....	20c
Small leghorn	.....	15@17c
Smooth Young Roosters, per	.....

Special Deciduous Market Report.

By J. L. Nagle.

Sacramento, Sept. 18, 1916.

Inactive demand and heavy shipments from Eastern states has caused all markets to break on Freestone peaches. This, however, does not apply to Clingstones, which are being offered freely and at good prices.

The Malaga market has revived, due principally to the fact that the shipments are now in keeping with the demand.

The light and steady offerings of Tokays have been the means of keeping a brisk and active market. Prices throughout the country on this latter variety are high and indications are that they will continue so throughout the season.

Offerings are being made for Emperors packed in redwood sawdust. Packing will not commence for ten days or two weeks but we anticipate the movement will not be heavy at

any time and prices will probably rule at from \$2.25 to \$2.50 per keg or drum f. o. b. California. Speculators will probably store a few cars in cold storage for the Eastern holiday demand but the price will depend largely upon the keeping quality of these grapes, which at this time cannot be determined. The following prices have ruled for the week:

New York.—Malagas averaged \$1.57; Tokays, \$1.75; Muscats, \$1.00; Bartlett pears, \$2.50; Clairgeau, \$2.10; Levi peaches, \$1.02.

Boston.—Tokay grapes averaged \$1.65; Malaga, \$1.35; Bartlett pears, \$2.55; George's late peaches, \$1.27.

Chicago.—Malaga grapes, \$1.39; Tokay, \$1.66; George's late peaches, \$1.00; Salway, 80c.

Total shipments to September 18, 11,824 cars, as against 9,721 cars to same date last year.

Special Livestock Market Report.

San Francisco, Sept. 20, 1916.

Cattle.—There has been no change in the situation during the past week.

Hogs.—The packers still complain of the lightweights being shipped in and some are offering premiums to encour-

age proper raising and finishing.

Sheep.—Shippers are attracted to the Eastern markets by better prices there.

Wool.—Defective is quoted 10 per cent lower and free staple holds steady at last week's figures.

lb. (3 lbs. and over)	23@25c
Squabs, per lb	28@30c
Geese, per pair	2.25@3.00
Ducks	13@14c
Old	13c
Belgian hares	10@11c

Butter.
The export movement to England seems to be at an end, as local prices are getting too high, but there is still a very fair movement up and down the coast, with some exports to Pacific ports. This is keeping the arrivals pretty well cleaned up, and prices are steady to firm at about the former range. Supplies are coming in well.

Thurs. Fri. Sat. Mon. Tu. Wed.	
Extra	30 31 30 30 30 30
Prime 1sts	28 30 30 29 29 29
Firsts	28 28 28 28 28 28

Eggs.
Egg offerings continue to diminish, and the tendency of prices is upward, though present values are turning the demand from extras to lower grade and storage or Eastern stock. Extras reached 40c early this week, but that was more than the market would stand.

Thurs. Fri. Sat. Mon. Tu. Wed.	
Extras	38 39 39 39 40 39
Sel. Pul.	33 33 33 33 33 33

Cheese.
Y. A.'s have gained the 1/4c lost last week, and the market looks a little firmer, with current arrivals moving off fairly well.

(S. F. Dairy Exchange prices.)	
Y. A.'s, fancy	17 c
Fancy Calif. Flats, per lb.	14 1/2
Monterey Cheese	15@16c

(Los Angeles Dairy Prices.)	
Butter	31 32 31 31 30 30
Eggs	37 37 37 37 37 37

Deciduous Fruits.
Local prices show very little change. The demand so far this week has been somewhat slow, and it is hard to realize the top figures on many offerings, but still there is no real weakness. Raspberries and huckleberries show a little more firmness. A few Oregon cranberries have appeared, selling at 10c per lb., and larger offerings are expected soon. Alexander apples are cleaned up, and bellflowers are slightly easier locally. In the shipping trade, the largest size is easier, but 4-tier stock is quite strong, owing to the preponderance of very large apples in the crop, which has run very largely to fancy grades. With reports of a high percentage of No. 2 stock in the East, the outlook is good. Bartlett pears are quite firm, and peaches are cleaning up well, with moderate offerings. Figs are rather easy. Seedless grapes are slightly lower. Persimmons are appearing, with the usual limited demand.

(Wholesale prices, San Francisco.)	
Huckleberries, lb., fancy	7@8c
off grade	4@5c
Raspberries, chest	4.00@6.00
Strawberries, chest	2.50@4.50
Apples:	
Bellflower, box .....	.65@.75
Jonathan .....	.85@1.00
Newtown .....	.85@1.00
Pears, Bartlett, bx, No. 1	1.75@2.00
No. 2 .....	.75@1.00
Persimmons, box, dbl layer	1.25@1.50
Peaches, lugs .....	.60@.75
Carriers .....	.70@.90
Quinces, lugs .....	.40@.50
Figs, Cal. black, box, double layer .....	.35@.50
White, single layer .....	.40@.50c
Plums, crate .....	.75@1.00
lugs .....	.75@1.00
Prunes, crate .....	.60@.85
Cantaloupes, std crate .....	.70@.75
Casabas, crate .....	.75@1.00
Watermelons, doz	1.50@2.50
Grapes, Malaga, small box .....	.60@.75c
Muscata, small box .....	.65@.75c
Grapes, Thompson, crate .....	.60@.75c
Tokay, crate .....	.60@.75c
Isabella .....	.65@.75c

Dried Fruits.
The dried fruit market throughout the country continues to show a gradual improvement, as the jobbers seem pretty well convinced that prices have passed their lowest point for the season, and are getting into the market for their requirements up to the holidays, if not for the entire season. The packers are accordingly taking hold more freely in the country, and most offerings are being rapidly disposed of. Apricots are becoming very scarce, and packers have raised their offers another half-cent, without bringing out any more stock than they can use. Figs continue as firm as ever, with the black variety a trifle higher, and there will evidently be a great shortage. Prunes show no further change here, but New York reports some large export sales, which tends to stiffen the market. The trade there, however, has so far been covering only nearby requirements. Country offerings are still large, but are quite firmly held. [Net to growers, bulk basis, f. o. b. shipping point.]

Apples, new crop	4 1/2@5 1/2c
Apricots, per lb. 1916	13@13 1/2c
Figs, white, 1916	5@5 1/2c
Figs, blk., 1916	5@5 1/2c
Calimyrna, 1916	9@10 c
Prunes, 4-size basis, '16	5 1/2@5 1/2c
Peaches, old	5@5 1/2c
1916	5 1/2@5 1/2c
Pears	6 1/2@7 c

Citrus Fruits.
At the New York citrus auctions Monday, September 18, fancy Valencia ruled higher on all sizes, the thirteen cars auctioned averaging from \$2.55 as high as \$6.40 per box. There was little change in lemons, the three cars auctioned averaging \$4.75 to \$6.30. The average on Valencia in Philadelphia on the same date was \$3.10 to \$5.25 and in Boston \$2.20 to \$4.20. Between 2200 and 2500 cars

remain to be shipped, and shippers look for these to be disposed of advantageously during the balance of September and October. The top grade of oranges is rather scarce, and local prices have been marked up again. Choice grapefruit also shows an advance, while all grades of lemons are easier.

Oranges, Valencia, fancy, bx	4.25@4.75
choice	4.00@4.25
Grapefruit, fancy	3.25@3.75
choice	2.50@3.00
Lemons, fancy	6.00@6.50
choice	5.50@6.00
standard	3.50@4.00
Lemonettes	3.00@4.00

Honey.
The honey situation locally is becoming a little easier, though prices are still well maintained. There is now plenty coming in for current needs, and merchants are not anxious to put in large stocks until the weather is cooler.

(Wholesale prices, San Francisco.)	
Water white, comb	13@15c
Light Amber	10@12c
Amber	8@10c
Water white, extracted	8@9c
Light amber	6@7c
Dark	4@4 1/2c

Nuts.
The shortage of almonds is illustrated by the quick movement of the crops controlled by the Almond Growers' Exchange. Heavy confirmations of orders began coming in immediately after the announcement of prices, and within a day after the advance the Exchange was completely sold out, and withdrew from the market.

(Exchange prices.)	
Almonds, 1916:	
Nonpareils, lb	20 1/2c
I. X. L.	18 c
Ne Plus	17 c
Drakes	16 c
Languedoc	16 c

Horses.
The local market is rather heavy this week, as there was an auction of a big teaming and contracting outfit due to retirement from business, in addition to a sale of a large lot of all-purpose horses of light to medium weight formerly held by a local dealer. Interest has been rather slack, and it is difficult to make sales at full prices. Offerings in the country, however, are said to be light, and bargains are hard to find.

(Approximate values in San Francisco, based on auction sales.)	
Drafters, 1700 lbs. and up	250
Drafters, 1550 to 1650 lbs.	150@200
Chunks, 1350 to 1500 lbs.	150@175
Wagon horses, 1050 to 1350 lbs ..	110@150
Green Mountain range horses, 950 to 1200 lbs.	20@75

Livestock.	
[Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.]	
Steers, No. 1	6 1/2@7 c
No. 2	6 1/4@6 1/2c
Cows and Heifers	5 1/2@6 c
No. 2	5@5 1/2c
Bulls and Stags	4@4 1/2c
Calves, light	8@8 1/2
Medium	7@7 1/2c
Heavy	6@6 1/2c
Hogs, grain-fed:	
100 to 150 lbs.	8 c
150 to 250 lbs.	9 c
250 to 325 lbs.	8 1/2c
Prime Wethers	7 1/2c
Spring Lambs, f. o. b.	\$5.25@5.75
country points	

(Prices paid in country.)	
Red Bluff, year's	25@27c
Sacramento Valley, year's	19@25c
Mendocino, year's	31@32c
Mendocino, 7 months'	26@27c
Southern, year's	18@21c
Southern, 7 months'	13@16c
Imperial Valley, year's	17@19c
Imperial Valley, 7 mos	14@15c
Nevada	21@23c
Fall wool	10@20c

Hops.
Picking is now over in some sections, and the buyers are taking more interest in the new offerings, with slightly better prices offered. Sales in the Sonoma-Mendocino district are reported at an advance of 2c.

Sacramento	8@10c
Mendocino	10@12c
Oregon	8@10c

Groceries.
After a sensational decline of 75c per 100 lbs. on sugar early this month, local refiners have advanced the price 15c, and the market is rather firm at the new level. Coffee is firm with an upward tendency, and provisions are very firm. Alaska salmon has been nearly all sold by packers, and salt salmon is very high. Large shipments of codfish have arrived, but the outside demand prevents any easiness.

Ending	1915	1916	1915	1916
Jan. 2...	28.60	28.00		28.8
" 9...	25.33	26.65	26.00	28.1
" 16...	27.50	27.83	26.83	28.1
" 23...	30.66	28.25	30.66	28.5
" 30...	28.66	36.33	28.00	36.6
Feb. 6...	26.88	30.25	26.80	32.3
" 13...	26.74	31.40	27.30	32.0
" 20...	29.00	32.00	27.16	32.2
" 27...	29.10	30.90	27.00	35.2
March 6...	27.00	24.08	25.25	24.1
" 13...	24.66	29.91	24.00	28.8
" 20...	23.00	28.33	22.50	27.1
" 27...	22.91	28.50	23.00	28.0
Apr. 3...	23.00	28.50	22.23	28.8
" 10...	23.08	29.31	22.00	28.0
" 17...	23.00	27.33	22.00	27.5
" 24...	23.00	25.25	22.00	25.0
May 1...	23.08	24.33	22.00	25.3
" 8...	23.00	24.10	23.08	25.0
" 15...	23.16	24.58	23.00	25.6

" 22...	23.75	25.00	23.25	25.00
" 29...	23.08	26.50	23.00	26.50
June 5...	23.90	25.50	23.00	27.00
" 12...	24.08	25.83	23.83	27.00
" 19...	25.16	24.50	26.00	25.91
" 26...	25.50	24.50	26.16	25.91
July 3...	25.33	24.60	26.16	26.00
" 10...	26.21	26.40	26.00	26.60
" 17...	26.58	25.83	26.00	26.00
" 24...	25.41	26.00	25.50	26.00
" 31...	27.00	26.00	26.80	25.91
August 7...	27.00	26.16	26.00	26.00
" 14...	27.00	26.50	26.00	26.00
" 21...	27.50	26.50	26.00	27.95
" 28...	28.00	27.25	26.00	28.50
Sept. 4...	28.00	30.00	26.00	30.50
" 11...	28.00	30.20	26.00	32.00
" 18...	27.00	30.41	26.00	31.09

WEEKLY EGG AVERAGES.				
Cents per dozen for Extras.				
Week Ending	San Francisco		Los Angeles	
	1915	1916	1915	1916
Jan.	2....38.50	35.60	42.00	35.00
"	8....32.66	31.41	35.16	32.00
"	16....31.00	30.33	30.33	30.75
"	23....30.50	34.83	30.00	34.33
"	30....28.16	36.33	26.66	36.66
Feb.	6....23.33	35.66	23.75	35.50
"	13....23.00	28.90	25.10	28.00
"	20....23.60	23.66	23.58	20.33
"	27....21.40	20.30	20.80	18.50
March	6....20.50	18.33	19.00	18.00
"	13....20.66	19.50	19.00	18.91
"	20....21.00	20.00	19.66	19.08
"	27....20.83	21.41	18.50	20.83
Apr.	3....	21.75		21.00
"	10....	22.00		21.00
"	17....22.00	21.16	23.08	20.91
"	24....21.80	21.83	22.25	22.58
May	1....26.16	21.00	22.00	22.58
"	8....23.33	21.20	22.00	21.41
"	15....23.58	24.58	22.00	20.83
"	22....23.58	25.46	21.91	22.50
"	29....23.50	25.33	21.83	22.50
June	5....22.50	25.00	20.70	24.51
"	12....22.00	25.00	21.00	24.16
"	19....22.00	24.83	20.00	23.75
"	26....23.33	24.66	23.83	24.58
July	3....23.83	24.60	22.50	24.00
"	10....25.50	26.30	25.00	24.00
"	17....24.83	27.16	24.66	27.00
"	24....25.41	28.20	25.50	28.00
"	31....25.80	28.50	25.80	28.00
August	7....30.50	31.00	28.00	29.16
"	14....31.16	33.08	28.66	31.00
"	21....31.25	33.09	30.16	31.83
"	28....30.58	33.50	29.16	32.00
Sept.	4....30.08	36.12	30.16	32.00
"	11....34.33	37.90	31.66	36.00
"	18....37.98	38.83	33.37	37.00

Publisher's Department.

"The Pacific Rural Press sells all of my hogs," writes R. J. Miller of Lathrop.

A. E. Balmer of Martinez writes us that: "I am pleased to tell you that my ads in the Pacific Rural Press have been highly satisfactory in results, both in volume and class of business secured."

This is the time of year when you should be buying books for winter study. We offer technical books, such as "California Fruits," "California Vegetables," "California Garden Flowers," "California Poultry Practice," and "California Hog Book." Send for price list on one or all of them.

Writing from Winton, Cal., Geo. L. Horine says: "I am just starting in the ranch game, having been here just a year, and have learned more good, practical knowledge from the Rural Press and four of your books than everything else put together. I am going into Durocs exclusively, and have a foundation of seven sows and a boar. You might be interested to know that my father and mother, starting in San Diego, county in 1888, swore by you as long as their ranch life continued, and that I am doing the same."

Our readers may have noticed in the daily papers that the print paper situation is becoming more acute each week. Many papers have been forced to suspend and others are cutting down the number of pages printed. With us here we are cramped for space to give the amount of reading matter that we wish after advertisers' demands are met. Next week we hope to print a 32-page planters' number, if our paper arrives from the mill—otherwise we shall have to confine it to 24 pages.

Beginning with our next issue, the time for receiving or discontinuing advertising in the Rural Press will be set forward from Wednesday noon to Tuesday evening, the reason being that our steadily increasing list forces us to put our forms to press several hours earlier in order that all papers may be mailed out of this city by Friday evening each week. Advertisers will please remember that their wishes will be catered to in the best manner possible when orders are received prior to Tuesday evening. Later than that we will not be responsible.

Classified Advertisements

MISCELLANEOUS.

REBUILT GAS ENGINES from 3 to 50 h. p. Thoroughly overhauled and guaranteed. We handle only high grade engines. Write us your requirements. Motors, Gas Engines bought, sold and exchanged. Mechanical Installation Company, 181-89 Second St., San Francisco

EVERY SIZE WROUGHT IRON WATER PIPE and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a SQUARE DEAL. Weissbaum Pipe Works, 160 Eleventh Street, San Francisco.

GAS ENGINES—I can furnish rebuilt Fairbanks, Morse, Otto, Peerless, Samson, Union and other good makes in all sizes. All investigators buy and all buyers are delighted. Pay when satisfied. J. J. Pottinger, 189 2nd St. San Francisco

SECOND HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHEETER PIPE WORKS, 306-8 Howard St., San Francisco.

STUDY TELEGRAPHY, Stenography, Book-keeping, Law, English, Board, room and tuition may be earned. Catalogue free. Mackay Business College, 909 Main, Los Angeles.

LIVING EXPENSES REDUCED THROUGH CO-OPERATIVE BUYING—Write for catalogue and particulars. Pacific Co-operative League, D236 Commercial St., S. F.

BUY ROASTED COFFEE WHOLESALE—Best, 10 pounds, \$3.00 delivered. Order with remittance. W. M. J. SCHROTH CO., 112-B Market St., San Francisco.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency. Savings and Loan Bldg., Stockton, California. Established fifty years.

TO REDUCE THE HIGH COST OF LIVING, send for our Wholesaler to Consumer Catalog. SMITH'S CASH STORE, 106 Cay St., San Francisco.

GRAPE STAKES! POSTS! Made to order. Direct from forest to consumer. S. A. Buchanan, Box 25, Boulder Creek, Cal.

BELLFLOWER APPLES direct from orchard. Fancy grade bulk pack. 75c per box. E. A. Hall, Watsonville, Cal.

SEEDS, PLANTS AND TREES.

SEED POTATOES—The largest field of Burbank, certified under State inspection in California; also Certified American Wonder and high-grade Oregon Seed, Garnet Chili and others. References: Acting State Horticultural Commissioner, Mr. Geo. P. Weldon, W. V. Shear of Stockton, and the Pajaro Valley National Bank of Watsonville. This stock will go fast, and would advise your writing early. H. A. Hyde, Watsonville, Cal.

FRUIT TREES—Long on apricot, almond and pear. Fine, thrifty stock. H. A. Hyde, Watsonville, Cal.

WANTED.

WANTED—Young man, single, as partner in stockraising proposition in Monterey county. An opportunity for a party desiring to start stockraising with a small investment. As only a few hundred dollars will be required at start, to take interest in stock. If desired party can remain at present employment for a time. Box 230, Pacific Rural Press

WANTED—Young men and women to attend the Western Normal Course—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A," Western Normal, 524 E. Market St., Stockton, Cal.

WE WILL PAY YOU \$120.00 for congenial work in your own community. 60 days or less. Man or woman. No capital required. Opportunity for promotion. Spare time may be used. Full particulars free. International Press, 302 Winston Bldg., Philadelphia.

POSITION WANTED—To take charge of a vineyard and orchard. Qualified by experience and agricultural college training. Straight salary; salary with dividends or share management acceptable. Reference furnished. Box 240, Rural Press.

AGRICULTURAL COLLEGE GRADUATE, with three years' experience in large orchards, open for engagement, October 1st. Box 228, Pacific Rural Press.

COUNTRY LANDS.

RANCH FOR SALE—50 head of horses and machinery. 2000 acres of rich, sandy loam land for sale, on the east shore of Washoe Lake, Nevada, between Reno and Carson City, 1000 acres being cultivated, in alfalfa, grain, and potatoes. The land is irrigated by a 400 H. P. Hydro Electric Pumping Plant, which belongs to the property, and the cost of pumping is less than 60 cents per acre. Fine cattle and sheep range outside of ranch property. Will sell this property as a whole or in small lots. Water right of 2000 inches goes with the land. Address W. G. Douglass, Virginia City, Nevada

MAILED FREE—A catalog of lands, containing a list of choice alfalfa and hog ranches; orange and lemon groves; suburban homes; little farms close to the city, poultry ranches; olive, walnut, apricot and peach orchards for sale by The James R. H. Wagner Co., Suite 200, 631 So. Spring St., Los Angeles.

WANTED—Farms, large and small, in all parts of the State. Our system of placing owners in direct communication with buyers has brought us hundreds of applications for farms. What have you to offer? Write for our listing blanks. Western Farms Bureau, 660 Market St., San Francisco.

FOR SALE—23.32 acre irrigated ranch planted to alfalfa and almonds. Good improvements; close to good town; high school; creamery, etc. Price, \$275 per acre. Owner going East. Antonio Medeck, Esparito, Cal.

INFORMATION free about State, Government land now open; different counties and States. Write your wants. Joseph Clark, 1511 K St., Sacramento.

LAND FOR SALE near Livingston. 10 to 80-acre tracts. \$100 to \$125 per acre. Address, Box 31, Livingston, Cal.

WANTED TO RENT an equipped dairy on shares. J. Hudson, 585 Market St., San Francisco, Cal.

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President Ripley states
Sante Fe's position
on eight-hour wage law
and asks an important
question.

The Atchison, Topeka and Santa Fe Railway Co.

CHICAGO, ILL., September 8, 1916.

TO SANTA FE EMPLOYEES AND THE PUBLIC:

This is the position of The Atchison, Topeka & Santa Fe Railway Company regarding the controversy with its train-service employees over their demand for increased compensation:

Congress, hastily acting under a threat of four leaders of labor organizations, enacted a so-called eight-hour law, which is nothing more or less than an advance of twenty to twenty-five per cent in the wages of the best paid men in railway service.

It is only fair to our employees and the public to say that The Atchison, Topeka & Santa Fe Railway Company does not intend to comply with the law except as and when ordered to do so by the court of last resort.

The merits of the case have been fully explained in the last few months and need no further mention.

Should the courts finally decide that the increase must be paid, there will be an immediate demand from the remaining classes of labor, resulting in entire inability to pay without heavy increases in rates to be paid by the public—especially the farming class.

IS THE PUBLIC PREPARED TO MEET THE DEMAND?

This notice is for the information of all concerned.

E. P. RIPLEY, President.

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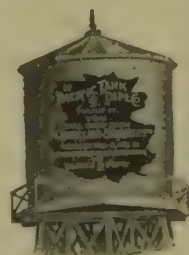
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THE PACIFIC RURAL PRESS

SAN FRANCISCO

SEPTEMBER 30, 1916.

LOS ANGELES

California State Library

What Fruits Should California Grow?

Fourteenth of a Series of Sketches in Which the Editor Presents Suggestions, Drawn From Long Experience, of What Californians Have Done and May Do for the Advancement of California Agriculture.

THE farther California advances in commercial fruit growing the more difficult, and at the same time the more important it becomes to answer our subject-question correctly. We are now producing each year fruits and fruit products, reasonably estimated to be worth more than one hundred and twenty-five million dollars at their points of sale beyond the State's border lines.

Though the foundation for this achievement was laid when our mountains, foothills and valleys assumed their present relations to each other and to the ocean and when our soils began to be formed from crumbling rocks and uncovered lake-bottoms; and though the chief agency for the development of our fruit industries was determined as soon as the population of California assumed the characteristics which the world recognizes as American, the achievement itself began within the memory of some who are now living and has attained its present dimensions largely under the observation of many who are now active in it.

In this rapid advance in production, from a meager amount, which left a few shiploads of gold-seekers in 1849 still hungry, to an output which now tops that of all single States and nations, there have been created changing points of view and purposes in production and distribution, which should be firmly fixed in the minds of those who now participate in the plans and practical operations of still greater development which is clearly reasonable and warranted.

First Purpose of the Pioneers.—Fruit growing was undertaken in California, by Americans and Europeans who came to the new State in the light of the gold-lure, with the same purposes which actuated them in their old homes, viz.: to supply their families and the local markets. The local demand must have seemed very large to those who planted the first trees, for not only was every fruit gathered for San Francisco from the old trees and vines planted at or near the missions in the previous decades, but every ship from southern coast ports, from Mazatlan to Chile; from Australia, Hawaii and all smaller islands of the south seas, and from the then open ports of the Orient, brought everything in the fruit line which could be undertaken with reasonable chance of arriving in edible condition. The first fruits of hardy trees then first coming into bearing in Oregon, were also seized by shippers who knew that gold was like dirt in the California

trade. From European and Atlantic ports also there came all kinds of cured fruits then in commercial standing. We have no space for adequate picture of this thrilling, world-seeking of fruits for California but perhaps one can grasp better realization of it when it is said that in 1853 twelve thousand barrels of dried apples were brought from New York at a cost of \$144,000. One who can remember the dried apples gathered from far Eastern farm kitchens sixty years ago surely needs no assistance to realize how hungry Californians must have been for fruit to yearn for them! This was the incentive to the first fruit planting by Americans; it was simply planting for the local demand, every kind of fruit which would grow and bear well, to make money and to displace importations.

A Patriotic Purpose.—But it was not long before the pioneers disclosed a patriotic purpose—to build a State, and they realize the relation of

horticulture thereto. Most people came to California to grasp gold and take it "back home" with them. How could they be held for service to California? In 1856 Col. J. B. Crockett, in the course of a public address, said this:

I consider it a very important matter to have apple trees for our boys to climb and green fruit for our little girls to stuff into their reticules; also peach cobbles, apple dumplings and cherry pies for old and young, because each one of these things inspires us with a home feeling and becomes a new bond binding us to the soil.

And in 1858, at a horticultural fair held in San Francisco, Wilson Flint gave this more definite declaration of patriotic purpose:

"It is to horticulture that every county is mainly indebted for its permanent prosperity: and, as an illustration of this, look at some of the best valleys in our State, where a land tenancy system of occupation prevails. There the population is nomadic, coming and going with the close of the harvest; having no permanent interest in the soil, a skimming cultivation is adopted, orchards are not planted, hedges planted, houses built fit for women and children to live in, nor does the transient citizen feel that identity of interest in the social and political welfare of the country which it should be his pride and ambition to foster."



The Pecan—Not Yet a Commercial Nut in California though It Makes Grand Growth, and, on Moist, Interior Low Lands, Bears Well.

Dawn of a New Conception.—The efficiency and energy of the pioneers and the precocity of fruit trees and vines under California conditions are both shown by the fact that the first fruit plantings suggested the danger of an oversupply of the local market as early as 1858, for Mr. Flint, in the address quoted above, also said this:

The subject of drying and preserving fruit so that there may be a supply throughout the year without importations and to enable you to become large exporters, should command earnest attention—as the time is rapidly approaching when our population can consume only a moiety of the pomological abundance which already is smiling around us. Our surplus crops must soon be turned to good account by shipment to the Atlantic and Pacific worlds.

(Continued on page 360)

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EDITORIALS

THE WEEK.

W E PART with September with regret because this year the month has made a record well nigh the ideal of its agricultural efficiency in California and has merited our profoundest appreciation and gratitude. It has reminded us of its ability in water bringing and yet has been content to display its proofs thereof most amply in places where no harm could follow and most lightly where deterioration of exposed products would result. In this kindly consideration for human interests September has brought heat and dry air for the lengthening of the harvesting period and has only spurred the dilatory by the hints conveyed by dews and mists instead of punishing them with drenching showers and dripping fogs. And this behavior of the first autumn month should evoke deep thankfulness, for these heavier penalties are proper parts of her punitive repertory whenever the month decides to be more just than merciful.

We undertake in this issue to pay a tribute to the memory of this year's September by emphasizing her bright opening of the planting season. We would have none forget that great and varied as are California's producing industries and expansive as they all now are under the alert effort and free investment which they are now commanding from Californians new and old, fruit production is our greatest and most distinctive industry and the one which still has the greatest power and popularity in State-building. California will be great in all lines which make good work a joy and profit, but greatest of all in fruit growing. Therefore we give prominent place in this issue to matters of interest and suggestiveness in connection with fruit planting—endeavoring to draw from the rich and varied experiences of the past courage and wisdom for the guidance of the present.

HEADWAY IN FRUIT INDUSTRY.

W E HAVE had a summer of great things with fruits. We have made large products and we have had free outward movement at good prices. Nearly all the evils which have been threatened have passed in the night of foreboding. We can realize now that we should not have been depressed by the darkness which the timorous and the selfish tried to draw around us. We should have known that such darkness could not be realized under the stars which have arisen over Californian industries during the last two decades. We should have had more confidence that the pathway of our characteristically great and desirable products could not be blocked by embargoes, nor cluttered by lack of transportation nor obliterated by deficiency of purchasing power among those to whom we ministered. One thing we lost sight of for a moment when the unwise or the interested began to draw their shadows over our fruit products last winter and that was the headway which our fruit industries had acquired by the diligent enterprise of producers and the welcoming desires of consumers. The headway of our fruit products is born of the heart-way of the

world and when head and heart work together there is no greater force in industry, as in other human affairs. * * *

AMERICA WILL SUPPORT CALIFORNIA.

A NOTHER very profound lesson is deducible from this year's experience in fruit and fruit products, viz.: the elasticity and capacity of the American demand. We are just beginning to understand and appreciate it. It is, however, clear enough now that California has a treasure in the purchasing power of the great nation, of which she is a part, which is the assurance of our distinctive production if we decently try to attract and develop it. The efforts of the associations of citrus fruit and raisin growers to popularize their products have uncovered this treasure and disclosed, not the measure, but a prospect of its volume and value. All other organizations of fruit producers have now a clear way blazed for them toward the permanence and expansion of their production. Though perpetual motion is a fallacy in mechanics, there is something very like it possible in production and trade. It lies like four peas in a pod. It is organization of producers for Production, Purveyance and Publicity Perpetually. And the prolonged operation of the policy, which these four words involve, is based upon the surest thing in the world today, viz.: the progress of the United States of America. We have today more than a hundred million people who are only beginning to know our fruit products. We have still to enlighten on this subject a constituency which is growing almost at the rate of the population-outfit for a new state every year—if we average the States away from the very old north-east corner of the country. And these multiplying millions are to live in regions which are by nature forbidden to produce for themselves the delicious things California will bring to them as rewards for the industries which they develop and extend. And to think that we have been so long peddling out to these millions only such amounts of such products as could filter through old trade channels automatically narrowed by the old commercial precept: "Sell as little as you can for the money, to reduce risk and insure profit." It is the joint producers' and consumers' interest to abolish this old traders' conception and enforce the policy to "sell as much as you can at a profit above cost of delivery." The moving force in this policy, which will ensure the fullness of the development of California's resources, is organization of growers for Purveyance and Publicity.

WORLD'S INTEREST IN OUR PRODUCTS.

O F COURSE we are not unmindful of California's interest in world trade though we have tried to throw great emphasis on our American opportunity and our duty in connection with it. We take it for granted that our fruit products will command the attention of the nations as they previously have and even more abundantly. We emphasize our own national opportunity because it has never been properly appreciated nor striven for on our part and because our right to possess it has been practically ignored by those who recently gained political power by exaltation of economic fallacies which have neither supported the government nor helped American producers as it was claimed for them. It is not likely that the country will call for farther experimentation along that line. Whichever political party wins in the coming election we are likely to have rational protection for American industry so that American production shall be protected from competition with un-American standards of living and citizenship. We must have this if the United States is to proceed to realize its destiny and its loftiness of world service. And when the next Congress shall insure that, we shall occupy a position of self-respect and influence in the world. This will enable us to develop to its fullness the policy of fair trade with American consumers and of publicity to inform them of our desires thereto. It will also enable us to command such world trade as we can compass for the superior products which we can profitably export—for we have no desire to compete with the low standards of the world's average products of similar kinds—either in this country or abroad. As soon as we get pro-

tection at home and such opportunity abroad as our product will command for itself, our fruit industries will assume new stability and confidence because this country is not like to repeat the crazy economic experiments of the last three years for a considerable period—perhaps for generations. * * *

WHAT FINANCIERS SAY OF THE FUTURE.

L EST some of our readers, through hard-headedness and heartedness, may think some of our inferences and arguments sentimental and unbusinesslike, we support our positions by references, for which such readers should have particular respect. We have previously alluded to a great canners' merger which now declares itself to possess \$19,500,000 in net tangible assets and whose sales of products during the current year are estimated at \$35,000,000. The common stock of the combined concern is priced at a figure on which the net earnings of this year would return 14 per cent. This figure of profits has a largeness which we apprehend but perhaps do not understand as well as a business man would. We seem, however, to understand better when we come to such plain English as this:

The new company will be engaged in the preparation of food products on the Pacific Coast where it will rank as the largest factor in a basic industry of staple character, with a market for its products throughout the United States and all important foreign markets. The growth in volume of business during 1914 and '15, while substantial, was retarded by the European war. While domestic business has become normal again the export trade is still unfavorably affected by the shortage of marine transportation, and a further substantial gain in sales is anticipated upon the cessation of the war.

There seems no sentiment in the above declaration in favor of this combination. We may have to invoke sentiment against it some day, but at the moment we accept it as evidence that fruit canning (chiefly) is held to be a "basic industry of staple character" to such an extent that financiers are ready to blow millions into it and expect not less than 14 per cent gain upon the present price of admission tickets. How much more gain they will get we do not know, but this is enough to prove that even though the figures of the present are large, these business magnates are building upon fruit production as a greater industry in the future.

GLADNESS OVER GREATNESS.

B UT though there is doubtless a lifting of plush waistcoats as these merging millionaires think of the future of the California fruit industries as the basis of their investments we doubt if they get so much uplift of soul from their end of the business as the fruit grower does from his, when his trees grow and bear well and the selling price fills his home with the comforts of the simple life. And of course it is the widespreading of the latter human joy which is of the greater moment to the State. It is for this that the California fruit growers are striving more intelligently now than ever before in their history. It is for this that they are constructing co-operative organizations which are new in their particular purposes and methods of work. And it is largely upon the confidence which such organizations have engendered that this year's plantings will be large and more definitely directed than hitherto. It is for this kind of planting that we have tried to demonstrate, on other pages, that the planter should keep his ear close to the ground of commercial suitability in the new settings which he will make this year. This is the way to be practically glad over the new greatness which is coming and to make its realization more sure. We believe our nurserymen, who have suffered more or less from the distractions of the last two years, will this year find good demand for all the well-selected and well-grown stock they have to offer, if they bring it early to the attention of planters. Buying and planting fruit trees should be carefully and leisurely undertaken. It is a mistake for both propagator and planter to have the selection left to the last month of the planting season, as is too often done. It is a thing to talk about and write about and think over and to get

every detail well arranged for the investment and the work. Be sure you understand the characters and achievements of your district. Study the requirements of the canners, shippers or driers who may be the buyers of your fruits. Consult the officers of the fruit association with which you ought to be affiliated. Go to the local conferences of fruit growers in your district. Read the books

and papers which bring to your consideration the methods and experiences of others. It is an advantage to be widely wise about any business in which you are engaged. It may make a shallow man shifty, but it deepens a man who has capacity for the exercise of judgment. And this it is which brings to a human soul a gladness which is over greatness.

By
the Editor

QUERIES AND REPLIES

Inquirers Must
Give Full Name
and Address.

Potatoes Failing.

To the Editor: I send a piece of potato vine showing discoloration of roots and lower stem. These vines died shortly after the bloom seemed to lack water even when ground was moist. Another trouble was that in some hills the seed pieces remain unused. Some hills were almost as planted and in others only part started. What is this trouble? What is the cure? Will the potatoes from such hills do for seed?—L. C. R., Grass Valley.

The specimen piece was too dry to warrant any impression about it except that it was dead. It seemed however to have no abnormal forms or colors. The appearance, coupled with your notes, suggests that the planting was too late, for the soil moisture. When a plant seems to lack water at the blooming it generally does lack water and an appearance of moisture is not enough. It is often the case that a grower trusts too much to a "show of moisture" without the substance thereof. The failure of the seed to start looks the same way. The soil was probably too dry to start the seed; also too dry to rot it. What good potatoes you do get would do for seed if they have strength enough to make good eyes.

Probably a Different Alfalfa.

To the Editor: In my field of alfalfa one-quarter was seeded with seed purchased for Surprise Valley seed, one-quarter was Utah seed and one-half was just alfalfa seed. The Surprise Valley seed has always been, from the start, so vigorous and quick to start after cutting, that in one week it is equal to the others at two weeks and holds that lead all the time, though it does not mature or make hay in less time than the others. The yield, however, is always from one-fourth to one-half more. I can see no difference in the shape or size of the leaf. The stem is not hollow. The soil conditions are exactly the same. Is it possible all this difference comes from good strong seed, or is it a different variety of alfalfa? This field is five summers old.—F. W. M., Orland.

Our opinion is that it is a different variety of alfalfa because it does not seem to us reasonable that a different degree of strength in the seed would hold through five years of uniform conditions—supposing that the stand is similar in both cases. Then a mere difference in the seed would not cause the different habit of growth which you note by its quicker, stronger start. The slowness in haying also indicates a different character of growth.

Raspberry Borers.

To the Editor: In digging up raspberry vines I find the roots badly infested by "borers." Is it safe to plant in the same place in the spring, and if so, should the soil receive any treatment, and what kind?—H. R., Berkeley.

If you dig up and burn all the plants you will destroy the larvae; and all the insects at this time of the year are in that form, inside the tissues of the infested plants. Therefore it is not necessary to treat the soil in any killing way. The re-infestation will come from February onward through eggs laid by clear-winged moths which begin to come from pupae in the old plants at that date or a little later. The same pest freely inhabits the root crowns of strawberries and to some extent of blackberries also, so your chance of getting more next spring or early summer is pretty good. The grubs can be killed by making a pond around the plants and holding the roots under water for four or five days.

Curing Citron.

To the Editor: Please tell how to dry citron as we buy it in the store. I have some which I have tried to dry, but have not succeeded as they all dry up.—Subscriber, Los Molinos.

The cured citron of the store is not a dried fruit—it is a candied fruit. The fruit is placed in barrels of brine for a month, the brine being changed

several times. The fruits are then boiled in fresh water to soften them, when they are halved, the seeds and pulp removed and the thick skins are put into cold water to take out green color. They are then put in syrup and allowed to soak for about three weeks in earthen jars. They are then boiled in heavier syrup, allowed to cool and dry until they assume the character seen in the commercial article. This is an outline of the foreign process. We are not aware how much it may be shortened, but probably very much. All this is the method with the true citron which grows on a tree like a lemon. Of course if you happen to refer to the "citron melon," that is not a citron at all and cannot be cured as such.

Vinegar Making.

To the Editor: Where can I find out how to make cider and vinegar from apples, and wine, also? Is it possible to make wine from grapes that are not regular wine grapes?—J., King City.

We have given these processes in detail in earlier issues. The easiest way to get information, both of domestic and factory processes, the principles upon which they rest and the appliances which they employ, is to send to the Experiment Station, Berkeley, for Bulletin No. 227, entitled "Grape Vinegar." The processes described are applicable to all fruit juices. Wine and wine vinegar can be made from all kinds of grapes, but the kinds of wine will range widely in character and quality. Wine grapes are simply varieties which have been selected for wine-making because their contents and relations of sugar, acid, color, flavor, etc., enable the producer to secure characters held to be desirable in different types of wine. Grape varieties differ so widely in characteristics that some are exceedingly desirable and some very inferior for wine-making.

Gophers and Poison Signs.

To the Editor: I have some alfalfa that I irrigate in checks and the gophers simply riddle the levees, which are pretty wide and low and give them quite a bit of dry ground to bore through. As my place is not fenced in, would it be legal for me to put a poison out providing I put signs out? If so, how many signs would I have to put out to be lawful? How would a squirrel poison that was printed in your issue of Sept. 2nd (page 238) work on gophers?—Subscriber, Corning.

A judge who is onto his job never decides more points than necessary to get rid of the case and so we get rid of the signs by deciding that there is no use putting out poison for gophers so anything else can get to it. Use a sharpened piece of a shovel handle or some other similar prod and punch around until you get into a main runway, about a foot below the surface of less. Drop the poison into that runway and cover the hole you make with a clod. There is little use trying to poison gophers by surface scattering. The squirrel poison you mention will kill gophers if a few grains are dropped in their runs, but it is better to prick the powdered strychnine into pieces of fruit, alfalfa stems or something else that is juicy and drop them into the runs.

Irrigating Fruit Trees.

To the Editor: I have a number of fruit trees such as pears, peaches, walnut, almond, etc., planted on each side of the driveway and irrigate them once a week. They are growing finely but a party tells me my almond trees would die, as they can't stand as much water as fruit trees. Is that true? The trees are two years old.—K., Sacramento.

Unless you are growing trees over hardpan there is no necessity of irrigating so often. Sometimes on a shallow soil it may be desirable to water very little and often. If you have good soil of fair depth the trees you mention ought to make good

growth with water not less than once a month in summer and if well cultivated need hardly be irrigated at all. Almond trees like water as well as others, though they need it less, because they root deeper when they can, but they cannot stand in the mud as well as some others can. Therefore, if you are using too much water, the almond may be the first to tell you about it, as your party advises you.

Connecting Apricot and Almond.

To the Editor: You told me some time ago that the apricot could not be trusted on the almond, but I had already planted seedling almonds, and I wish to make a top growth of apricots without taking them out. I think of making some kind of middle tree which will do well on almond and do well for apricot. Do you think myrobalan will do or not? If not, please tell me what kind of tree is good for middle almond and apricot.—Y. S., Winters.

Myrobalan would be doubtful because it is a slow grower, and you might have a tight piece of wood between two free growers, which might enlarge both above and below it, and make a bad union. This is a theoretical view because we have never seen that kind of double working. We do know, however, that the peach unites well with both apricot and almond, and makes about the same free growth. Therefore, we would use the peach but still, considering the loss of time and the cost of double-working, we should consider it better to snake out the almond seedlings and plant good apricot trees on a proper root.

The Apple Worm.

To the Editor: What would you advise to spray pear and apple trees with to kill the worms that eat the fruit? When and how many times should I spray?—A. J., Turlock.

Spray next spring as soon as the petals fall from the bloom, with lead arsenate two pounds to fifty gallons of water, using a good pump and nozzle making a fine mist which must reach the leaves and all the young fruits. Repeat spray each two weeks for four times in all.

Wild or Alkali Heliotrope.

To the Editor: I send a weed which seems hard to get rid of. It keeps coming up just as often as I cut it off. I would like to know how to get rid of this weed. Does it come from the seed each year or does the root live in the ground over winter, like Johnson grass?—Reader, Winton.

[Answered by Prof. P. B. Kennedy.]

The plant is Alkali heliotrope (*Heliotropium curassavicum*), a native of the Western States, and most commonly found in alkaline situations where the water-table is near the surface, or where there is seepage from irrigation canals. From such places it spreads to the grain fields, even when only small amounts of alkali are present in the soil. It is a relative of the cultivated heliotrope of the gardens and resembles it to some extent, but lacks entirely the delicious fragrance. The stems and leaves are quite succulent and the perennial root creeps not unlike morning-glory. On the approach of frost in the late fall it gradually dries up and turns black. The chief objection to the plant is that it remains green and succulent in the grain fields at harvest time and clogs up the machinery. Its seeds are also a common impurity in seed grain. The sprays of flowers vary from white to purple. No definite experiments have been carried on to determine the best methods to eradicate it. Ordinary summer fallowing does not kill it. The patches would have to be treated frequently with a hoe or weed cutter, so as to prevent the formation of leaves. The underground rootstocks would then succumb due to the lack of starch-forming ingredients secured from the air through the leaves. Another reason for its persistence is the fact that stock do not care for it, and hence it is left undisturbed to multiply abundantly.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., September 26, 1916.

STATIONS	Past Week	Rainfall Data		Temperature Data		
		Seasonal To Date	Normal To Date	Max'm	Min'm	
Eureka .....	.00	1.78	1.08	60	44	
Red Bluff .....	.02	.70	.63	96	56	
Sacramento .....	.14	.21	.28	92	50	
San Francisco .....	.47	.80	.21	80	50	
San Jose .....	.60	.61	.30	88	46	
Fresno .....	.14	.22	.16	96	52	
Independence .....	.00	.22	.12	86	44	
San Luis Obispo .....	.00	.00	.38	88	46	
Los Angeles .....	.00	.00	.02	82	56	
San Diego .....	.06	.03	.02	70	40	

Peach Growers' Business Booming.

[Written for Pacific Rural Press.]

The California Peach Growers Inc. is fighting to keep its head above the inrolling tide of dried peaches from its members; and still the volunteer contracts come in, about 75 new growers having signed up without solicitation in the first two weeks of September according to Mgr. A. L. Sunderland.

The Association is paying 5 cents orchard run in the sweat box, to growers; and when they shall have been graded and sold, each grower will be paid according to the quality of his peaches. Those who are holding back their crops at request of the Association, which has no room for the tremendous deliveries, are being financed by the peach belt banks who make loans on orders signed by growers directing the Association to repay the loans out of early deliveries.

Eleven thousand tons of dried peaches had been delivered by the middle of the month; all available warehouses were full up, three Fresno warehouses were rented and full, all the sweat boxes which growers would leave are stacked up in the yards of the receiving stations all over the State. At Kingsburg, with a grader of 35 to 40 tons capacity per day, 125 to 175 tons per day are being delivered. Growers are wanting their sweat boxes back as soon as possible, to use for raisins.

Sales were very satisfactory on the opening prices and a list of advanced prices put out Sept. 6 has brought many new orders. We saw one order for 80,000 pounds, which came Sept. 14. More peaches have been sold than the Association expected, to date. It is expected that outside peaches must all be sold first, because of their lower prices.

Peach orders used to be for solid cars of peaches, but of late years the tendency has been to take them in assorted cars of raisins, peaches, and other dried fruit. This year over 85 per cent of orders to date are for assorted cars. This is a large reason why deliveries to Eastern buyers are not being made faster, since they must wait for raisins. Two grades

have been eliminated by the Association, thus raising the sizes in the remaining four grades.

The Cal. Peach Growers do not expect to force orders—they intend to await the consumer demand, which is not to be demoralized by packing a lot of peaches to rest on retailers' shelves a long season and perhaps spoil. It is better to process and pack dried peaches shortly before they go into consumption. Meanwhile they are stored in sweat boxes or in sanitary bins after grading each grower's lot separately. Prices are named to the trade which bring the desired returns to growers, and yet do not raise consumers' prices.

Growers as a whole are standing up to their contracts in fine shape, according to Mr. Sunderland. There are some who have grievances or think they have, but the hardest kicks come from those who have cured by the old careless methods, making dark slabby dried fruit or chunky green fruit, both of which are hard to sell and are paid for as lower grades or rejected. Those who cannot deliver on account of lack of storage facilities this first season, are taking their lot gracefully with the financial arrangements mentioned.

Opening prices to the trade were lower than outside California packers expected, so those who contracted at high prices this spring are rejecting all not strictly up to specifications. Many of these are offered to the Association, which rightly refuses to handle them unless their owners sign the three-year contracts.

The Peach Growers' Warehouse Co. was incorporated Sept. 9, with a capital of \$100,000, to make legal the issuance of negotiable warehouse receipts. The Cal. Peach Growers Inc. will lease all their own and subsidiary warehouses to this subsidiary company, which will then issue to the Cal. Peach Growers the desired warehouse receipts for fruit stored in them. Directors of the warehouse company are Wm. Glass, Wylie Giffen, W. B. Holland, Ray Humphries, and A. L. Sunderland.

Gros Colman Grape and Its Aliases.

[Written for Pacific Rural Press by Prof. F. T. Molett.]

It is not always easy to determine the correct name of a grape. It is probably impossible to adopt the law of priority adopted in botany, but it is very desirable to have but one name or at least as few as possible for a single variety. Perhaps the best rule to adopt, and that which is most commonly followed, is to take the name used in the region where the variety is cultivated most extensively. This is the only justification of the name Tokay for a variety which is grown on a large scale only in California. This grape has nothing to do with Tokay, and the grape from which that famous wine is made has no resemblance to it.

In introducing a new grape, this rule can usually be followed, but there are sometimes difficulties due to limitations in the flexibility of the human tongue. These difficulties are perhaps exaggerated for we have adopted without serious incon-

venience such names as Feher Szagos and Petite Sirah, though they are occasionally corrupted or improved to "Fair" and "Pretty Sarah." The adoption of the name of Rupestris St. George was due to fear of this difficulty. Its commonest name in the regions where it is most grown is Rupestris du Lot, but the pronunciation of this word and of most of its other synonyms offers almost insuperable obstacles to the Anglo-Saxon organs of speech. The College of Agriculture, therefore, after mature deliberation, decided to adopt St. George in its publications and the stock seems to succeed about as well under this cognomen, though it is one of its least commonly used.

When we have adopted a name it is very difficult to change it, so it is very desirable that we adopt a suitable one and stick to it. When a variety becomes popular rapidly its first christening is usually per-

manent. When it is tried many times in many localities with only partial success it usually acquires a large number of synonyms before it finds its useful place in our vineyard.

A variety which exemplifies the last case is the Gros Colman. This variety is grown sparingly or largely from the Southern Caucasus to the hot-houses of England. According to Goethe, it possesses 13 synonyms, while Molon lists 25. In the Caucasus, where it appears to have originated, it is called the Dodrelabi. In Belgium, England and Northern France, where it is grown largely in hot-houses, it is called Gros Colman.

This grape is of very fine appearance, very large, round and black, in large bunches. It is crisp and agreeable to eat and with care can be shipped. Gros Colman from Belgium was commonly found in the markets of New York and other Eastern cities.

Twenty-five years ago this variety was tried in Sonoma, Napa and other

coast counties, but was abandoned because the grapes nearly always split open just before they were ripe enough to gather. Lately it has been discovered that it succeeds admirably in certain of the warmer sections, but most of the growers have lost the original name, or have preferred a new one. From one locality it is shipped as the "Queen," from another as the "Big English" and lastly it is being advertised as a new variety under the name of the "Servian Blue." It seems desirable to stick to the name of Gros Colman, by which it is known all over the world, and to which its reputation is attached.

It promises to be a good commercial variety for the hotter localities. It is very vigorous and bears well with short pruning. It becomes firm, dark colored and very sweet in the San Joaquin valley and other hot regions and ships almost as well as the Malaga. In the coast counties it is usually unsatisfactory even for home use.

Raisin Growers Happy.

[Written for Pacific Rural Press.]

With the biggest raisin crop ever marketed (that of 1915) entirely sold, and all out of the California Associated Raisin Company's hands before the 1916 crop commences to come in, raisin growers are happy over the market prospects. They believe that the Associated's past record justifies the expectation that any crop that may be raised on present acreage may be marketed at high prices to producers and no advance to consumers.

Growers are more optimistic than Manager James Madison of the Raisin Co., who says that he would discourage further planting because he believes that any larger crop could not be marketed. He says that no raisins are being exported now on account of unsettled commerce on the seas, but that only about 10 per cent of the 1915 crop was exported.

With the biggest, cleanest crop of exceptionally well-matured raisins now on the trays (mid-September), with very little mildew or disease of vines in the State compared with what there might be, and with an

assured market for all that is produced, at very profitable prices cash to the growers on delivery, the great majority of growers are looking up with greater hopefulness than ever before.

Great numbers of raisin growers are also peach growers; for Fresno county is not only the greatest raisin county in the State, but also the greatest producer of peaches. Now their peach crops, which were very fair in quantity and fine in quality, are assured of a market at prices undreamed of by most of them a year ago. Most of the raisin growers also have Malaga vineyards. They have produced one of the finest crops ever, which is selling in the East at over \$1 a crate net to the grower in many instances.

The greatest trouble of raisin growers has been to get trays. Many are begging for a chance to buy paper trays at \$9 per thousand. All the wooden trays are in use. Everybody not picking grapes is making all the new wooden trays he can get material and time for.

MAGNIFYING GLASS SAFE.

[Written for Pacific Rural Press.]

Most progressive citrus growers are getting the habit of carrying a pocket magnifying glass. With it they can detect the earliest red spiders—can with more certainty tell whether scales are alive or dead and thus estimate the percentage of kill by spraying or fumigation. J. C. Perry of East Highlands carries a good one. To reduce chance of loss, he has made a little cloth bag for it. A string to the inside of the bag secures the glass. With the bag, the glass is less likely to drop out of his pocket; if it does drop among the cover crop, it is much easier found; if some one else finds the glass, it may be returned, for Mr. Perry's address is on the bag in ink.

SWEET CLOVER FOR ORANGE COVER CROP.

[Written for Pacific Rural Press.]

Fine germination of sweet clover seed in a 13-year orange orchard has been obtained for four years by J. W.

Cassada of San Bernardino county. After preparing the seed bed early in September, he irrigated the 10 acres about Sept. 1, 1914, through four furrows per row, leveled the furrows with a four-shovel cultivator adjusted to fit them, broadcasted by hand 10 pounds of seed per acre, cultivated it in with a 9-shovel cultivator working a strip about 5 feet wide, cross cultivated it, then furrowed for irrigation. It came up two weeks later, first in the moist spots.

There was no fall rain in 1914, but 30 inches of irrigation were applied to the 10 acres for 48 hours Oct. 11, Nov. 11, and Dec. 11. Something, probably hot weather, thinks Mr. Cassada, prevented much of the crop from developing in 1914, though during the two preceding seasons fine crops had grown. About Feb. 1 it was 15 to 18 inches high when plowed under.

Mr. Cassada writes: "I sowed sweet clover a month later last fall, on account of hot weather, and got a fine stand. Most of the ranchers around here sowed some."

Los Angeles County Fruit, 1915-16.

[Written for Pacific Rural Press by Deputy Horticultural Commissioner B. R. Jones, Los Angeles.]

Replying to yours of September 8th, while our figures are not strictly accurate, which is quite a difficult thing to attain, we believe we have it more nearly than anyone else in the county, and are not far wrong.

The following acreage has been set out the past season: Oranges, 3,536; lemons, 1,145; peaches, 550; apricots, 400; pears, 1,250; apples, 560; walnuts, 4,000. As you will no doubt note, these plantings are not nearly as large as they have been in some former years. The low ebb of the real estate market has had something to do with this, as a great many tracts were set out formerly with the idea of bring them to an age when the grove would be considered well established, and selling them to parties who wish to make homes upon them; this more especially, of course, applying to the citrus fruits and walnuts, also pears in the northern part of the county, where excellent returns are being obtained from that fruit.

Citrus.—On the whole we have had a very good fruit year. Our citrus returns have probably been the largest of any year with the possible exception of 1910. Roughly speaking the citrus shipments have reached very close to 50,000 cars for the State, and our county has produced about one-fourth of them. The average price for oranges and lemons was \$2.28 per box, f. o. b.

Los Angeles.

The Exchange has handled a much larger proportion of the fruit produced in the State than ever before; and in our county they handle probably a larger proportion than in any other. The Fruit Growers' Supply Company, connected with the Exchange, through its ability to furnish supplies of various kinds to the growers at a lower rate, to the amount of some \$4,000,000, has been an efficient factor in bringing the growers into the Exchange.

The walnut crop is considerably lighter than last year, perhaps 70 per cent of last year's crop. The price promises to be considerably higher, and possibly the receipts will be as much as for last year's crop, which was a bumper one.

Pears.—Our comparatively small acreage of pear orchards has for a number of years been very encouraging to growers, as the fruit produced has proved excellent as to keeping qualities; and was all taken by the fresh fruit markets, practically none of it going into canneries. Some little trouble was this year experienced with the blight, but the crop is perhaps 80 per cent of an average, and they are not feeling discouraged.

Other Fruits.—Apples have been a good crop, and prices about an average. The stone fruits, however, have been light, particularly apri-

cots and plums. However, our acreage is comparatively small of these fruits, and they do not cut a great figure in the financial returns to the growers. Prunes and grapes are of very little importance in the county, but the latter were a good crop where grown. Berries of all kinds yielded well, and prices were about an average.

Following is a statement of the number of trees and yield of the different fruits for 1915, as results have not been compiled this year, but it will give you a fair idea of the county's production:

Oranges:	No. of Trees	Total Crop
Navels	1,574,966	3,047,169 boxes
Valencias	1,322,230	1,336,473 boxes
Seedlings, etc.	231,758	281,111 boxes
Lemons	812,317	752,229 boxes
Berries (acres)	5,248 1/2	404,189 crates
Apples	202,024	337,176 boxes
Apricots	193,620	12,765 tons
Grapes	529,016	13,613 tons
Olives	162,524	2,070 tons
Peaches	681,955	22,819 tons
Pears	279,451	1,233 tons
Plums	109,672	145,522 boxes
Walnuts	386,848	99,521 sacks
Strawberries	2,520	1,768,620 crates

FRUIT FOR HILL LAND.

To the Editor: I have ten acres in fruit in our foothill country. The ground lacks humus very much, so I am thinking of planting a cover crop of melilotus. Would you advise mixing slaked lime with the seed? We blast for every tree on account of hardpan. Would you advise prunes or apricots in that kind of land?—V. E. K., Sacramento.

If your hill land shows an acid reaction when tested with litmus paper (which can be secured at any drug store) we would advise slaked lime, or ground limestone, which will be all right planted with the seed or before or after, provided you get it well into the soil where it is to do its work.

Since you have hardpan, the chances are there are some sour spots. Apricots do well on your kind of land, but we do not know of any extensive planting of prunes on such, though the red hills of Flacer county are the greatest plum-producing section in the State. Plums and prunes are the same, except that some varieties of sweet plums which have skins allowing them to dry without fermentation, are called prunes.

In blasting, do not leave a hole which will fill with the winter rains and not be drained out, for that would be worse than not blasting at all.

IMPROVED SEED BED.

[Written for Pacific Rural Press.]

"I have just finished plowing 1100 acres, and gave it such a plowing as it never had before," wrote G. W. Hamilton of Stanislaus county last April.

He pulled 120 inches of plows with a 75-35 tractor, turning the dirt 9 to 12 inches deep. He averaged 45 acres a day, working day and night with but two stops of half a day each.

Then he hooked onto three eight-foot double disks with 24 feet of harrows behind them, and the tractor walked off with them over the soft ground.

The plowing tore up the plowpan, while the prompt and thorough cultivation prepared a seed bed that will show results in old-time crops.

By a vote of about 8 to 1 the Waterford Irrigation district has voted bonds in the sum of \$465,000 for the construction work of the new district and to pay the Modesto district for water from its canals.

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Thrips-Scar Peaches and Quinces.

[Written by Edw. O. Amundsen, Placer County Farm Adviser.]

In a recent issue of the Pacific Rural Press I noted an inquiry from Arroyo Grande relative to scarred peaches. In your reply you said that the scare were probably due to the attack of an insect.

If the trouble is of the same nature as that of the peaches and quinces which I am sending you, possibly the following observations may be of some value:

In orchards which had been badly affected last year I observed the adult winged thrips busily traveling in and out of the buds early in the spring. Very soon the young thrips in large numbers were found in the heavy bloom of the young fruit. Where the thrips were found small scare could be seen here and there under the bloom even when the young peach was not bigger than a pea. Later these small spots make big scars. The thrips feed by rasping through the skin and then sucking the plant juice. Early blooming quinces as well as peaches are affected.

One very important fact has been brought out all through the season. Weeds and thrips always go hand in hand. That is, weeds through the summer season. Orchards cleanly cultivated during the summer are not affected. In many instances the fruit is scarred on the trees along weedy fence rows or ditches while the other parts are free of weeds and produce perfect fruit.

The thrips very evidently must have certain weeds upon which to feed during the summer and fall; they do not travel very far.

Live thrips of various ages may be found at the present time in affected orchards on "wild lettuce," Johnson grass, bur clover, alfalfa and other plants.

Some of the young thrips found at the present time have reddish spots which were not observed on those found early in the spring. This may be a characteristic due to the climatic conditions or they may be of another species. The adults, however, are the same found earlier—almost black in color.

This is becoming a more serious problem in Placer county each year. The canneries condemn large quantities of clings on this account. Last year some Levi Cling orchards were total losses—not a peach free from

scars. Judging by observations since I arrived in the county (Aug. 18, 1915) the surest method of control would be to have absolutely clean cultivation during the summer. However, I would not guarantee the results until after thorough demonstration which would require at least another year.

Even if the weeds were eradicated now some of the adult thrips might live and deposit eggs in the blossoms next spring. It may be possible to control with a spray and this will be tested thoroughly.

[Mr. Amundsen sends specimens of the thrips' work he describes. The fruit is not only pitted and scarred but deformed, contorted and, in the case of the quince, hardly recognizable as that fruit.—Editors.]

POINTS ON VINE PLANTING.

To the Editor: Part of a block of Emperor and Malaga grapes in Fresno county was not planted last spring, the hot weather coming before all the work was finished. The vines which were not planted were heeled in and irrigated. The plan was to plant as soon as the rains come this year. What of these vines set this time of year? Will the roots start and grow the coming winter or will there be danger of the roots rotting? Will the plants that have been heeled in this summer do as well as vines planted next spring? What is the average age of grape vines on own root before phylloxera make the vines unprofitable?—D. S., Brockton, Mass.

[Grape vines are planted in California from the time the leaves fall in the late autumn to the start of new foliage in the spring. The planting therefore depends not upon any particular date but upon the dormant condition of the vine and a condition of adequate but not excessive moisture in the soil. At this time the vine is not yet dormant and the soil is still dry (except where irrigated) and there is no planting of vines now. When the vine loses its leaves and the soil is properly moist, transplanting can begin and there will be a start of new rootlets before the buds swell and no rotting of roots. But too much cold water in the soil might cause such rotting, if the soil did not drain well, and it is therefore the practice to plant out, in districts of considerable rain, after the heaviest rains are over and

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the soil begins to warm up a little, which is in February—though in districts of small rainfall, January is also a good month and December may be used to some extent. In all these cases, the vine does not start top growth until heat is adequate in March or April, according to the local conditions.

Vines that have been heeled in and decently cared for will grow as well as those planted out the previous year, but will usually be a little behind them in growth and bearing for a year or two. If, however, the planted-out vines have been neglected and the heeled-in vines well cared for, there will be little difference—in fact the latter may be better in the second year. Everything depends on conditions and treatment rather than upon a season's difference in position.

None can tell the time required by the phylloxera to ruin a vine. It depends upon the character of the soil, the relative resistance of different vinifera varieties and the treatment given the vineyard. It might vary from five to twenty years.]

NEVADA STATE FAIR.

The State Fair held at Fallon, Nevada, the week of Sept. 11th, was quite a success, though the separation into different fields of the agricultural exhibits, the race track and the love stock, was not to the best interests of exhibitors. In the agricultural pavilion there were shown fine samples of apples, pears, grapes, and plums, raised by C. G. Swingle of Fallon. A big feature was that of the boys' and girls' club work in garden and animal husbandry lines. In live stock the University of Nevada showed Hereford heifers that commanded the admiration of Nevada stock men. Jos. Wilson, Jr., of Mason won 11 out of 12 firsts in the Berkshire class with his 700-lb. boar, Robinhood Laurel 10th, also capturing the grand championship. Out of the State exhibitors were: N. H. Locke Co., Jerseys; J. E. Thorp, Jerseys and Durocs; J. L. Gish, Berkshires.

FRUIT JOTTINGS.

Turlock district has a bumper crop of Thompson Seedless grapes, the rain doing very little damage to them.

This has been a good season for raisin grapes in the vicinity of Yuba City. A good quality of grape has been grown, and prices have been satisfactory.

The Farmers' Short Courses start at the University Farm, Davis, Oct. 2, and continue until Nov. 24. Special work is offered in general farming, horticulture, poultry, and dairying. A special course in tractors is added this year.

Lemon shipments out of California to Eastern markets have been especially heavy this year, and will probably continue so as a recent report from Palermo, Italy, states that an unprecedented heat wave struck the growing crop the 1st of July, destroying close to one-half the summer crop remaining on the trees.

State Market Director Weinstock, in an address to Lindsay and Porterville olive growers the other day, said: "The olive industry today is almost on the ragged edge, despite the fact that the industry has an absolute monopoly. Nowhere in the United States can olives be grown but in this state. It is a product that people want, if they only knew about it."

There is difficulty in securing supplies of cyanide of sodium for fumigation in the citrus groves. Prior to the war the entire output was produced by a German concern with a branch in this country. The American plant was shut down, the personnel and machinery going to the Fatherland when the conflict opened. Two American plants were established as soon as the field was cleared, and these promise that there will be no serious shortage when the labor market eases up.

A new fruit merger has been concluded by F. B. Anderson of the Bank of California, San Francisco. It combines the Alaska Packers' Association, the J. K. Armsby Company, the Central California Canneries and Griffin and Skelly. The company is to be known as the California Packing Corporation, and is to be capitalized by an authorized issue of \$10,000,000 of 7 per cent

cumulative, preferred stock, callable at 115, and 500,000 shares of common stock of no par value.

From 6,000 to 10,000 acres of otherwise rich soil on the Hawaiian Islands are so heavily impregnated with manganese dioxide, which renders insoluble the abundant iron in the soil, as to be almost worthless for pineapple growing. The fruit forms, but does not develop. Experiments have shown that wetting the leaves of the plants with a solution of copperas (sulphate of iron) caused the yellow, droopy pine to promptly take on new life. It turned green, and matured well-developed, well-flavored fruit.

Chief Deputy G. P. Weldon of the State Horticultural Commission announces that the embargo on California and Arizona citrus fruit shipments to Australia has been raised. The original quarantine, placed last February, affected every State in

the Union. The exemption now of California and Arizona means much to the citrus growers of our own State, as we were building up a nice little trade in this line with the Antipodes. Canker worm, from which California citrus fruits are free, is still troublesome in Florida.

The Federal seed importation act (which prohibits the importation into the U. S. of certain seeds when they are adulterated, or contain 3 per cent or more of weed seeds, or when clover or alfalfa seed contains approximately more than 90 seeds of dodder per pound) was amended August 11, 1916, by including the seed of rye grass and vetch and by prohibiting the importation of seeds which contain less than 65 per cent of pure live seeds, except that the seed of Kentucky blue grass and of Canada blue grass may be imported when it contains 50 per cent or more of live pure seed.

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Now is the time for you to think about planting—to get your mind made up as to the varieties you will set out the coming season. And, of equal importance with the selection of varieties is the selection of your nurseryman. "George C. Roeding" and "Fancher Creek Nurseries" are names synonymous with quality. If you order trees, vines, shrubs or plants from us you may be absolutely sure of their being TRUE TO NAME, strong and healthy—and that they will be carefully packed so as to reach you in A-No. 1 condition.

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Growing Salinas Burbanks.

[Written for Pacific Rural Press.]

Salinas Burbanks are the potato best known and most eagerly sought after by the wholesale and retail trade in the northern markets of California, chiefly because their qualities, in keeping, appearance and eating, are well established in the consumer's mind, as being first class.

It is no trade secret that only a small percentage of the potatoes marketed as Salinas Burbanks have actually been grown there, neither are they entitled to the name because the seed from which they are grown originated in the Salinas district of Monterey county. It is simply one of those peculiar circumstances where substitution is practiced that no law seems able to overcome.

How this reputation has been sustained in spite of trade name manipulation and how growers of Salinas Burbanks now stand a good chance of cashing in for real money on their reputation, through the channel of certified seed growing, is told us by one of the largest and most successful growers in the Salinas district. At his request, we shall know him as Salinas in this article, though that is not of course his real name.

Trade Marked.—The experience of our Mr. Salinas as a spud raiser dates back a good many years, but as a seller of trade-marked goods, about 14 years. In this he has been conspicuous for during those years all of his potatoes have been sold under labels, "firsts" being designated as the Blue String brand and "seconds" as the Red String brand. The names of the brands originated with the idea of tying sacks containing the best spuds with a blue string and the next best with red string. This brand has been so well established in the city of San Francisco, that the most select trade eagerly picks up the supply at a premium over everything else in the spud market.

While the consumer knows but two brands on this ranch there are three, the third one being the culls and small potatoes which are known as "cow feed," their use being what the name implies.

Soil a Factor.—Grading, while an important factor, gives way to soil conditions and cultural practices when the success of this man is analyzed, for in his own words, "the sandy loam soil of the Salinas valley lowlands produce a tuber with a golden yellow color, peculiar to itself. Also, no matter what the nature of the seed, the potato grown here has a tendency to become perfect in size, shape and appearance."

All of the soil does not have these peculiar adaptations, for on the ranch in question only 100 acres is considered perfect potato land. And on account of diseases and pests this is only planted to potatoes once in two years. Immunization from potato moth and other pests which live on either the tuber or the vine, is accomplished by planting grain every other year and sometimes two years in succession when the ground is particularly badly infected.

Soil Preparation.—Preparation for the year's crop is commenced in mid-winter by a shallow plowing of

the soil and then followed by a deeper plowing, for moisture conservation is essential where irrigation is not practiced.

Planting is customary the last of April, or through May, in rows 38 inches apart and hills about 17 inches in the row. Northern-grown seed has had the preference in the past, smaller tubers being liked for this purpose because vine growth starts sooner than when larger seed is used and quick growth is a desirable quality as the matured potato in such cases is a better keeper.

Certified Inspection.—Because certified seed is being grown this year on the entire 100 acres, under State supervision, three inspections have been necessary by State officials, but in the past cultivation was the only requirement from time of planting till digging time, which varies from September 15 to November. In case the tuber moth is bothering the entire crop is dug as hurriedly as possible and sold immediately. At other times, especially if the weather is cool, the crop is sometimes stored and cured in piles.

Especially has this been the case with seed for the succeeding year's acreage, but the practice is considered inadvisable as they lose their fertility and do not start growth so quickly when planted.

This year's planting was with selected seed from Oregon, the hope being that acclimatization and improvement may be accomplished with it in the Salinas Valley, thus capitalizing the name "Salinas Burbanks" for propagation as well as commercial reasons.

BUR CLOVER AND MELILOTUS.

[Written for Pacific Rural Press.]

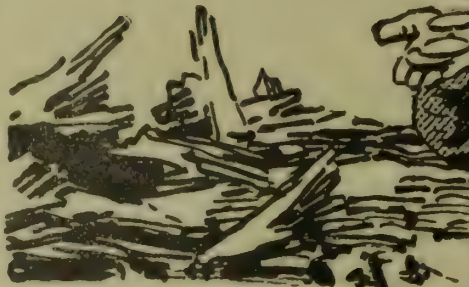
J. A. Harliss of Santa Clara county will mix bur clover with melilotus seed for his 5-acre prune and apricot orchard. Last fall before the rains, he broadcasted, without irrigation, one-half acre of melilotus alone as an experiment, and also some in the back of the orchard where bur clover volunteers. The half-acre came up a beautiful stand, but when it had scarce gotten its third leaf, an unusually severe frost melted it entirely.

That back in the orchard grew up with weeds and bur clover until it was waist high.

"My neighbor, who irrigated earlier in the fall and sowed seed as soon as he could cultivate the soil, had a fair crop of melilotus mixed with a good amount of bur clover," says Mr. Harliss.

About Oct. 1, 1914, Mr. Harliss had inoculated purple vetch seed in water which was run through soil obtained from a field where vetch had grown well before. After drying the seed, he mixed 25 pounds of this with 15 pounds of rye for each acre. The trees were about 20 years old and 18 feet apart. The orchard was checked for irrigation; but in spring, the checks interfered so seriously with plowing that this will not be done again. When it came up, he thought there wouldn't be much crop, but it was waist high when he

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"They save work and money and give results when all other means of removing stumps have failed," writes Robert Chabot, Moclips, Wash.

"Better than any other," says A. E. Adkins, Woodburn, Ore.

"Most satisfactory," says John Zurr, Santa Rosa, Cal.

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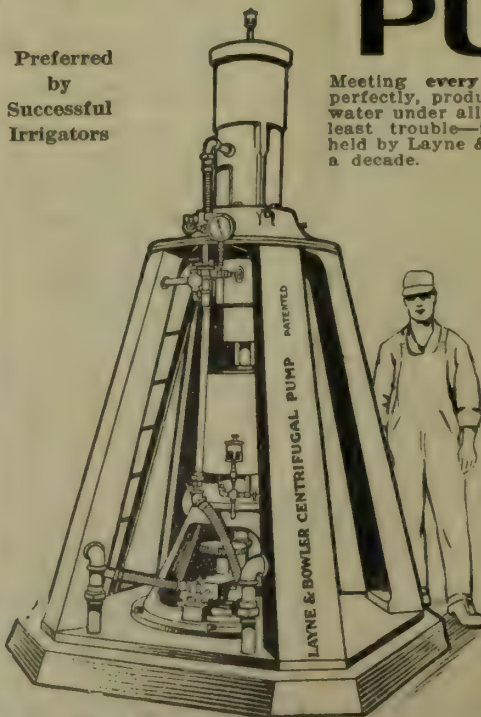
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pruned in January.

He couldn't get a man to plow when he wished and the rye grew above his head, with vetch still longer—great ropes of it. Mr. Harliss is 6 feet 1 inch tall; and pictures

he has of that crop show him and his wife submerged in it. Some that was left grew 8 feet tall into the trees. Purple vetch may again become available, but none can be had this year.

Transferring Bees.

To the Editor: How do you transfer bees from a box hive to a movable frame hive?—E. W. C., Paterson.

[Answered by J. C. Epperson of the A. I. Root Co., San Francisco.]

We will assume that your hive or hives, having been received in the flat, are put together and painted, and contain frames of wired foundation ready for the bees. Light your smoker and put on your bee-veil. Move the old hive back four or five feet, and put the new hive in its place. Prepare a small covered hiving box about 8 inches deep with no bottom, that will just cover (not slip over) the bottom of the box hive. Turn the box hive upside down; set the hiving-box over it, and then drum of the sides of the hive with a couple of sticks until about two-thirds of the bees pass up into the hiving box. Gently lift off the box containing the bees, and dump it in front of the entrance of the new hive. Make sure that the queen is among them, by watching for her as she passes with the rest into the entrance. If you do not discover her, look inside the hive. If you still fail to find her, drum out the bees from the old hive again until you do get her, for, to make the plan a success, she must be in the new hive.

Return to the box hive, turn it right side up and set it down a couple of feet back of the new one, with its entrance turned at right

angles. It still retains about one-third of the original colony, the combs, and all the brood. Allow the old hive to stand at least 21 days, at the end of which time the brood will be hatched except a little drone brood which will be of no value. Turn the hive upside down, and drum the bees out again into the hiving-box. Next put an entrance guard of perforated zinc over the entrance of the new hive. Smoke the bees of the hive and then those in the hiving-box, after which dump it in front of the entrance of the new hive, as before. The smoking is to prevent fighting on the part of the bees at the second drive, and the entrance-guard is to catch the queen or queens that have been raised in the meantime in the old hive. These, one or two, if virgins, should be caught on the perforated metal and given to some queenless stocks. If the old queen in the new hive is a valuable one she should be caged at the time of making the second drive. If neither queen (the one in the old hive or the one in the new one) is valuable, the perforated zinc need not be used.

ALFALFA FOR SEED.

To the Editor: In a recent issue of the Pacific Rural Press I read of J. M. Bomberger plowing out a part of his alfalfa for the purpose of raising seed. I thought it might be of

interest to you to know that some of the farmers of Stanislaus county have been raising seed for a number of years.

The last four falls I have hulled for 30 to 35 growers each fall and some of them get very good returns. Thin alfalfa with short, woody stock generally gives the best yields. Thick fine stems do not seed because the sun cannot reach the blossoms only on the tips of the stems.

The third cutting is generally left for seed, and should not be irrigated, as that causes too heavy a growth of hay. Damp or sub-irrigated land generally does not seed for the same reason.

I have looked over Mr. Bomberger's field and think his plan a good one. But his ground is producing too heavy a growth. He seems to have too much moisture.

Inspected Seed.—Some of the farmers have their seed inspected before cutting, by the County Horticultural Commissioner. If he finds their fields clean from all noxious weeds he tags the sacks "Inspected Seed." That insures the buyer from getting dodder, bad grasses, etc. Local seed has cut the price to the user by cutting the middle man's profits, and may account for some

of the dealers knocking home-grown seed. But much of the seed is A1 and the business is growing. Hulling season commences the last of September.

O. E. Lambert.

Modesto.

KILLING SNAILS AND SLUGS.

[Written for Pacific Rural Press.]

Lime often has no effect on snails. This is because it is not put on them. It is sprinkled on the ground in daytime.

The snails work at night. Geo. N. Tyler of Santa Clara county usually recommends a couple of ducks around the yard. A friend of his says to sprinkle hydrated lime on the snails about 9 p. m. when they are all out and busy. Mr. Tyler says the lime will not hurt the tenderest plants directly; though it might do too much injury to stems by setting free too much ammonia from nitrogenous fertilizers, if applied too much to soil so fertilized and confined in a house.

On board the S. S. Congress which was burned two miles off Coos Bay bar, Marshfield, Ore., was a Bates Steel Mule, being shipped to the interior of Washington. This was one of four Steel Mules shipped to the northern State during that week.



Pull big stumps by hand

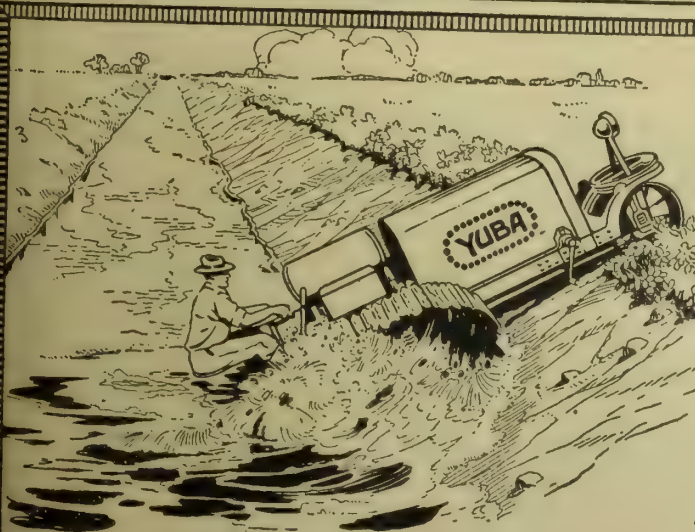
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Gentlemen: Kindly send me a copy of your booklet, "The Yuba Ball Tread Tractor."

Name	Check Main Crop Raised
P. O. Box	Fruit..... Rice.....
Town	Grapes..... Alfalfa.....
State	Grain..... Hay.....
Size of Farm	Acres..... Hops.....

General Agricultural Review.

FIELD CROPS.

Lima bean threshing is in full blast in Ventura county.

Growers of beans are expecting to receive more than \$7,500,000 for a crop estimated at 1,800,000 eighty-pound bags.

Twelve square miles of beets have been contracted for by the Pingree Sugar Company at Corcoran for the coming season.

Indications are that Yolo county will have an average output of 420,000 sacks of rice. This is an average of thirty sacks to the acre.

The chile pepper crop of the present season at Garden Grove will sell for about \$300,000 is the estimate of one of the largest growers of this section.

Two hundred acres of Hollister land has been sold by Palmer Hewitt to the C. C. Morse Seed Co. for \$250 an acre or \$50,000 for the 200-acre tract.

E. E. Dunning's lima beans in Ventura county, irrigated against his orders in June, will have to be cut green about the second week in October. He lives on the level, open to ocean fogs.

Rice men of Yolo county have decided to combine with the Pacific Rice Growers' Association for the marketing of their crops instead of selling independently of the bigger organization, as recently proposed.

California produces what is technically called crystallized rice, according to J. H. Stephens, the new president of the Pacific Rice Growers' Association. This is superior to that grown in most Southern States.

The 1916 contracts for rice grown in the Sacramento valley were completed this week. The Pacific Rice Growers' Association stated a large field force will interview the rice growers and close contracts for their crops.

The entire output of beet pulp from the San Joaquin Valley Sugar company factory in Visalia was sold to the Western Meat company of San Francisco which will feed it to cattle purchased and fed near the sugar factory.

The warden of San Quentin penitentiary sends information to local rice growers that he will accept orders for the standard size grain bag at the price of 10 cents each, and that orders can be filled and shipments made immediately.

The crop report of the United States Department of Agriculture says that California is second in onion production. The estimated yield for 1916 is 1,914,000 bushels, second only to New York with a yield of over 2,000,000 bushels.

E. C. Hittue, special beet sugar investigator for the United States Department of Agriculture, has arrived in Imperial Valley to outline a series of tests to determine the proper time of planting and to try sugar beets on different types of soil.

Twenty-seven thousand bags is a conservative estimate of the amount of mustard grain shipped from Lompoc this season. As much as nine cents a pound has been paid by San Francisco buyers, though 7½ cents is considered a fair average for the crop.

The California Lima Bean Growers' Association met Sept. 5, and issued a new scale of prices, to take effect immediately: \$5.30 for November-December shipment; \$5.37½ for prompt shipment and \$5.42½ for immediate shipment. The average price last year for the grower was \$4.32.

Rice growers in the Sacramento valley say that the blackbird pest costs them on the average of \$10 an acre a year to protect their fields. They favor removing all legal pro-

tection from the birds. This would permit their sale in the market, and experience with all game has been that whenever it is open to the market-hunter it is soon exterminated.

Hop prices are soaring skywards. Sacramento hops are selling at 13c per pound, against 8 and 9 cents a week ago. Santa Rosa hops have jumped to 16 cents, while New York State hops have gone to 43 cents per pound because of the close proximity of the market and the extra quality of the crop. The California hop crop this year will be very large, something like 114,000 bales.

Word from Hanford says that hunters and ranchers are divided as to whether the ducks are actually damaging the rice crops. Some ranchers state that ducks help rather than hurt the rice growers. It is pointed out that the ducks do not touch rice unless it has been knocked down, and the ducks themselves do not knock the rice down. As the knocked-down rice would result in a volunteer crop the following year, which is what the grower does not want, the ducks should be a help in the matter.

Geo. Barrett of Yerrington, Nev., has a new potato propagated from the crossing of Netter Gem and Early Rose varieties. It is now in its fifth year of cultivation, and each year is making it a finer species. It is a pretty specimen, being very clear with very little display of eyes and about three inches long. The main points claimed for it are that it is a good eater, fine keeper, and is early to mature. The latter is a strong point as frosts often get the later potatoes in Nevada. Mr. Barrett claims to be getting from 12 to 14 bushels to the acre.

DECIDUOUS.

Bartlett pears are being harvested in Lake county, and 1000 tons are being dried.

A. Peterson, a rancher and orchardist of Tulare, says the crop of French prunes in Tulare county is the heaviest and best in years.

Frank N. Meyer, agricultural expert for the U. S. Government, will go to southern China to seek a pear immune to the blight, which is destroying orchards in many parts of the United States.

The prune crop of France is almost a failure, according to cable advices received in San Francisco recently. The French crop is normally from 25,000 to 30,000 tons. This year it is placed at about 1,100 tons.

The Pomona Valley Canning Company is just winding up a summer run on deciduous fruits which amounts to 1,400,000 quarts of peaches and 350,000 quarts of apricots or 1,750,000 quarts total, says an exchange.

Exceptional cases of prune trees blossoming in September are found in several instances around Chico. The blooming is attributed by a local fruit grower to the fact that they had been attacked early in the season by the red spider. The grower said that the late blooming would probably affect next year's crop.

CITRUS, NUTS, SEMI-TROPICAL.

The California Mutual Packing company is to locate in the Riverside district, and erect a packing house.

There is a movement on foot to build a citrus packing house at Richgrove this season, to handle the winter crop.

Orange packing will be under way in the Oroville district by November 1st, says F. W. Mason of the Stewart Fruit Company.

Secretary Doolen, of the Santa Barbara Walnut Growers' association, recently sent \$18,000 worth of

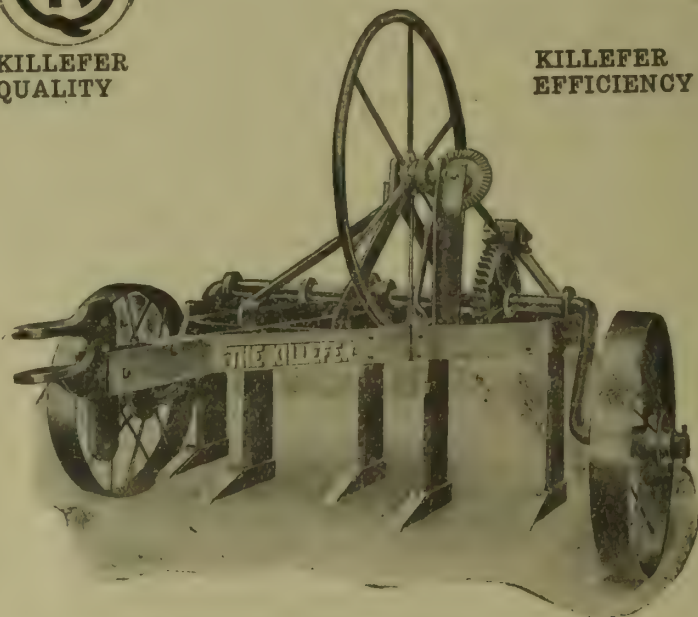
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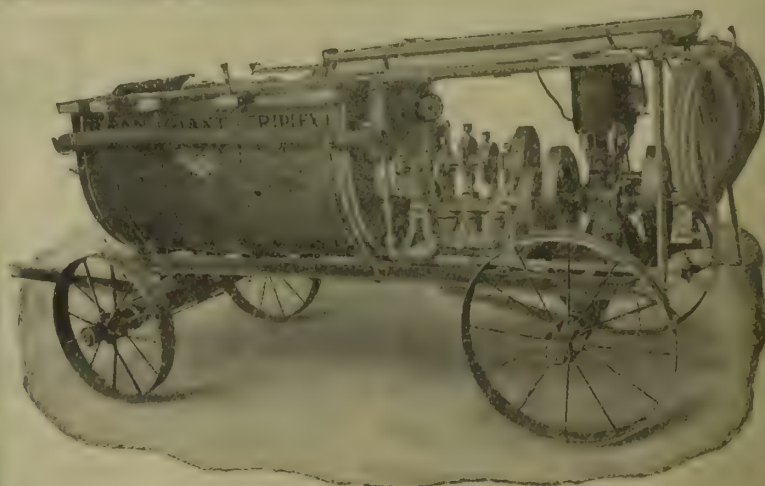
Every report which we have been able to obtain of subsoil work done during this past fall, has shown extra large gains in crop returns. Our offer of last year still holds good—to give a subsoil plow to any rancher having 500 or more acres for one-half of the increase in crops, for one season only. If we have nerve enough to risk \$300.00 to \$600.00 on this work, what is there in it for you?

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Hand Pumps, Barrel Pumps, Spray Accessories, etc., and select the equipment you will need. NOW—is the time to do it.

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or vicinity.

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checks to 175 growers as their
share of the final settlement for last
year's crop.

The California Ripe Olive Co.,
which has heretofore maintained its
offices in San Francisco, will move
to Oroville by Oct. 1.

Louis Arcand, a young farmer of
the Arbuckle section, believes he
has originated a new variety of al-
mond. The new nut resembles the
the Ne Plus Ultra, but has a larger
and heavier kernel, and is not
double-kerneled.

It is surmised that walnut meats
this year will command about 16
cents per pound, more or less. The
French embargo on shelled nuts
makes an actual famine on walnut
meats, as France supplied over four-
teen million pounds last season,
and California only about one mil-
lion pounds.

Most of the crop of the Durham
Almond Growers' association sold at
a net price to the association of
18½ cents for the Nonpareils.
The Peerless variety sold for 15½
cents net. The IXL went at 16½,
the Ne Plus at 15½, the Drakes at
14½, and Texas at 14. The crop
was approximately a hundred tons.

George Boelman of Gridley Colony
No. 5, has several trees seven or
eight years of age on which the nuts
are so thick that they weigh down
the limbs and the trees have to be
propped with poles. Many peach
orchards in that section planted ten
years ago, with a walnut tree at
every third place in every third row,
are now practically walnut or-
chards.

GRAPES.

The raisin crop in the vicinity of
Marysville is below that of last year.

H. W. Wilson of Kerman got 72
trays of Thompson grapes from 69
three-year vines.

B. H. Fisher of Kerman picked
117 pounds Thompsons from one
vine four years old.

Sixty-two carloads of Tokays left
Lodi Sept. 14 for the Eastern mar-
ket, making it the banner shipment
of the season.

Raisin shipments from California
for August amounted to 14,186 tons,
according to the California Asso-
ciated Raisin Company.

"After the frost, I could have sold
this corner of Thompson vines for a
song last spring, but now it is going
½ tray per vine," says C. K. Hays
of Kerman.

California grapes will find strong
competition in foreign grapes dur-
ing the coming week when the first
shipment of Almeria grapes, consist-
ing of 9800 kegs, is due to arrive
in New York.

More than \$40,000 gross was
realized by the Japanese tenants
on the Palm ranch, near Wasco,
from the sale of the Seedless and
Tokay table grapes and the raisin
crop this year.

The recent rainstorm did some
small damage to the drying raisin
crop in the vicinity of Fresno and
to the table grape crop about Stock-
ton—notwithstanding which the
rain was welcome on all hands.

A refund of \$200,000 to the
wineries of the Fresno district will
be made by the government, follow-
ing the passage of the new emer-
gency revenue bill by Congress, ac-
cording to the Fresno internal reve-
nue office.

Tokay shipments from California
to the East this season have all met
with excellent sales. First-crop
fruit is being fast cleaned up, and
the second crop is maturing rapidly
and promises to be superior to
average second-crop fruit.

MISCELLANEOUS.

Lima bean spraying for aphids may
become general among the growers
of Santa Barbara Co. to insure
heavier and earlier yields, accord-
ing to C. W. Beers, County Horticul-
tural Commissioner. Sixty acres of
beans thus sprayed experimentally
demonstrated that the practice is
highly remunerative.

The Delano Farm Center has

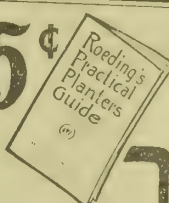
taken steps toward the organization
of a farm loan association to benefit
from the farm loan bill.

The farm advisory movement was
started in the West four years ago,
the first farm bureau with a farm
adviser having been established in
California. Since that time fifteen
counties have organized farm bu-
reaus and engaged farm advisers.

The British "tanks," the armored
motor cars used in recent assaults
on German trenches in northern
France so successfully as to attract
world-wide attention, were built for
the most part, it is said, in Peoria,
Ill. They are simply heavily ar-
mored Caterpillar tractors.

Representatives of Miller and Lux
are conferring in San Francisco
with a committee of farmers of the
Madera county plains over the pro-
ject to irrigate more than 400,000
acres of land by a system of storage
dams supplied by the San Joaquin
river. To accomplish all this, many
millions of dollars will be needed

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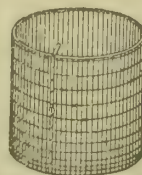
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Laws Regarding Agricultural Fences.

[Written for Pacific Rural Press.]

Our laws regarding fences have changed greatly since 1850, when the first California Legislature drew up general laws. A landowner in early days paid little attention to fences, since he was not obliged by law, customs, or conditions to so divide his cattle range, etc., against that of his neighbor. But soon agriculture was taken up in earnest, though the gold fever was still abroad, and by laws passed by the legislature of 1855-60 and later, the division of properties by actual fences, instead of merely mounds at the corners, etc., was put on a more definite legal basis.

Strange to say, the fence laws are not identical in all counties of California, since the legislatures in older days often picked out particular counties to which only this or that law should apply. This method of law-making is not allowable now, but not all these older acts have been repealed. However, in general, and always bearing in mind that an attorney's advice should be sought in any such legal matters, we may state a few points concerning the agricultural fence as we have come across it in the Codes and court interpretations of the law of California.

(1) A legal agricultural fence is one of such substantial construction that it "will turn cattle of reasonably gentle disposition."

(2) To be strictly within the law, a fence should be at least 4 ft. high and 1 foot thick at the top; worm fences 5 feet high; and post, board or picket 4½ feet high. Those of wire must be equal in strength to those above.

(3) One who maliciously burns hay, grass, standing grain, fences, etc., of another is liable to a punishment of a 1 to 10 year penitentiary sentence.

(4) One who wilfully "leaves the gate open" or tears down or otherwise destroys the fence of another without permission, is guilty of a misdemeanor (fine not exceeding \$500, county jail sentence not exceeding 6 months, or both).

(5) No fence may be built over 10 feet in height with the intent of annoying the adjoining owner.

(6) By statute of 1915, railroad corporations in California must fence both sides of their track or be liable for any damage done to animals that may be struck by passing trains, etc., thereupon; crossings must also be maintained wherever reasonably necessary.

(7) A partition fence is usually built on the boundary line between two farms with the cost of erection borne jointly by the two property owners. One cannot compel the adjoining owner to pay his share, unless the fence is of material benefit to him. When, however, he does come to use the fence, that you have erected at your expense, to help enclose part of his property, he may be compelled to pay one-half of the construction cost of that length of the partition fence that is now of use to him. To remove a partition fence that is owned jointly, it is necessary to obtain the consent of the adjoining owner.

(8) If one encloses part of his neighbor's land and openly takes pos-

session and pays the taxes upon said part for 5 years, he may claim ownership of the land by "the law of adverse possession." But if the division fence enclose said portion of the neighbor's land unknown to the owner, such possession would not be "open."

(9) Barbed wire fences.—Since this type of fence has come into general favor, the law treats it as no more dangerous in itself than one of wood, etc. If, however, it is left in such condition that it is almost a trap, as when but one strand is left, and that near the ground, the owner is liable for any damages that other people's cattle, etc., may sustain. And it is often held that in case of barb-wire fences left in such condition, the owner is likewise liable if the fence be entirely upon his own land and the cattle trespassing thereon.

Though some states require a top rail of wood, a legal barb-wire fence in California is one with two or more strands of wire tightly stretched between posts and at such a height as to turn stock.

(10) Fruit trees growing upon the property line are owned in common; and the fruit thereon should be evenly divided. But if the trunk of a tree be upon one's land he is entitled to all the fruit on said tree, though many branches overhang the property of his neighbor. If obnoxious, the adjoining owner may cut off those branches that overhang his land.

SMALL WHITE BEAN.

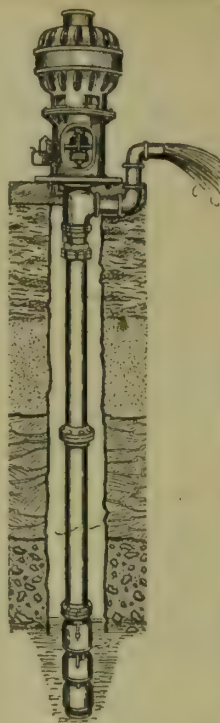
[Written for Pacific Rural Press.]

One of the essentials in small-white bean growing is to have plenty of moisture in the ground before planting, even if you have to irrigate in November and December.

That at least has been the experience of M. F. Martin of Monterey county on a dark loamy soil. By practicing winter irrigation he finds one cultivation ample for the conserving of all moisture required under his conditions. For a number of years Mr. Martin has farmed his land to sugar beets and potatoes, but last year his son grew a quarter acre of small whites that yielded 22 sacks of marketable beans; so this year 24 acres were planted to the same crop. After irrigating, the land is plowed shallow, then cultivated down well with harrow and land roller, the object at all times being to get the soil in garden seed bed condition. If there is an abundance of weeds, cultivating is started soon after the plants are out of the ground, but is generally delayed till the vines are about four inches high. At harvesting time, cutting is done with a regular bean cutter, and the vines are put into shocks. If cut when fairly well matured, a week in the shock is sufficient but in some cases two weeks is required, after which they are ready to be threshed.

In normal years Mr. Martin expects a yield of 15 to 20 sacks to the acre, a sack weighing 90 pounds, which at the present price of beans means an especially profitable crop.

The total shipment of raisins from the Dinuba district will be close to 125 tons for the season.

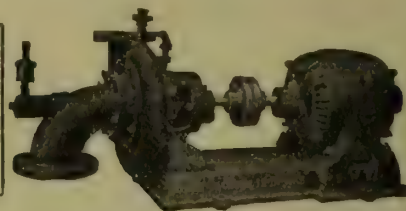


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No less important than the splendid quality of Western Canada's wheat and other grains, is the excellence of the cattle fed and fattened on the grasses of that country. A recent shipment of cattle to Chicago topped the market in that city for quality and price.

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W. F. WILSON, STOCKTON, CAL.

SEED SELECTION AND CORN GROWING.

[Written for Pacific Rural Press.]

Eighty bushels of corn to the acre is not by any means a record corn crop for the State, but it is a profitable yield when it can be continuously secured in addition to a good crop of grain hay each year.

At least so thinks W. D. Trehwitt of Kings county whose yield averages that after taking off a crop of wheat or barley hay from the same land each year. Corn on this ranch is usually planted the latter part of June after the land has been irrigated and plowed good and deep. As soon as it gets above the ground cultivating is done as long as possible, usually three times. One irrigation is made after planting, when the corn is just beginning to tassle out.

Seed selection is given a great deal of credit for the continued high average yields by Mr. Trehwitt, two selections being made each year. While the corn is still in the field it is gone over the first time, stalks being stuck in the ground near those stalks which are medium in size and which carry a medium amount of long, straight row ears. At harvesting time the ears from these stalks are husked separately and taken to the barn where they are later picked over again. Here the ears are compared again, the above qualities as well as the tightness of the grain on the ear being considered. The ears scoring the highest in this final selection are the ones used for the next year's seeding, the butt ends, however, never being used for seed.

GRAIN SORGHUMS FOR PASTURE AND SILAGE.

To the Editor: Are grain sorghums safe to pasture stock on before they head? That is, are there any poisons or any danger of bloat? Is Egyptian corn more valuable for silage than broom corn? What is the comparative value of each if siloed after they have dried, and after the grain is off, as compared with alfalfa hay?"

Answered by Prof. F. W. Woll, University Farm, Davis, Cal.

Grain sorghums may be safely pastured before the plants head out, provided the crop has not been stunted in its growth by frost or extreme drouth.

There is no material difference in the composition or value of Egyptian corn and broom corn for silage. The stalks alone placed in the silo after the grain has been harvested will not be likely to make the best kind of silage. A great deal of water must be added in order to have the siloed mass sufficiently moist to insure correct fermentations of the cut stalks in the silo. One can hardly give a definite figure for the comparative value of such silage and alfalfa hay, as there is no experimental evidence on this point. It would probably take five or six tons of silage from sorghum stalks to equal a ton of alfalfa hay in feeding value.

Farmers throughout the West are said to be opposed to the proposal to grant the railroad trainmen of the country an eight-hour day and then let the railroads even up by raising freight rates, declares Henry N. Pope, President of the Association of State Presidents of the Farmers' Union. He says: "Today we find the highest paid laborers in the world, making three times more money than farmers, demand-



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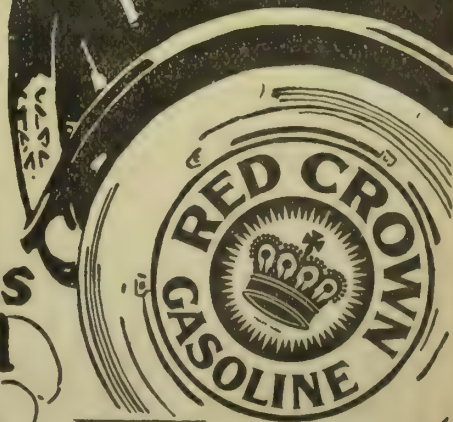
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ing a 25 per cent increase and Congress hastening to their relief. This increase must in the end rest upon the backs of the farmers and will reduce their incomes and increase their hours of labor."

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An Imposing Army of Farm Machinery Shown at the Puente Tractor Demonstration, Representing Nearly All Known Types.

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Puente Tractor Demonstration.

The Best Tractor Meet ever Pulled off in California Enabled Thousands of Farmers to Decide Their Tractor Questions.

[Written for Pacific Rural Press.]

"Mules," "Bulls," a "Happy Farmer," "Water (loo) Boys," "Little Fellow with a Big Pull"—all that sounds like agricultural strength and happiness. "Ball Tread" and "Chain Tread" are just as agricultural, while "Caterpillar" and "Best" are still stronger. Little ponies of the tractor family made as much noise, in due proportion, as any of them, and were as limber in the joints. Several crosses between trucks, autos, and tractors tried to fill the dual purpose field; and much agricultural machinery was shown. They were all there in multiplied numbers at the Puente Tractor Demonstration Sept. 19-23.

They most all plowed well in the general demonstrations daily; and in private demonstrations did as they liked. The Yubas chased their tails around a little pile of dirt and then let a pack of Deeres chase them around the fields. The Big Bulls just walked around a 40-foot circle without any driver, patiently pulling double disks repeatedly over the softened ground. The Waterloo Boy hauled Killefer and Forkner harrows in circle half knee-deep in dust, without any driver, and then went onto the big field as brave as any. Everybody recognized the "Mule," which did a lot of braying by means of a whistle on the exhaust. But this machine demonstrated a capacity for doing things other than making a big noise. In pulling a heavy double disk at extreme angles it powdered the dirt so fine you could push your fingers through it with ease to the extreme depth. The whole Samson family was out, but you would have to be introduced, for you wouldn't expect Samsonian strength from such little fellows till you see them on their dynamometer or disking in soft ground. You also had to be introduced to the Sandusky "Little Fellow with the Big Pull," for you had to see him to know he was around even when working, and then his spiked wheels made you think of juggernaut rather than a harmless "little fellow." His principal object was to show what a tractor should do, not what it could do in emergency, though he claims 33 per cent reserve power. The light-weight Happy Farmer was all right till the third public demonstration, when he got a case of acute colic, as all of us are likely to do. The baby of the bunch, unsophisticated but earnest, is the latest born into the family of Lambert, and its worst trouble seemed to be that the disk it was pulling would get clogged on

clods that had to be dug out with a crowbar. The Babies of the Best family begged to be excused because they played too long on their way to Puente; but when they did get into the harness in front of their plows, they turned square corners like soldiers. There was a bunch of Caterpillars too, the big one swung around the ends in the plowing demonstration with a majesty that compelled awe; and without stopping, puffed away deliberately as if there were no intention of ever stopping. And this Caterpillar, as well as its Best mate, burrowed some 18 inches underground with a Killefer subsoiler, loosening a strip of dirt eight feet wide to air, which it has not had for a few thousand years, and to water which has usually puddled the surface before it would store itself in the underground for future use of farm crops. The Barker four-wheel drive truck-tractor was just a-borning and not able to be out. The Los Angeles Auto Tractor Co.'s tractor attachment for Ford cars to plow, with the motor running at 12 to 15 miles an hour on high caused much comment. They didn't plow in the public demonstration. The La Dow combination road and farm tractor did some plowing with what was estimated at 16 h. p. at a four-mile speed.

The Best Ever.—Never in California has there been so good an opportunity to select one tractor out of many, on the merits of their work all at once under the same conditions; and never have there been so many who seized the opportunity to investigate. Time after time, we asked farmers if they were tractor users; and most of them responded either that they were at the demonstration to pick out the one most suitable for their conditions, or that they were there to decide whether any tractor would do the work on their places.

Our enthusiasm burned high, but we could not let that color our estimates of attendance, which are, therefore, lower than others. At the afternoon concerted plowing demonstrations where fifteen machines were allotted space in proportion to their advertised drawbar pull, most of the spectators congregated; and careful estimates at these times placed the attendance at an average of about 1,000 per day. This, of course, does not count those who came and went before and after the general demonstrations. A considerable number came from Imperial Valley and north of Tehachapi.

Who Did It.—The demonstration was carried out by the Los Angeles Traction and Implement Dealers' Ass'n. Arrangements were in hands of committees. The field committee gave general control to C. W. Mar-

tin, a man of good lungs, tremendous energy, and a determination that there should be fair play. He emphasized the fact that it was no contest to see which tractor would plow its land first, but that all machines

THE SANDUSKY TRACTOR

"THE LITTLE FELLOW WITH THE BIG PULL"

15 Draw Bar H. P.—35 Belt H. P.

The consensus of opinion of the Farmers at the Puente Tractor Demonstration was—The Sandusky performed every field operation with perfect ease.

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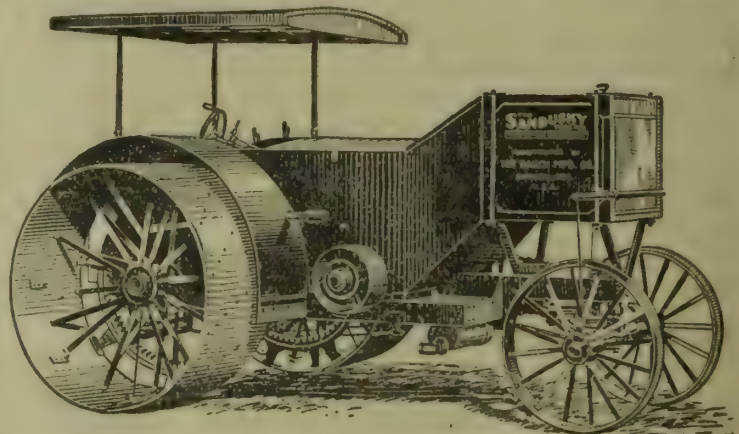
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involved were there to give farmers (not city folks) a chance to decide whether to use tractors on their own farms, and what kind to use.

A minimum depth of six inches was required on this grain land which had never been plowed over three or four inches deep, and was good adobe soil, not having been irrigated.

A complete set of rules was drawn up and each member of the Association put up \$25 to insure compliance with them. Every tractor entered in the general demonstration had to start plowing at one o'clock sharp.

They were not to be allowed to run faster than their catalog speed, though in several cases this ruling seemed to be ignored. A chart prepared before the demonstration started, showed the location of each field; and positions of tractors were chosen by lot. Three fields were laid out for the one o'clock general demonstration on grain land, and staked for each machine. Separate fields on bean land were laid out for each exhibitor on which private demonstrations were carried out before and after the concerted plowing events each day, as suggested by spectators. These included two big grain fields for the biggest Holt and Best tractors to work over. The private demonstrations included various kinds of plowing, tillage, land leveling, subsoiling, and stunts. They gave opportunity for every question the people wanted to ask.

General Demonstrations.—It was real exciting to stand behind the panting, puffing, iron horses, so eager to jump into what was forbidden to be called a race. At the drop of a flag they charged with unearthly explosions and showed off their different qualities, pulling various kinds and makes of plows.

Some with throttles wide and at top speed, made the first turn and back before slower machines got across. In this as in life, however, not always "to the swift is the race."

The question most asked was, "Can the machine turn easy and quick enough to cultivate orchards?" Here in the general demonstration was an unexcelled opportunity to see the turning capabilities of the machines. There was a great difference in ease of handling, in shortness of turns, and in ability to hit the furrow after the turn. Some drivers had scarce felt a machine before, though spectators expect most skillful handling and judge machines accordingly. Many people noticed the varying depths different machines plowed; also whether the motors seemed to labor unduly. The biggest machines having too few plows, generally plowed deepest and finished latest.

Exhibits.—Auto trucks were most numerous, the Chicago Pneumatic Tool Co. having five Little Giants with worm and chain drives and capacities of 1 to 2 tons at speeds up to 25 miles an hour and 40 in a pinch. One was loaded with an engine and air compressor weighing 5,600 pounds. Of the several Knox Six-wheel trucks, one paraded with a 10-ton load of cement piping. Stewarts, Republics, Gram-Bernsteins, and Menominees made a bigger truck show than at the State Fair. Ensign and Master carbureters were there for investigation. Kellar-Thomason and Irrigators' Supply Co. supplies, Schmeiser land levelers, and roller bearing wagons were shown. The Holts had their own land leveler and disk plows. The John Deere Co., the Oliver Plow Co., the California Implement Co., the E. P. Bosbyshell Co., and Dixon & Griswold furnished plows, disks, harrows, etc., for use and for exhibit. Hughson & Merton furnished power-lift disk Case plows with their tractors. "The Killefer Mfg. Co. doesn't make anything that pulls easy." Whenever a tool is needed that will stand more pull than a tractor can give it, they make

it. And their tools were used in the private demonstrations. A three-standard subsoiler loosened dirt 18 inches deep and 8 feet wide at a trip. A four-mold-board Killefer plow turned 64 inches as much as 13 inches deep in places. A chiseler such as takes the place of plows in many bean fields tore up dirt a foot deep and eight wide with nine standards. Their double deck plow with subsoiler underneath would have drawn still bigger crowds, but they were all sold out.

Northern Demonstration.—Before the grand parade Saturday of all tractors, beginning with the biggest, everyone plowing into the furrow

left by the one in front, across the headlands left in the three previous general demonstrations, plans were actively on foot to hold at least one annual tractor demonstration in northern California and one in Southern California, eliminating all objectionable contest features and always making them of true competitive value to prospective power farmers.

It is rumored that a syndicate of San Francisco bond houses is prepared to underwrite an issue of \$2,000,000 6 per cent bonds, secured by a first mortgage on 21,000 acres, comprising the old Fair ranch at Knight's Landing.

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24x3	\$ 6.55	\$1.75	\$1.05
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34x3 1/2	10.95	2.30	2.55
36x3 1/2	12.05	2.40	2.75
36x4	13.20	2.80	3.10
38x4	13.85	2.85	3.20
38x4 1/2	14.05	2.95	3.30
38x4	14.70	3.10	3.40
38x4 1/2	14.95	3.15	3.50
38x4	15.05	3.20	3.60
38x4 1/2	15.85	3.30	3.70
38x4 1/2	20.25	3.85	4.30
38x4 1/2	20.85	3.95	4.35
38x4 1/2	21.25	4.10	4.50
38x4 1/2	21.00	4.15	4.60
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38x5	23.95	4.90	5.35
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"Thousands at his bidding speed,
And post o'er land and ocean without rest;
They also serve who only stand and wait."

Was the spirit of prophecy upon John Milton when, more than two hundred and fifty years ago, he dictated those words to his daughter?

Did the "blind poet" have a vision of the millions of telephone messages speeding instantly over hundreds and thousands of miles of wire spanning the continent?

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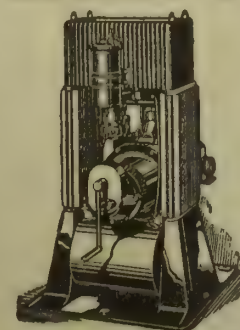
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What Fruits Shall California Grow?

(Continued from First Page.)

But this was still, primarily, an exhortation to have fruit locally grown in some form which would make sales throughout the year and displace importations. The chance of exports was of course but dimly discerned and the prophecy not speedily realized—for that is the usual way with prophecies. In fact a decade intervened before T. F. Cronise wrote this:

Until within a few years California has been entirely dependent on the Eastern States and Europe for preserved fruits and vegetables, pickles, etc., and has annually consumed about a million dollars' worth. The State is now, however, on a self-supplying basis and is shipping to Nevada, British Columbia, Mexico, and to China and Japan. The total annual production of these articles amounts to \$650,000.

Dried fruits are now being largely prepared and their appearance is very fine. The canning of fruits is also assuming large proportions and will soon become an important industry.

A Decade of Preparedness.—The second decade of American occupation was, in fact, the decade of preparedness as the first was of prophecy—though the latter had not yet reached its limits. It was in the '60s that a number of things came through—in addition to those already suggested. In 1866 250,000 oranges reached San Francisco from Los Angeles, while 3,000,000 oranges came from Hawaiian and Society Islands, Lower California, Mexico, Central America and Panama. In those days they counted the fruits, not the boxes or carloads as we do now. But the rolling up of a quarter of a million oranges in a year gave the growers great boldness, for it was written in 1869:

Citrus fruits, it is believed, can be grown here for the Eastern States with good success and profits. It would probably take California fifty years to supply the demand of the United States if her fruit growers were to enter into the business with energy.

The guess was not a bad one in point of time, and yet the guesser, fifty years ago, could have had no conception of the fact that Cali-

fornia could put aboard cars in 1916, 3,366,928,665 citrus fruits, or that the United States could eat so many.

In 1869 the first overland railway was opened and the equivalent of ten carloads of deciduous fruits was shipped to the East: in 1870, 70 carloads; in 1871, 115 carloads and then it was that C. W. Reed, himself a grower and shipper, said: "This business should increase until we can send 1000 carloads." It has, of course, increased a hundred times Mr. Reed's estimate of its attainment, for, counting fruits of all kinds and other perishables like fresh vegetables, we are shipping about 100,000 carloads a year. But we do not intend to pursue that interesting line farther at this time. We simply wish to emphasize the fact that, within the first twenty years of her growth as a State California had changed her plans and purposes, from planting to supply local markets and displace importations, to others which belong to the relation which she has since then assumed to the fruit trade of the country and of the world.

Points of View in Planting.—Our purpose hitherto in this writing has been to show as strikingly as we can, the fact that conditions governing fruit planting in California have changed radically during the evolution of the industry and that they have generated new purposes and points of view to which every planter should give careful consideration, in the light of his own observation and experience and in connection with the best suggestions he can get of broader wisdom. We offer a few hints for the planter to broadly accept and, perhaps, definitely reject, if his particular circumstances warrant the latter course. We advise a short coat for horse-back riding and yet, if the reader has rheumatism in his shanks, he may find long coat tails very cosy to wrap around them. And so it must be with fruit planting, and all other farming operations, because farming is a matter of individual intelligence and

judgment and not of blind adherence to rules and formulas. The "farmer's almanac" has lost its standing as a classic. Let us therefore discuss a few "planting precepts" in the light of California experience.

"Plant what is best for your soil."—This is a very old saw-cut of wisdom, and is sometimes really wise. It does not, however, settle the question, for several reasons. Good fruit soils, which alone should be chosen for commercial fruit growing, are often equally suited to a number of fruits if roots are wisely chosen and the local climate favors. There is, then, no best of all fruits for a good soil but, probably, several best and therefore the old saw cuts nothing. Trying to shift the burden of the choice from your own intelligence to the soil will not work, unless you have a soil so bad for fruit that it will destroy all but one kind, and such land should usually not be planted to fruit at all.

"Plant kinds of fruit which others are not planting."—This is another old chunk of unwisdom, under present conditions in California. It was worth considering in early days when planting was to meet the local demand and it may still be a principle of some value with those who are planting for supply of nearby towns, resorts or hotels or in localities whence fruit wagons run to the mountain camps. Though diversity in production may help peddling, too much of it renders great commercial development of a district impossible.

"Plant varieties which others are not growing."—This seems, on its face, to scintillate with wisdom, but, really, the pursuit of this maxim has cost California fruit growers the loss of much time and money and has impeached their horticultural morality, for it has transformed many investors, who could have been straight producers, into a bunch of grafters. Every man may make mistakes, of course; and he should graft them out as soon as possible, but to start on a lifetime of that work is to invite weariness and failure.

"Plant novelties before others get them."—If novelties were really what introducers represent them to

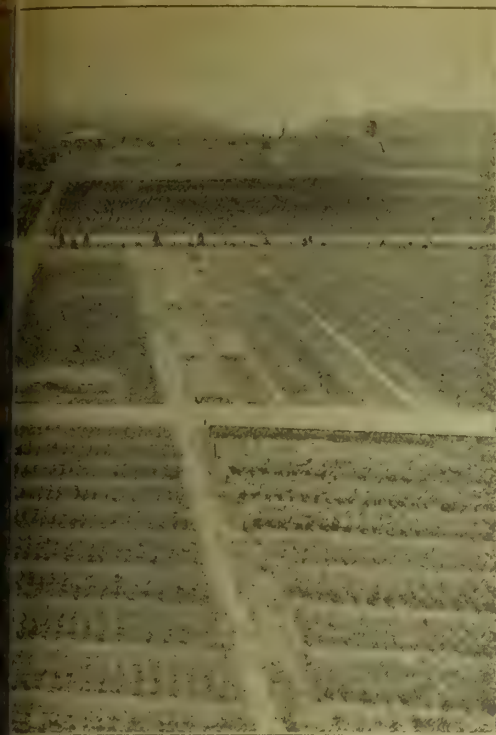
be, this precept would nearly settle the vexed question of what to plant and would establish fruit growing as the most progressive and least uncertain of all pursuits of mankind. But most novelties are not what they are represented to be or to be good for—not because introducers are intentionally deceitful but because they are ignorant. They usually do not know what the novelty really is, for no sufficient practical test has been made of it and they do not generally know what large commercial requirements of characters and qualities of the kind of fruit, are. The result is that the planter of a novelty has to find out all these things for himself afterwards. Therefore the large planting of novelties is not a well-founded commercial operation at all. Every planter should plant a few most promising novelties, of the kinds of fruit he is interested in, but he should not depend upon them until he has proven them successful in some sufficient way.

Such are a few of the old precepts for guidance of planters which are still very useful to amateur planters and to those who may plan small production for home use or for particular local markets, but they are misleading to commercial planters, for some of the reasons which will be stated.

Precepts for Commercial Planting.—A few hints of points of view for commercial planting at this stage of the development of California fruit growing, may be noted as follows:

Plant the fruits which have been demonstrated in your district to serve some good commercial purpose. This not only determines local suitability of soil, moisture supply, heat, etc., for those fruits, but it also determines selling quality, which, from the point of view of income, is even more important.

Plant for quantity, not for diversity.—Experience has clearly shown that in California it is essential to have not only good, commercially serviceable fruit, but plenty of it. All large commercial transactions are based upon the present availability of considerable quantities of



and developed by Mr. C. W. Ward, a Prominent Nurseryman, and is Designed for the Growth of Every Variety of Ornamental Plant.

satisfactory goods and all anticipations of extension of trade depend upon continued and enlarged supplies of exactly the same goods upon which efforts and expectations are projected. This is true whether the trade-building is done by the packing and merchant class or by associated effort of growers. Unless this is assured by wise, progressive planting to enlarge supplies of recognized standards of style and quality, neither private nor co-operative trade-effort is worth while.

Do not fear oversupply of proven fruits. Questions of oversupply have always arisen and they always will arise. If croakers had determined the course of California fruit growing, planting would have stopped fifty years ago and the present State of California would be losing over a hundred million dollars a year. But, as shown above, the pioneers had faith and foresight and we should be grateful to them, for, really, fruit planting had a much worse outlook fifty years ago than today. Their prophecy was based on faith: we prophesy from demonstration—the accomplishments of a great, elastic industry. Of course there will come times for going slow. When arbitrary and artificial conditions are forced upon the aspect of a fruit, as is now the case with the grape, one should wait for the skies to clear. For it must be remembered that confident and rational extension does not mean plunging.

Do not plant many varieties. It is not only necessary that the fruits planted should be the kinds upon which the district is making good, getting a name and building up handling capacity, but the varieties of each such fruit should be of the type which rules in such achievement. In the nature of things there should not be many varieties. It is rational to select for the improvement of the type and to introduce new varieties of the same type which may be more prolific, immune to disease, of different ripening season, etc., but the fruit grower should guard against introduction of types not so acceptable to shippers, canners and evaporators just as zealously as the live-

stock breeder guards against outcrosses which destroy his types. From the point of view of commercial uses there are many varieties which are mongrels—no matter how beautiful and toothsome they may be.

Do not lather around after the most profitable fruit. There is no most profitable fruit. All the fruits which have attained commercial importance in California have, at some time or other during the last thirty years, reached about the same acre-value in production. We have kept an eye on acre-values produced and our conviction is that the high figures are not far apart and the average net returns, counting investment and cost of production, are not widely different. The main thing in planting, then, is to get what is a "going" fruit in your district, for which local culture points and policies are demonstrated and for which capable selling institutions are established or being developed by co-operative effort.

Do not pay too much attention to "neglected fruits." You are, probably, on the whole not much smarter than all other people combined. If fruits are neglected or not largely grown, there is some good reason for it. If the enthusiastic Governor Downey had had his way we would now have more pomegranates than peaches in California and not be able to sell a carload of them. Do not, therefore, place too much dependence upon your own brightness nor the clairvoyance of others. Plant the fruits which have made California great and which California is making greater in public esteem by her large, standardized production and by her generous, organized effort for publicity and patronage.

In a way, the last half century has been a trial-period to determine the survival of the fittest, culturally and commercially. For assured income the State should grow more of the fruits which are now profitable; the district should plant more of the same fruits for which its own achievements have demonstrated local suitability and commercial outlet; the individual should plant more of the same fruits he is now suc-

New Nursery for California.

For two or three years, near Eureka, Humboldt county, C. W. Ward has been steadily at work building up a great ornamental nursery. Very little has been said of this enterprise, but the pictures above speak eloquently of the immense amount of work done. These illustrations, taken together, make a panorama of what will be known as Cottage Gardens' Nurseries. At this time there are growing on these grounds 75,000 Indian azaleas, of which 10,000 are in bloom; 50,000 rhododendrons; 1,500,000 Holland bulbs; 10,000 boxwoods; 10,000 Hollyberry trees; 100,000 conifers; 2,500,000 Australian, Chilean, New Zealand, Asiatic,

African, and Japanese plants and coniferous evergreens. Mr. Ward is one of the prominent ornamental nurserymen of this country, and has for years conducted a large plant at Long Island, New York. He believes that the combination of leaf-mold soil and moist climate of the Northern California coast are ideal for the great nurseries his company is building up at Eureka. From this plant will be sent bulbs to the trade at least six weeks earlier than is usual. Not only will the trade of the Coast be catered to, but a national advertising campaign is expected to bring orders from everywhere.

cessfully growing—diversifying only to secure a longer and easier harvesting season, viz.: to get more days of profitable work from his outfit of labor and appliances, and then his choice of other fruits should be restricted to those which are well grown and handled in his district. This is the straight and narrow path in commercial fruit growing and too much light cannot be thrown on it. Mankind is naturally so prone to wander, that one does not need to set up electroliners along the boulevard of heterogeneous and self-luminous undertakings and investments.

WINTER-PLANTED STRAWBERRIES BEAR FIRST SEASON.

[Written for Pacific Rural Press.]

Early strawberry planting cannot be too strongly emphasized, in the opinion of Dr. J. B. Cutter of Santa Cruz county since an experience he had last spring with a two-and-a-half-acre patch.

The ground for this patch had been thoroughly prepared before January 1 and was in fine condition. Accordingly, planting was started on that date and a small part of it completed when the heavy rains started. These continued so long and incessantly and then stopped so abruptly that the soil had to be ir-

rigated and reworked before the rest of the field could be planted in May.

All of the vines have put on a fine growth, but the early planted ones have produced exceptionally heavy for first year's planting while the later planted ones haven't produced any berries.

HORTICULTURAL LAW REVISION.

The Visalia Convention's committee on revision of our horticultural laws met in Sacramento September 20 and enlarged the standing committee by the addition of the following names to list published on page 293 of our issue of Sept. 16, viz.:

Harry Chase, Riverside; C. C. Chapman, Fullerton; R. C. Allen, Bonito; James Mills, Willows; Harris Weinstock, Director State Commission Market; Chas. W. Paine, Secretary State Agricultural Society; E. N. Richmond, San Jose; E. A. Gammon, Hood; John E. Gardner, Watsonville; Mr. Yerxa, Princeton; Carlyle Thorpe, Manager Walnut Growers' Exchange; Geo. W. Pierce, Davis; W. D. Russell, Davis; James Madison, Associated Raisin Company; B. B. Meek, Oroville; D. D. Sharp, Co. Hort. Com., Riverside; Roy K. Bishop, Co. Hort. Com., Santa Ana; William Wood, Co. Hort. Com., Los Angeles.

Other appointments, representing other interests, will be made later.

Livestock Facts and Fancies---II.

[By the Editor.]

As was suggested last week, the final test of the value of purebred animals must be their contribution to the industries which are based upon their powers and products and to the prosperity of the farmers who invest their time and money to give the world more and better food.

It is therefore the function of the breeds of cattle to enable the farmer to produce more and better meat and milk; of the breeds of sheep, to produce more and better wool and meat; of the breeds of hogs to produce more and better meat; of the breeds of poultry, to produce more and better eggs and meat; of the breeds of horses, to produce more speed and power, etc. And all these functions, and others like them, are attended by four fundamental abilities: (a) to do these things more quickly than scrub animals can do inferior things; (b) to make better use of the food which is furnished them; (c) to give the man joy and satisfaction in their beauty, style and form as correlated with their producing abilities; (d) to possess the power to transmit their characters with surety to their offspring.

Some of the principles, upon which the service of purebred animals to mankind rests, were discerned in prehistoric times; more of them were demonstrated later and are found in the earliest agricultural records; later still others were brought to light, until finally, within the last few centuries, "modern breeding" arose, on the basis of experience, and gave the world the beginnings of the breeds as we now know them. Since that time there has been developed a science of breeding, on the basis of experience, penetrating observation and the establishment of records—this foundation being more recently illumined by the general achievements of natural science and, more recently still, endowed with exact knowledge, by systematic research and practical experimentation.

Thus we have in a nutshell, two great facts in the general advancement of agriculture and in the increased prosperity of individual farmers, viz.: what the purebred animal may be expected to do and the art by which the farmer of the present day may realize that expectation in his own experience. Evidently it is a great, serious proposition which it is the duty of a man or woman to ponder deeply, to study diligently and to act upon carefully, intelligently and resolutely. But there is this encouraging fact about it, as shown by centuries of experience, that the greatest attainments in breeding have not been reached by the profoundest scholars in the art and science of their day, but by the plain people who have come nearest to living with their animals and have by close and continued observation of their forms, functions and behavior caught gleams of truth in the light of which they recognized variations toward improvement and ways to attain it. In this way our now popular breeds were established and in this way also they may still be handled to the greatest advantage of the greatest number of people. Therefore it should be clearly rec-

ognized that the promotion of improvement in livestock does not consist in collection of ring-side gossip or in tabulation of prices of best-sellers or in being hailed as a good-fellow by the "fancy" and a good player at their game. All these things are pleasant enough and sometimes teach lessons of great shrewdness, but they are not the best contribution to the understanding of animals and the appreciation of what they are really worth as factors in a reasonable producing plan or enterprise. One must study animals for himself, at fairs, in his neighbor's fields and his own, and read what is being done with them in practical ways. Unless he has a lot of direct contact of this kind, much livestock gossip is likely to mislead him and without such contact he is apt not to be a safe or wise buyer on his own account because he lacks practical wisdom in selection. Without knowing a thing for himself, from the inside outward, he is as little qualified to choose ancestors for the type of animals he wishes to get as he would be to select movie kings and queens for a film factory.

We see no chance for benefit from promotive work to help the purebred interest, and the interest of those who buy purebreds for the producing use of them, unless it is undertaken on a serious, systematic, educational basis. This is what the agricultural colleges have done and they have succeeded in multiplying the value of purebred animals to practical people during the last two decades. This is what this journal has tried to do ever since its founders, forty-six years ago, saw the general improvement of the common stock of California by the changing forms of cattle, sheep, hogs and horses by the introduction of the best breeds of the day by the pioneers and their use upon the Mexican types which they found here. And this is what we are still trying to do now, when purebreds and improved grades have become dominant in the eyes and thoughts of Californians. The suggestions which we give to our special writers on these subjects are embodied in the very common and yet very expressive phrase that to be worth record in these columns animals "must not only be good but good for something." And this, it seems to us, is the only reasonable basis on which to promote the purebred interest. If this interest does not cling to the fundamental ideas of producing animals with such potentiality of practical benefit and of getting the prepotency of the purebred into the possession of practical producers at prices which improved production warrants, those who give their time and money to breeding and distributing purebreds might as well be swapping jackknives, so far as State development and individual prosperity of farmers are concerned.

Next time we shall try to give a few hints of opportunities and of recent instances showing why it is now more promising than ever to minister to practical standards of value and to make the means of reaching such standards more available.

The Big Holstein Sale

At Hanford, Cal., October 18, 1916

The Place to Buy Good Holsteins

**100 Head Registered Cows and Heifers
A Few Choice Young Bulls**

No better opportunity will be presented this fall for the purchase of good dependable foundation stock. Tuberculin tested.

R. F. GUERIN, Visalia, Cal., has a choice consignment including several high record cows, one of which is the dam of a 27.42-pound 4-year-old and another has a 24.88-pound daughter. They are bred to a 30-pound son of SIR VEEMAN HENGERVELD. He is also selling his senior herd sire, ARCADY PONTIAC WAYNE HENGERVELD, sire of 24 A. R. O. daughters, including a 27-pound 4-year-old.

K. W. ABBOTT, Milpitas, Cal., will sell some splendid cows and heifers, including a 26-pound cow; a 24-pound daughter of a 23-pound cow and two daughters of a 24-pound cow, sired by a son of IGNARO DE KOL. A special feature in this consignment will be two sons of his great herd sire, COLANTHA SIR PONTIAC AAGGIE from 26 and 27-pound dams. Cows will be bred to COLANTHA SIR PONTIAC AAGGIE.

ALEX. WHALEY, Tulare, Cal., is selling some choice heifers of select breeding and type from A. R. O. dams with records as high as 23 pounds. They are in calf to SEGIS PONTIAC DE KOL BURKE LUIT, whose dam has a record of 32.76 pounds butter in seven days with second calf and whose sire's dam is RIVERSIDE SADIE DE KOL BURKE, 32.29 pounds.

W. F. MITCHELL, Visalia, Cal., consigns a number of A. R. O. cows and heifers, all of which are young and carefully selected, as representative of his herd. They are bred to a good son of SEGIS PONTIAC DE KOL BURKE and are likely candidates for large records.

W. H. GINN & SONS, Corcoran, Cal., have entered in the sale a most attractive lot of young cows and heifers, including a daughter of a 30-pound cow and several daughters of their herd sire, who is by one of the best sons of KING OF THE PONTIACS. They represent the choice of their herd.

THE TAGUS RANCH and G. H. LOUGHERY, Tulare, Cal., have a large entry of select animals in the sale, consisting mainly of young cows in calf to approved sires, one of which is a son of KORNDYKE QUEEN DE KOL'S PRINCE from a cow with a record of over 700 pounds butter in a year.

T. J. GILKERSON, Lemoore, Cal., consigns fifteen young cows, mostly with first and second calves; sound and right. These are bred to ARAIA PONTIAC DE KOL SEGIS, a remarkably fine young sire whose dam and sire's dam average over 1000 pounds butter in a year. This consignment includes a prize winner at Panama-Pacific Exposition.

CHAS. YOCUM, Tulare, Cal., has a small consignment of choice animals, including a 22.62-pound cow bred to SEGIS PONTIAC DE KOL BURKE LUIT, whose dam and sire's dam are 32-pound cows.

A. W. MORRIS & SONS, Woodland, Cal., are selling some well-bred heifers and young cows with official records as high as 25 pounds butter in 7 days and bred to such sires as SEGIS PONTIAC DE KOL BURKE; KING MORCO ALCARTRA and KING MEAD OF RIVERSIDE. There will also be included two young bulls of serviceable age whose dams have records of 33.54 and 31.78 pounds butter in 7 days, one of which is a daughter of De Kol Burke, the sire of seven daughters above 30 pounds.

Sale catalogs will be ready about October 1st and will be mailed on request.

California Holstein Breeders Third Annual Sale

Col. B. A. Rhoades, Auctioneer.
Los Angeles, Cal.

F. L. Morris, Sales Mgr.
Woodland, Cal.

POLAND CHINA SALE AND MEETING.

[Written for Pacific Rural Press.]

The wider distribution of good Poland China hogs among farmers, at a fair price to both buyer and seller, was the object and result of the first annual auction sale, held under the auspices of the Poland China Breeders' Ass'n of North San Joaquin Valley at Modesto, September 20.

The average of \$42 for the 28 head sold was not a high one but it was a price which proved attractive to a number of farmers situated in various parts of the State and one at which breeders can practice a live and let-live policy, the two fundamental purposes of the association under whose auspices it was held.

As has been customary at previous hog sales, females were more in demand than males, the 23 head that were sold bringing an average of \$44 while the five boars brought an average of \$32.

The highest price was \$85, paid by H. I. Marsh for a two-year-old sow consigned by W. A. Young. L. L. McCracken of Ripon was the largest buyer, securing seven head for \$232.50. Mrs. Ella C. Maze of Modesto was the next heaviest purchaser, securing five head for \$222.50. Olsen and Jones of Merced county secured three head for \$97.50. Other buyers were University of California; M. Bassett, Hanford; J. M. McKindley, Acampo; Frank Palmer, Davis; C. C. Potter, Lemoore; J. A. Groves, Farmington; J. A. Clark, Lodi; N. Spitz, Keyes; O. Linn, Modesto; N. Hutt and W. L. Bowron. T. G. Gilkerson and Emerson Bone were the auctioneers in charge of the sale.

The night preceding the sale the association held a banquet and get-together meeting at which representatives of the Kings County Poland China Breeders' Ass'n were present as well as outside visitors from other points.

After listening to an interesting program steps were taken toward the formation of an association to be known as the California Poland China Breeders' Ass'n, two delegates being appointed by the North San Joaquin Breeders' Ass'n, who will confer with two delegates from the Kings County association at Hanford, during the State Swine Breeders' Association's meeting October 5. If the plan for the State-wide association can be perfected by these delegates a general meeting of all Poland China breeders will be called for October 18 at Hanford, the date of the second annual sale of the Kings County Poland China Breeders' Ass'n.

SHEEP QUESTIONS.

To the Editor: I am changing from cattle to sheep and would like to know how many bucks to use per 100 ewes. Do sheepmen wean lambs the same as calves in the fall? Are shears or clippers best for shearing? W. T. J., Shawmut.

[Answered by Prof. R. F. Miller, University Farm, Davis.]

[Most sheepmen figure on 3 bucks to 100 ewes when the sheep are on range; while under farm conditions, this number might be reduced to two. Lambs should be weaned in the fall the same as calves; and where producing lambs for the early

market, they should be bred during January and February. The lambs are sold direct from the mothers. Furthermore, buck lambs and ewe lambs must be separated after 4½ or five months.

Clippers are being used a great deal among the range sheepmen, as they clip the ewes so much shorter, there is less danger of cutting the sheep with the clipper, and a greater

number can be turned out in a day. The old hand shears are still used considerably and a great many professional shearers like to use their own tools.]

Jack London requires visitors who enter his pig pens on a tour of inspection to apply some germicide solution to the soles of their shoes so that no contamination may be conveyed to his swine.

Kings County Jack Ranch

Breeders and Dealers

AMERICAN JACKS AND JENNETS.

Largest Herd in the Country.

80 Head Jennets 40 Head Jacks

Can Supply Your Wants at All Times.

WRITE OR COME AND SEE THEM.

John Burrell, Proprietor

R. B., Box 73.

Hanford Cal.

Sales barn in Hanford near S. P. Depot.

TREWHITT'S BIG TYPE POLAND CHINAS

The blood lines of the herd are unexcelled, the foundation stock having been secured from the Topnotch Herds of the Middle West. Sows of fine quality, yet big and roomy. The sort that have large litters of vigorous pigs.

Offering for sale a choice selection of gilts, boars and bred sows.

W. D. TREWHITT,

Hanford, Cal.

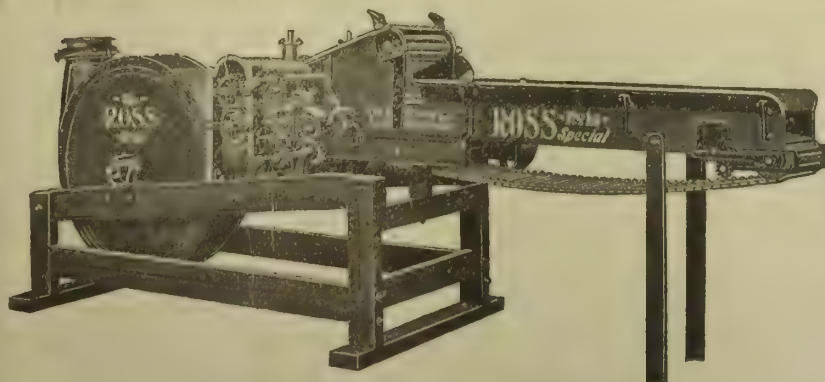
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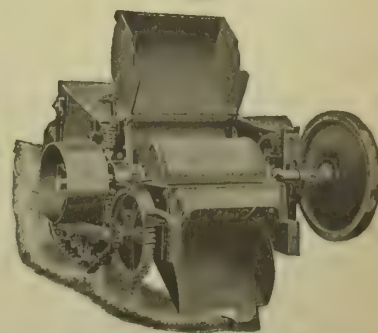
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No. 16 Ross Cutter with Compression Web.

The Humphrey Patent Grinding attachment illustrated above is the latest addition to the Ross line. By its use a merchantable alfalfa meal can be produced at a minimum cost. Furnished with license plate releasing purchasers from all liability under patent infringement suits.



The Humphreys Patent Alfalfa Grinding Attachment.

A minimum amount of power is required, and we guarantee greater capacity for the Ross line, either with or without the Grinding Attachment, than any other make of feed cutters.

The most complete line of all sizes and styles carried in the Pacific Coast.

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SUPERBA GRAND CHAMPION

Poland China of the World. Winner of 30 First Prizes and Four Grand Championships in Corn Belt and Panama-Pacific.



These two Sows have each farrowed and raised seven beautiful pigs by Superba, and are guaranteed again safe in pig to him for fall litters. First check for \$75 takes one or \$135 takes both. Have a few other Sows and choice Superba spring boars for sale.

ROUGH'S Greenfields

ARLINGTON STATION,
RIVERSIDE, CALIF.

An Outstanding Fair at Modesto.

[Written for Pacific Rural Press.]

There was no one greatest thing about the Modesto Livestock Show and Exposition, held at Modesto last week, unless it was the enthusiasm accorded it by exhibitor and visitor alike from all parts of Stanislaus and adjacent counties.

The livestock show was a headliner, and unquestionably the best one that has ever been staged at a county or district fair in California, but the agricultural, horticultural and industrial exhibits have never been excelled in beauty and quality at any State or county fair in California.

Livestock.—The most conspicuous features of the livestock show were in the dairy cattle and swine divisions, the branches of animal husbandry from which Stanislaus farmers derive most financial return.

Not alone in numbers did both swine and dairy cattle excel but in quality as well, many herds of both being present that had been State Fair contenders. But in neither case was it a walk-away for the older herds, the unknown herds, even in inexperienced hands, oftentimes

J. W. Benoit.

Ayrshires were shown in goodly numbers by Steybrae Farm, and Milking Shorthorns by Alexander and Kellogg and H. L. and E. L. Murphy, all of whom duplicated the excellence of the State Fair show in these divisions.

Poland Chinas and Durocs outdistanced the other breeds of swine in point of numbers, State Fair material being shown in each breed. In Polands H. I. Marsh took grand championships with his herd boar Model Major and an outstanding big type aged sow. Lack of fitting was noticeable in this division which undoubtedly affected the winning records of some younger breeders, who were nevertheless strong contenders.

In Durocs there were three 1916 State Fair Show herds and the going was far from easy in any class, younger breeders bringing out a surprising lot of competition and taking their share of the prizes.

Daggs' Goodenough, champion at Sacramento, was too good to beat for grand championship, as was the aged sow shown by J. E. Thorpe,



Purebred Livestock was an Outstanding Feature at the Stanislaus Fair.

capturing the much sought for blue ribbon. This argues well for the quality of livestock on Stanislaus county farms.

Jerseys were the sensation of the show in numbers, and presented no easy task for Prof. Gordon H. True who did the judging. The more experienced showmen carried off championships, but each class was hotly contested.

Altama Interest, owned by Guy Miller, was given championship honors in bulls with S. F. Williams' Golden Maidkin's Boy as reserve.

In championship cows the unforeseen happened when the junior calf, Valet's Foxy Blondy of L, shown by N. H. Locke Co., was hoisted into first place, lacking a single hole for criticism in Prof. True's estimation. She was hard pushed however by Cygna of Venadera shown by Miller.

The Holstein show was essentially a Stanislaus county event, no outside counties competing and none being needed to establish a uniform high quality exhibit in each class.

In championships, the bull Cornelia King, shown by B. F. Anderson, won out against such strong competition as the second prize aged bull at Sacramento. Female championship went to Koroba Electra, a handsome aged cow in the herd of

although there was decidedly stronger competition in the female class than in the male.

Though smaller in numbers, the Berkshire show was high in merit, two herds that were contenders at Sacramento this year being on hand together with several smaller ones. The surprise in this division was sprung when Prof. R. H. Miller put the young boar, Premier Leader, shown by G. N. York and Son, ahead of Rival's Robinhood 2nd, the State Fair grand champion exhibited by H. L. and E. H. Murphy. Grand champion sow went to an aged sow in the Murphy herd.

Yorkshires were shown without competition by Riverina Farms and most of the awards in Chester Whites went to N. H. Locke Co. without competition.

Agricultural, Horticultural and Poultry.—All of these exhibits were housed in big tents, the agricultural and horticultural exhibits being composed almost entirely of fresh products gathered and shown by the various communities of Stanislaus county. The districts represented are Ceres, Keyes, Turlock, Patterson, Oakdale and Hughson.

Some of these exhibits were highly diversified in nature while others were made up largely of one par-

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Made of Air-Dried Redwood The Standard

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Everywhere, Calif.

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What would you give for Green Pasturage the year around? If you had it you'd make a lot more money, wouldn't you?

You can have it or its equivalent, **THROUGH SILAGE**, at less cost in labor and money than through natural pasturage, almost without regard to seasonal conditions and dependent only upon your own efforts.

Corn is not the only crop for silage. Feterita, Milo Maize and Other Sorghums, Barley, Oats, Alfalfa, Vetch and Cowpeas all make good silage.

You do not have to wait until next fall to profit from a silo. Fill it in the spring with fall-sown grain or the first cutting of alfalfa, and insure against such losses as you had this season. Ask us about it.

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GRANDSONS OF TILLY ALCARTRA



Prince Alcartra Korndyke,
Best bred son of Tilly Alcartra.

At prices within reach of every Breeder and Dairyman.

When you buy a son of our herd sire, Prince Alcartra Korndyke, you get more than a Holstein bull with registration papers—you get a grandson of the world's greatest milk cow out of a high-testing A. R. O. dam. Our herd of females has been developed into one of the best in the State.

Our supply of these young sires is always limited, but we have a few now which we are offering at very reasonable prices.

Write us at once, or call and see the herd.

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"THE NAME GIBSON INSURES QUALITY."

Hillcrest Stock Farm

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Shropshire and Merino Sheep
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Shropshires sired by rams imported by me from England

HILLCREST LAD,
Imported 1911.

SHENSTONE CAVENDISH,
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Individuals and Carload Lots.
A Few Shorthorn Bulls for Sale.



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1st Prize State Fair, 1911.

HOPLAND STOCK FARM REGISTERED SHORTHORN BULLS

REGISTERED BERKSHIRES (Boars, Bred Sows and Glits)
HERD BOAR, ROYAL POINTER 2nd, 19702, First Prize
Senior Yearling, P. P. I. E.
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Raise Your Calves on Blatchford's Calf Meal and Sell the Milk

More calves have been raised on Blatchford's Calf Meal than on all other milk substitutes combined. 100 lbs. makes 100 gallons of milk substitute, costing only one-third as much as milk. Prevents scouring and insures the early maturity of sleek, handsome calves. It is steam-cooked and no trouble to prepare or use. Write for Pamphlet "How to Raise Calves Cheaply and Successfully with Little or No Milk." At dealers, or Blatchford Calf Meal Factory, Dept. 117 Waukegan, Ill.

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Pacific Rural Press, San Francisco

ticular product. Such was the case with Patterson, whose only exhibit was alfalfa hay. Turlock was more general with melons, corn, grapes and nuts as headliners. Ceres and Keyes had a variety of products shown, fresh and dried fruits, melons and other field crops being most in evidence. Almonds were given the place of honor in the Oakdale exhibit with rice a close second, while Hughson came in strong with beets and tobacco. An abundance of Indian corn and sorghums was in evidence at every booth.

Besides the community exhibits of agricultural products there were a number of industrial exhibits which featured farm crops. These were interspersed with a varied and tasty lot of exhibits shown by merchants and manufacturers from all parts of the State. Automobiles commanded attention in a tent erected exclusively for that purpose.

Poultry was well represented both in numbers and quality and in keeping with the importance which poultry raising is commanding on the farms of Stanislaus county at this time.

The attendance was a gratifying feature to exhibitors and managers, ranging right around 5,000 a day.

DRIED BEET TOPS FOR CATTLE.

[Written for Pacific Rural Press.]
With a sugar beet acreage that has seldom if ever been equaled in the State, it is certain that a great many farmers will be interested in finding some more profitable use for the beet tops than plowing them under.

On Frampton Brothers' ranch in Los Angeles county these tops are made into a valuable by-product by gathering them in the field and storing them for cattle feed. When carefully piled and kept dry on both the top and bottom to prevent moisture gathering, they may be stored almost indefinitely and fed as required. On this ranch they form the principal part of the helper and dry stock ration for several months of the year in connection with alfalfa hay and bean straw in small proportions.

Although the tops are also valuable for pasturing and are usually fed this way in many beet-growing districts by beef cattle raisers, it would seem profitable for beet growers with dairy cattle to cure them in the above manner, especially in view of the present high feed prices.


DUROC SALE CALLED OFF.

Inclement weather combined with a superfluous amount of counter attractions, wild west shows and peanut vendors were all factors in the calling off of the annual sale of the Stanislaus County Duroc Breeders' Ass'n at Modesto last week after nine head had been sold at prices up to \$87.50.

Not only did the weather prove a discouraging factor in the sale but also kept breeders from other parts of the State from attending the meeting and banquet the night previous, which was to have been held for the purpose of organizing a Western States association.

Petaluma will try to secure the 1917 convention of the California Creamery Operators.

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FIRST ANNUAL SALE, OCTOBER 23rd and 24th.
ARABIAN THOROUGHBREDS: Two-year-olds, sired by Imported Stallion Ibn Mah-russ, head of our Arabian Stud. Dams are the choicest thoroughbred mares of Santa Anita Rancho.
SADDLE HORSES: Fourteen of them, some of which are sired by Ibn Mah-russ, world renowned imported desert saddle stallion, and Don Costano, a five-gaited Kentucky saddle stallion. These horses are mostly three-year-olds.
POLAND CHINA AND BERKSHIRE BOARS: Four to nine months old. Sired by famous Poland China herd boars—Banker's Boy and Glenview Wonder. And Berkshire Boars—Kintyre Laird, Grandson's Duke and Fashion's Longfellow 5th. The dams are from the very best blood lines. Most all these animals have winnings at World's Fair.
HOLSTEINS: We will sell a number of young bulls. Some sires and grandsons of the noted Prince Gelsche Walker, and bulls from one World-Record cow and two California State-Record cows. Sixty females of the highest class will be consigned.
WORK HORSES AND MULES will also be offered for sale.
WRITE FOR PARTICULARS.
Anita M. Baldwin, W. H. TAYLOR, Superintendent.
Santa Anita, Cal.

San Ramon Shropshires
WINNINGS P. P. I. E., 1915.
Aged Ram, First and Second. Yearling Ram, First. Ram Lamb, First, Second, and Third. Champion Ram. Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of Sire, First. Pen of three Lambs, bred by Exhibitor, First and Fourth. Pen of Four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock, one year old, bred by Exhibitor, First. Flock under one year, First. Flock under one year, bred by Exhibitor, First. Produce of Ewe, First, Second and Third. Premier Championship for Breeder. Premier Championship for Exhibitor. A total, including American Shropshire Specials, of 15 Firsts, 9 Seconds, and 6 Championships.
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For many years, at widely separated show rings, under many different judges of varying type ideals, my Poland Chinas have been consistent prize-winners. My herd is large, and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished.
Young Stock, \$30 Up.
M. BASSETT.
Bx. 1, Hanford, Cal.


GRAND CHAMPION SOW.
P. P. I. E. 1915; Sacramento 1916.

California Hog Book, \$1. Pacific Rural Press

Live Stock and Dairy Notes.

(Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.)

DAIRYING AND DAIRYMEN.

W. G. Larue of Yerrington, Nev., purchased two young heifers of the prize winning Churchill Creamery herd at the Nevada State Fair.

Geo. A. Smith of Corcoran, who was severely injured by a bull on the day of his sale last fall, took an auto trip to Fresno with W. H. Ginn recently.

The cattle reported in other columns as having been bought at the Rio Vista Farm Sale by A. R. Magruder were bought by himself in partnership with Karl A. Gotchall.

A feature of the Rhoades-McAllister Sale was the large number of cows bred to King Segis Pontiac Jannek. There is a standing offer of \$150 for every heifer calf by this bull, at four months of age.

The Potter dairy herd at Santa Barbara of 250 grade Jerseys, Holsteins, and Durhams is to be added to by the purchase of 50 head of pedigree stock made at the Sacramento State Fair.

The Simon-Newman Co. have started to test their 700 dairy cows both for tuberculosis and butterfat. E. W. Stanton of Gridley has purchased a herd of 35 Holsteins from Supervisor Russell of Yolo county.

The report of the Orland Cheese and Butter Company for August is considered good for this season of the year. The monthly pay roll is over the \$10,000 mark; and the total number pounds of butter sold, 42,365.

The 1916 National Dairy Show will be held in Springfield, Mass., Oct. 12 to 21 inclusive. The association has gone to get together the greatest national show of dairy cattle and dairy products and machinery ever held in the East.

Creamery managers who have shipped poor grades of butter east the past summer have been severely penalized in price, according to one large operator and it is his prediction that a continuance of this practice will invariably result in a loss to the shipper.

Jersey breeders held an interesting meeting during the Modesto Livestock Show and Exposition last week. J. M. Roberts, California Field Agent for the American Jersey Cattle Club, was present and was promised the hearty support of all Jersey breeders present.

Farm Adviser Dougherty of Imperial county is conducting a cow testing association campaign among dairymen of that district. He reports a sufficient number of cows already signed up for one tester and expects to be able to get enough for two testers before the association is organized.

The Sacramento Valley Development Association is considering a plan of organization for the milk producers of the Sacramento Valley. It is claimed that the distributing companies of Sacramento are paying the producers of the valley 7½ cents per gallon for milk and selling it for 40 cents per gallon.

The coming world's record cow is believed to be Moseita Mutual De Kol Juliana, owned by Santa Anita Rancho. Her record nine months along in the official test was 1003 pounds butter from 24,150 pounds milk and she was giving about 60 pounds milk per day then, according to Supt. W. H. Taylor of the Rancho. The official world's record is about 1015 pounds butter.

Cows producing over 50 pounds of fat in the Yolo-Solano-Colusa Counties cow-testing association for the past month are: O. P. Gillian (Durham), 65.55; E. Beebe (Holstein-Jersey), 59.83; W. W. McNair (Jersey), 57.25; G. B. Isham (Holstein), 57.06; F. Beckley (Jersey), 56.44; C. E. McCarty (Durham),

55.06; O. P. Gillian (Holstein), 50.84; J. Watson (Holstein), 50.75; B. L. Greene (Holstein), 50.59.

Arizona dairy cow buyers who have been operating extensively in California the past year state that Arizona dairymen are demanding a better quality of cows and that it is becoming more difficult to dispose of culls even at a much reduced price. The government has been a heavy buyer of alfalfa hay in the irrigated districts, thus forcing up hay prices to unheard of figures.

HORSES.

J. D. Faugh of Tulare recently shipped a carload of horses to Portland, Maine.

Ernest Sullivan near Winnemucca, Nev., shipped five carloads of horses to East St. Louis recently. I. J. Davis shipped one carload of horses to Chicago.

Two purebred Shire mares which were on exhibition at the State Fair at Fallon, Nev., were given to the University of Nevada by Geo. Wingfield and will be placed on the Farm.

The Rio Vista horse and colt show held last Saturday was very successful. The numbers of horses entered in competition was larger and the attendance was greater. Prof. True judged the animals, giving to Ed Westgate the championship on his Shire stallion and the same honors to the Blackhawk Stock Farm on their Belgian stallion.

BEEF CATTLE.

Four hundred head of cattle from Nevada consigned to the Porterville Alfalfa Co. reached that town recently. They are to be fattened and sold.

Hayes & Devaney of Alameda county moved about 200 head beef cattle from their range on the Carson ranch at San Joaquin City to Martin Lund's ranch near Clifton Court.

Paderewski, the Polish pianist, is the latest celebrity to engage in the stock business in California. He has chosen a picturesque spot in the rolling foothills of San Luis Obispo Co.

H. T. Holley, superintendent of the Patterson Estate Co. of Alameda county, has moved over one hundred head beef cattle from the ranges to the company's land where they will be topped off on alfalfa.

Stockmen from all parts of Humboldt Co. will gather at Fortuna on Oct. 7. It is planned to make the breeding of high-grade stock, increase in the efficiency of the ranges, and similar problems part of the regular program of the association.

It is reported that the island of Lanai, one of the Hawaiian group, has been purchased by U. S. Senator Key Pittmann of Nevada and a group of wealthy Nevada cattle men, for about \$1,000,000. Cattle will be sent with which to stock the island.

One of the largest cattle deals put through in Tehama county this year was consummated recently by McKenzie & Stover. They sold to the Miller & Lux Co. 1300 head of steers and 240 head cows. Of this number, 750 head beef cattle went to the San Francisco market and the balance of the stock was shipped to the Miller & Lux ranch in the San Joaquin Valley.

Easton and Ward, owners of the Blackhawk Stock Farm in San Mateo county, announce that they have purchased a 1200 acre stock ranch near Danville, Contra Costa county. They expect to erect modern buildings on this property at once and stock it with purebred Shorthorn cattle and Shire horses. The Shorthorn herd will be purchased in England as soon as war conditions will permit.

LIVESTOCK DIRECTORY.

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SWINE.

Poland Chinas.

SMITH'S POLAND-CHINAS—Sows and gilts bred to Joker, First Prize Boar at the Wisconsin State Fair, 1915. These sows and gilts, sired by Iowa Wonder, who is a son of A. Wonder, the most celebrated Poland-China boar, living or dead. Litters from this mating are the best I have ever seen anywhere. Prices low quality considered. Will sell one or a carload. As a special inducement each purchaser will be given a year's subscription to the American Swineherd, the best swine paper published and a copy of the Handbook on the Sow; also a copy of the Pig Feeders' Manual. Geo. A. Smith, Corcoran, Cal.

YOUNG POLAND CHINAS, LARGE TYPE—Boar IBA Wonder won first and Reserve Championship at E. E., weighing 730 pounds under 2 years and breeding condition. 60-day special—fine young sows bred to IBA Wonder at very low prices; also weanling pigs, either sex. Satisfaction, or money refunded. W. A. Young, Lodi, Cal.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated, purchaser to return crates. E. A. Hall, Watsonville, Cal.

REGISTERED POLAND-CHINAS—Prolific, profitable porkers. Choice boars now ready for service, \$25 each. Weanlings, \$15. Dr. J. A. Crawshaw, Hanford, Cal.

LAKESIDE STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

POLAND-CHINA PIGS—Sired by "Iowa Wonder," son of "A. Wonder," largest hog living or dead. G. E. Shelford, Healdsburg, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Linn, Linview, Route 4, Modesto, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trenchard, Box 824, Hanford, Cal.

BERKSHIRES—Four service boars, 30 Spring 1916 open gilts for sale. Oak Grove Dairy Farm, Box 1, Woodland, Cal.

REGISTERED POLAND CHINA SWINE—Prize winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

POLAND CHINA HOGS FOR SALE—Registration papers furnished free. C. A. Cooley, Durham, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. E. Browning, Woodland, Cal.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 27A, Davis, Cal.

POLAND CHINA HOGS—Registered. Cholera immune. R. J. Miller, Llewellyn Ranch, Lathrop.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, E. 4, Lodi, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

REGISTERED POLAND CHINAS—Young stock for sale. J. H. Cook, Paradise, Cal.

REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED POLAND-CHINAS and Duroc Jerseys. M. F. Harrold, Orland.

POLAND-CHINAS—Prize winners. Money-makers. W. Bernstein, Hanford, Cal.

Berkshires.

BERKSHIRE IMPORTATION—We want every prospective Berkshire buyer to see our new importation from the East before buying. A superior lot of sows are for sale. Many of them are bred to Iowa Champion Peer 2d. He is a "big type" Berkshire of great quality. Iowa Farms had him fitted to win at the San Francisco World's Fair, but were prevented from showing by the quarantine. We have sows of all ages, and boars for sale. One or a carload. Write to us. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

REGISTERED BERKSHIRES—World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapeville Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

CHOICE REGISTERED BERKSHIRES—Fine bred Rival Champions Best and Masterpiece pigs, \$15 each. Tricos, \$40. A 700 pound son of Star Value for sale at a bargain. W. H. Waugh, Riverside, Cal.

WINONA BERKSHIRES—Won at the 1916 California State Fair and W. A. B. C. eighteen prizes, with four State and two championship prizes. F. R. Steel, Winona Ranch, Route 1, A-Box 105, Grant's Pass, Ore.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

SPECIAL SEPTEMBER OFFERING—Berkshire boars 3 to 11 months. Also aged boar. Write for photo and prices. Imperial Stock Farm, Morzan Hill.

REGISTERED PUREBRED BERKSHIRE PIGS—Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

REGISTERED BERKSHIRES—For sale, bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

ROSECRIFT BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Perris, Cal.

REGISTERED BERKSHIRES—Weanling pigs \$10 each. G. A. Casar, R. 7, San Jose.

REGISTERED BERKSHIRES—Young stock for sale. W. W. White, Elk Grove, Cal.

REGISTERED DUBOC SOWS with 6 pigs 40 gilts, 20 boars. Extra fine breeding. John Kincaid, East Bakersfield, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. Mikesell, Manteca.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

BERKSHIRES—Carruthers Farms, Mayfield, Cal. Second annual sale, August 3, 1917.

CHAS. GOODMAN—Breeder of high-class Berkshire Swine, Williams, Cal.

Duroc-Jerseys.

REGISTERED DUBOC-JERSEYS—60 head priced to sell before October 1st.—Bred sows and gilts, open gilts, boars and spring pigs, representing the most noted families of the breed. Only choicest individuals, shipped for breeding purposes, at prices within reach of every one; absolutely guaranteed and in first class condition. For particulars write to Haden Smith, Route 1, Box 84D, Woodland.

DUBOCS from River Bend Farm, St. Helena, Cal., are large type, smooth, rangy, with fine backs and deep cherry color. We sell only those we'd like to keep in our herd. Don't write us if you want cheap stock.

DUBOCS and BERKSHIRES for sale, reasonable. First premium Berkshire boar and 3rd on Duroc, the only two hogs we entered State Fair, 1916. Perkins & Co., Perkins, Cal.

RANCHO RUBIUS DUBOCS—A few choice gilts bred for October farrowing; also good service boars, tried sow and weaned pigs, priced right. Elmer Lamb, Ceres, Cal.

DUBOC JERSEYS—Herd boars. E. N. Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

REGISTERED DUBOC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

REGISTERED DUBOCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. N. Boudier & Son, Napa.

REGISTERED DUBOCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

WINTON DUBOC-JERSEY FARM, Winton, Cal.—High class pure-bred hogs, both sexes, any age.

THOROUGHbred DUBOC-JERSEYS to farrow in August. Dr. T. A. Guthrie, Woodland, Cal.

REGISTERED DUBOCS from best Eastern blood lines. S. S. Southworth, Napa.

CURTIS DUBOCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUBOC JERSEY SWINE—Frederick M. Johnson, Napa, Cal.

REGISTERED DUBOCS—All ages. Either sex. W. A. Pack, Hollister, Cal.

REGISTERED DUBOC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

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BILLIKEN HERD OF IMPROVED CHESTERS—Prize winners at the State Fair. The Farmer's Utility breed. Size combined with quality; producers of big uniform litters of growthy pigs. 15 bred gilts due to farrow in Jan. boars and sows of spring farrows; first class and extra well developed; best blood lines obtainable; prices reasonable and every one cholera immune. Write for special prices and circulars. C. B. Cunningham, Mills, Cal.

HAMPSHIRE SWINE—Fancy belted boars and sows. Good ones. \$25 and \$30. Better ones up to \$45. All registered. Ben F. Thorpe, Manager, Canfield Estate Ranches, Bonnell, Cal.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

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CHAS. KIMBLE—Breeder and Importer of Rambouillets. Hanford, Cal.

BEEF CATTLE.

FAIR OAKS RANCH Whitts, Cal.—Young registered Shorthorn bulls for sale. Sired by Landseer 379318, grandson of Imported Villager 295884.

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Paidres Ranch Co., 320 Sharon Bldg., San Francisco.

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HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

GEORGE WATTESSON—Breeder registered Herefords, Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

DAIRY CATTLE.

Holsteins.

FOR SALE—An extra fine lot of 12 Registered Holstein Heifers from 8 to 18 months old. Some are bred to Prince Juliana Walker. First Prize son of Prince Gelsche Walker. Also an extra well-bred Korndyke bull to go with them whose granddam was a former world's record cow. This stock is priced low or a quick sale. Write, or better, come and see them at once. Geo. A. Smith, Corcoran.

REGISTERED HOLSTEIN BULL CALVES—Sired by Lorena Korndyke Alcartra, whose dam made 29.75 pounds butter fat in seven days as a four-year-old. J. M. Campbell, Esalon, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamella Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

REGISTERED HOLSTEINS—Have a few bulls from El Prado Wayne Colantha, whose dams and sire's dams average per cent fat at 4 years is 5.01. See my stock at the State Fair. W. Benoit, Route C, Modesto, Cal.

REGISTERED HOLSTEINS—Sired by King Korndyke Hengerveld Ormsby 53822. Dam Pietertje Maid Ormsby 78051, world's record when made 35.56. Send for pedigrees. Geo Kounias, Modesto, Cal.

17 HEAD Grade Holstein cows, bred for milk production on my own ranch. Will sacrifice at low figure. Quitting farming. W. E. Clanton, Melrose Farm, St. Helena, Cal.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

THE McCLURE RIVER LUMBER CO., Modesto, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

A SPLENDID 8-months-old Holstein bull with good A. R. O. breeding for \$135. K. W. Abbott, Milpitas, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS, Corp., Importers and Breeders, Woodland, Cal.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chino, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnyside Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto, Cal.

30 HIGH-GRADE Holstein milk cows for sale at once. Hewitt & Hewitt, Dixon, Cal.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Calif.

Jerseys.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3 lbs. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

VENADERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly record. Guy H. Miller, Route 1, Modesto, Cal.

JERSEY BULLS—Serviceable age. Sons of Gerlie's Lad, who has two daughters that made over 600 lbs. butter as two-year-olds. A. A. Jenkins, Tulare.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

YOUNG REGISTERED JERSEY BULL CALVES at reasonable prices. O. J. Ames, Oalddale.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

FRESH JERSEY MILK COWS for sale. E. M. Locke, Lockeford, Cal.

Other Breeds.

GUERNSEY BULL CALVES from Grand Champion Bull. Also Hampshire Swine, both sexes from Grand Champion 700-lb. boar and Grand and Junior Champion Sow. Bella Vista Herd J. W. Henderson 1st National Bank Bldg., Berkeley, Cal.

EDGEWOOD FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgewood Farm, Santee, Cal.

BREEDERS OF REGISTERED SHORT-HORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

WILLOWMOOR AYRSHIRES—Great records; economy. 300 head in herd. J. W. Chase, Redmond, Wash.

INNISFALL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes, McCoy, Oregon.

HORSES AND MULES.

STOCKTON PERCHERONS again winners at Sacramento. Get next brother farmer. H. G. Learned, Producer, Stockton.

REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders, Easton & Ward, Proprietors, Burlingame, Cal.

HOGS.

W. R. Belknap of Tulare has just shipped one carload of hogs to Anaheim.

Hog shippers in Imperial county have found by correspondence with Kansas City butchers that they can dispose of their hogs more profitably in the East at this time than to California packers.

STATE DAIRY COW COMPETITION.

Entry blanks for the California State Dairy Cow Competition are now ready and will be sent to dairy farmers and breeders planning to enter their cows in the competition. This will commence November 1st this year, and cows may be entered any time during the following six months, up to May 1, 1917. The competition bids fair to become an event of the greatest value to owners of dairy cattle and to dairying interests of the State in general. Complete information as to the details of the competition, including the list of prizes valued at about \$7,500 to be awarded for records of production by dairy cows and herds, will be found in Circular 153, College of Agriculture. Like entry blanks this circular will be sent free upon request. Address Prof. F. W. Woll, University Farm, Davis, Calif.

GOOD CATTLE FOR SANTA CLARA COUNTY.

One of the largest and most select importations of dairy cattle made this season is the one recently received by the Palo Alto Stock Farm in San Mateo county from Finnerne Stock Farm, New York.

Included in the lot is the bull King Pontiac Segis Korndyke, a son of King Segis De Kol Korndyke and out of the Beauty Rauwerd De Kol, whose seven-day record was 30.54 pounds butter and who has a 30-day record of 120.98 pounds butter. This young sire has a 41 pound sister, Mabel Segis Korndyke who made her record as a four-year-old and his first 12 heifers to freshen have made better than 20 pounds as two-year-olds. He will be used as herd sire at the Palo Alto ranch. Finnerne Alexis Pontiac another animal in the lot has a seven-day record of 38 pounds and a 30-day record of 135.35 pounds as a three-year old. Four other cows in the lot have records of 30 pounds or better and all of them are bred to King Segis De Kol Korndyke.

Besides the Holsteins Mr. Tichenor shipped out 20 head of imported Guernseys of May Rose and Governor the Chene breeding, all having good show records. These will be used as foundation animals. There are 202 head of purebreds on the ranch at present of which 132 are Holsteins and 70 Guernseys.

MISCELLANEOUS.

SAN FRANCISCO LIVE-STOCK EXPORT CO., Eugene B. Croley, Manager, solicits foreign orders for purebred registered and merit breeding animals and fowls. California has great diversity of climatic and other conditions that enable us to select animals that have been raised under conditions similar to those of the location for which they are intended. We should be informed regarding these conditions and be allowed ample time to make selections. Nearly all disappointments in buying afar are the result of insufficient information as to conditions or to lack of time for proper selection. Our plan and terms for "raising animals to order" to fit into peculiar foreign conditions is worth investigating. References: Dun or Bradstreets, or San Francisco banks. Office 219 Underwood Building, 525 Market St., San Francisco.

CROLEY'S Calf Feed with skim milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

D. O. LIVELY, 216 Hobart Building, San Francisco, buys and sells livestock—any kind—any quantity.

DUROCS AND GUERNSEY BULL CALVES Gilts bred to 900-lb. boar. Ed. E. Johnson, Turlock, Cal.

DOGS.

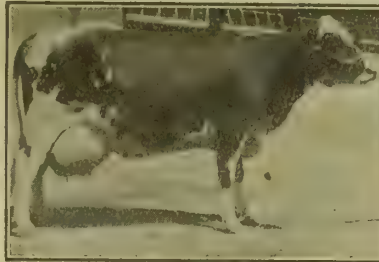
THOROUGHbred SCOTCH COLLIES—All bred from our noted prize-winners. Have a few 3 months old puppies—very choice. Write us what you want. Browndale Kennels, Redwood City, Cal.

DUROC JERSEYS

LARGEST HERD IN THE STATE. Headquarters or the best in Golden Model and Colonel breeding. Stock of all ages always for sale. Start with the best. Ranches at Holtville and Devore, San Bernardino Co.

ADDRESS: DEVORE, CALIF.
PETERS, LAMSON & WALKER

STENZEL'S HOLSTEINS
Champion Butter Fat Producers
WON FIRST AND SECOND IN THE FIVE-DAY BUTTER-FAT PRODUCTION CONTEST AT THE STATE FAIR.



Beryl Clothilde Hengerveld.

Beryl Clothilde Hengerveld's record for five days was:

351.9 lbs. Milk
21.11 " Butter
Test 4.7%

This beat by far all previous records made on State Fair Grounds.

Clothilde Pontiac Creamelle, recently at 2 yrs. 1 mo., made an official 7-day record of 22.52 lbs. butter, 391.7 lbs. milk, test 4.72%, making her **CALIFORNIA CHAMPION TWO-YEAR-OLD.**

GOOD ENOUGH FOR ANY HERD.

This youngster is half brother of the California Champion Two-Year-Old, both being sired by Dutchland Pietertje Creamelle. His dam is granddaughter of Pontiac Korndyke, the world's greatest Holstein sire, and she has a record of 28.17 lbs. butter, 456 lbs. milk, test 4.9%. This bull is perfect in type, 50% white, and just ready for service.



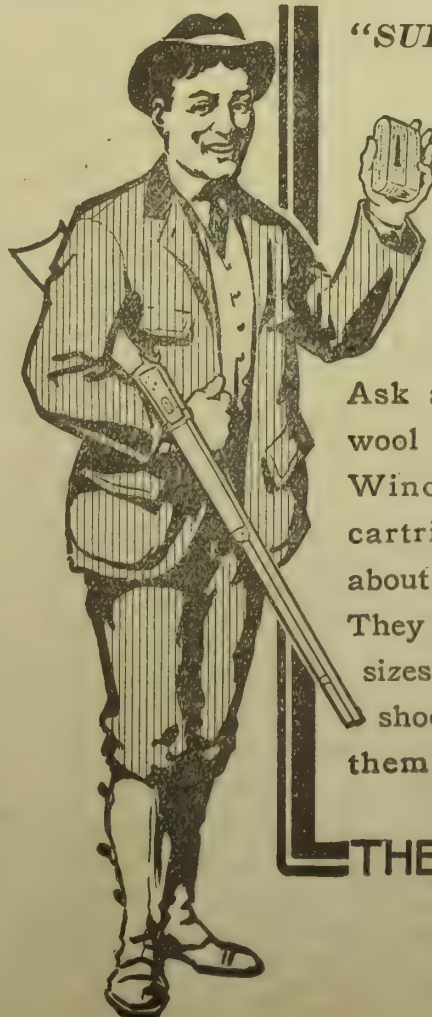
Aaggie Grace Pontiac Creamelle. Born Apr. 22, 1915.

A few other choice young bulls with butterfat breeding behind them.

F. STENZEL, Breeder of High Test Holsteins
SAN LORENZO, CALIFORNIA.

WINCHESTER

RIFLES AND CARTRIDGES



"SURE I USE 'EM!

I've been usin' 'em for a number of years and expect to continue to, as they always do the business."

Ask any dyed-in-the-wool sportsman about Winchester rifles and cartridges and that's about what he'll tell you. They are made in various sizes for all kinds of shooting and you'll get them if you ask for

THE **W** BRAND

Rio Vista Holstein Farm Sale.

[Written for Pacific Rural Press.]

California had not witnessed a dairy-cattle sale containing so many typical animals with such high records of production both for themselves and for their ancestors, as occurred at Rivera when the Rio Vista Holstein Farm herd was dispersed Sept. 19 and 20, along with a large consignment of high-record animals from McAlister & Sons.

One hundred and five head changed hands for a total of \$44,795, or an average of \$426.62 including several calves. Indeed, a spring calf was the sensation of the sale, being bought for \$2,000.

Every animal of breeding age was guaranteed a breeder, and every one of the 105 carried a tuberculin certificate issued by a Deputy State Veterinarian. Four females and three males sold at \$1,000 or over and 21 females and 5 males sold at \$500 or more.

The star of the sale, King Paul Korndyke Vale, a bull calf dropped May 25, 1916, sold for \$2,000 to a syndicate formed during the bidding and consisting of Jas. J. Jeffries, Harlan Dailey, C. W. Anderson, and W. H. Taylor. The calf is by King Korndyke Sadie Vale and out of a cow with a 7-day record of 31.42 pounds butter. Both the calf's dam and sire trace to Sadie Vale Concordia.

Heaviest Buyers.—The heaviest buyer was Jas. J. Jeffries of Burbank. He spent \$8,560 for 17 head including the bull calf mentioned and the highest priced sire of the sale, King Segis Pontiac Jannek. This bull is by King Segis Pontiac with 53 A. R. O. daughters and out of a 29.71 pound cow. Mr. Jeffries is a beginner with purebred Holsteins but expects to have one of the leading herds of the coast. W. J. Higdon of Tulare took the second highest bull for \$1,500. He is Prince Riverside Walker by Prince Gelsche Walker and out of a 28.35 pound cow.

The second largest buyer was the Pacific States Corporation of Tulare. They bought 12 head for \$6,890. These include Forest View Wayne Korndyke for \$1,180 and Whittier De Kol Homestead Rowena for \$1,100. The former has produced 27.93 lbs. butter and was bred to the \$1800 bull. The latter has records of 28.94 pounds in 7 days and 119.95 in 30 days.

A. R. Magruder of Ripon bought 11 head for \$4295 including a two-year daughter of King of the Pontiacs for \$725. Mr. Magruder also purchased for \$510, a cow whose record as a three-year-old is 25.88 lbs. butter.

A. W. Morris and Sons spent \$3940 for 9 head including \$1000 for a two-year daughter of King of the Pontiacs with records of 23.86, 28.41, 25.77, and 25.89 behind her. They also paid \$600 for a two-year daughter of King Hengerveld whose dam made 31.39 pounds. They took a year-old grandson of their Tilly Alcartra for \$550.

H. E. Vogel of Fresno bought 8 head for \$3160 including a yearling heifer out of a two-year 25-pound cow for \$515, and a 26 pound half sister to the \$1180 cow for \$500.

F. W. Hansen of Fresno bought

8 head for \$3125 including Cristeria Overton Mechthilde 4th, the highest priced cow, for \$1300. She made 31.70 pounds as a four-year-old. He also bought for \$500 a yearling heifer out of a 31.70 pound cow.

F. M. Helm of Fresno took 7 head for \$2015; W. J. Lembke of Phoenix, Ariz., 5 head for \$1855; E. P. Fay of Los Angeles 4 head for \$1600 including King Korndyke Sadie Vale 23rd for \$620; H. B. Peake of San Bernardino 4 head for \$1140; R. F. Guerin of Visalia 3 head for \$855; R. Nadeau three head including a week-old calf for \$565; C. E. Bowen two for \$525; J. Y. Oldman of Los Angeles one for \$510; McAlister & Sons one for \$505; G. H. Loughery two for \$415; Earl Sturgis, supervisor of tests on the Santa Anita Rancho, one for \$400; P. H. Krick of Anaheim, a 6-months daughter of the \$1100 cow, for \$315; E. P. Haskell of Montebello, one for \$230; G. C. Waterhouse of Chino, one for \$250; Ginn and Sons of Corcoran, one for \$200; B. F. Taylor, one for \$315; W. F. Eldridge of Corona, one for \$130.

THE FLUSHING OF EWES.

[Washington Experiment Station.]

A shortage of wool and mutton exists which is not likely to be relieved in many years. It therefore behooves those who own flocks of ewes to handle them so as to obtain maximum results, for the harvest will be rich, bountiful and enduring. It is a recognized fact that the condition of the ewe flock during breeding time is largely responsible for controlling the fertility. The condition of the ewes is a far more important factor than that of the ram. Of course, the number of ewes that one ram can serve successfully must obviously depend upon his vigor.

Flushing is the term applied to the practice of stimulating the organs of reproduction by supplying additional grain or more succulent pasture to the ewes. An insufficiency of feed retards the breeding season, and reduces the fertility.

To flush ewes, Professor Wm. Hislop recommends that they be placed in a succulent pasture and fed one-half to one pound per day of two parts oats and one part bran for ten days previous to turning the ram in with them. It is equally important that the ewes be not over fat at this time.

All the wool about the dock of the ewes should be trimmed away before mating. As a means of distinguishing the ewes that have been bred, paint the ram on the brisket with some color that will leave a mark on the wool of the ewe. At the end of 21 days the ram should be painted another color. In this manner the owner is enabled to tell whether or not the ewes are "returning."

HOGS COUGHING.

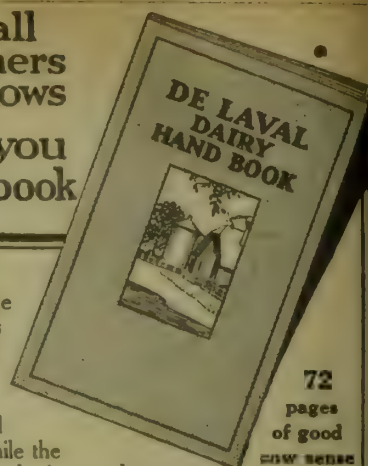
To the Editor: Some of my hogs are coughing. I have given blue-stone and turpentine with good results but is it safe, and good?—G. G., Pixley.

[Your treatment of the hogs is all right provided it is not carried too far.]

FREE

to all owners of cows

If you keep cows you ought to write for this book



THIS book was written for the man with only two cows just as much as for the man with twenty. In it has been gathered together a great fund of valuable information on subjects which are of vital interest to every cow owner. And while the various phases of dairying are treated by the best and highest authorities, it is not a technical treatise but is written in plain every-day language so that even the children can understand it.

Here are just a few topics that will give you an idea of the practical nature of its contents:

"How a Dairyman Made Good"—a real story of a real farmer, who starting with almost nothing, built up a fine dairy herd and made a big success.

"Year Around Feeding of Dairy Cows"—by an authority whose advice is well worth heeding. The importance of proper feeding deserves more attention from every cow owner.

"How to Judge a Dairy Cow."—shows by illustrations what points to look for in a dairy producer—explains the essential qualifications of a good dairy cow.

"Building Up a Dairy Herd"—a practical breeder gives some sound advice on this important subject.

"The Farm that Won't Wear Out"—shows that the farm where cows are kept, and the fertility returned to the soil, improves instead of deteriorates.

"The Care of Cream on the Farm"—quality is as important as quantity. It costs little and brings big returns.

"Silos and Silage"—one of the best chapters in the book. Full of silage facts that every farmer ought to know.

Then there are splendid articles on "Alfalfa," "Ventilation of Dairy Barns," "Breeds of Dairy Cattle," "Improving the Herd with a Good Bull," "Care of Freshening Cows," "How to Test Cows," etc. Numerous dairy rations, suitable for various sections of the country, are given, and various milk and dairy tables as well as tables of weights and measures, silo capacities, etc. that every farmer has occasion, at some time or other, to refer to.

Thousands of dollars have been spent in the preparation of this book, and if you keep cows you certainly ought to write for a copy and read it from cover to cover. The book is absolutely free. Just fill out the coupon or send the information requested on a post card, mentioning this paper.

The De Laval Separator Co., 165 Broadway, New York

Please mail me, postage free, a copy of your New Dairy Handbook. I keep _____ cows I sell cream, make butter, sell milk (cross out whichever you don't do). The make of my

Separator is _____ used _____ years

Name _____

Town _____ State _____ RFD _____

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RIVERINA LADDIE 5th, Grand Champion Boar, Sacramento, 1916.

Riverina Yorkshires

CHAMPIONSHIP HERD AT P. P. I. E. WINS AGAIN AT SACRAMENTO.

Grand Champion Boar, Grand Champion Sow, Champion Boar and Sow bred by Exhibitor.

10 Firsts, 7 Seconds, SERVICE BOARS.

SPRING BOARS AND GLTS.

Special Offer On glts bred to farrow in October and November.

RIVERINA FARMS Paradise Road, Modesto, Cal.

Rambouillets

1800 YEARLING RAMS AND 1000 EWES.

These sheep are purebred, large and smooth, with heavy fleeces of fine, long, staple, white wool. Individuals or carload lots.

Prices reasonable.

Correspondence solicited.

CHAS. A. KIMBLE, HANFORD, CAL. Breeder and Importer.

Tamworths and Duroc-Jerseys

We can fill orders for mature stock and weanling pigs of both sexes. This is the largest herd of TAMWORTHS in the State. Our Stock is sure to please.

Write or call and see us.

SWINELAND FARM.

W. O. PEARSON, Prop.

Woodland, California.

BLAKE, MOFFITT & TOWNE

Dealers 37 FIRST ST. SAN FRANCISCO
Blake, Moffitt & Towne, Los Angeles
PAPER Blake, McFall & Co., Portland, Oregon

BLACK LEG LOSSES SURELY PREVENTED by CUTTER'S BLACKLEG PILLS

Low-priced, fresh, reliable, preferred by western stockmen, because they protect where other vaccines fail.

Write for booklet and testimonials.

50-dose pkg. Blackleg Pills, \$1.00
100-dose pkg. Blackleg Pills, \$4.00

Use an injector, but Cutter's simplest and strongest. The superiority of Cutter products is due to over 15 years of specializing in VACCINES AND SERUMS ONLY. INSIST ON CUTTER'S. If unobtainable, order direct.

The Cutter Laboratory, Berkeley, California

Methods vs. Location in Breeding Hogs.

[Written for Pacific Rural Press.]

In the southern part of San Joaquin county, you may find a 2,000-acre grain ranch, 20 miles from Stockton, the nearest large town, with but 10 acres seeded to alfalfa; and that none too productive—certainly not the most ideal location for a purebred swine breeding establishment; yet, despite the unfavorable location, Knob Hill Stock

The third season is stubble season, the hogs now putting hard flesh on the large frames they have formerly developed from breeding and exercise. At times when a field of barley is poor that also is hogged off during the fall months. In December green feed is again available.

This is how Knob Hill Polands are fed and raised. It also accounts



He Tries to Produce a Larger Hog than the Average Poland-China.

Farm Poland Chinas are known the entire length and breadth of the State.

Why this should be true is best demonstrated by a visit to the ranch. If you are looking for frills and fancies you'll be disappointed, for A. M. Henry raises hogs with "horse sense." He believes a home-made affair that is warm, dry, and well ventilated answers the purpose just as well as expensive quarters.

And so you find the brood sows and pigs in large roomy lots on the side of a hill with a home-made house in each lot, large enough to accommodate a sow and her litter. Water and feed trough comprise the other equipment with exception of a concrete-lined wallow, which is provided with water from the kitchen sink. In this wallow also you see the practical rather than the beautification idea, they having been made by shoveling out a shallow hole in the ground and lining it with cement. So also is the ditch that connects the wallows one with another, furnishing an outlet for the surplus water so that it may run through the entire chain of wallows and thus furnish a running stream.

But Mr. Henry isn't much of a believer in housing hogs under his conditions. He is a crank on good heavy bone; and while he can and does breed this into his herd by the judicious selection of herd sires, the development of it comes through exercise over the hill pastures and stubble fields.

Probably few breeders are so well situated to give their hogs this bone and muscle building range as is Mr. Henry; for it is only during the short interval between the middle of May and grain harvesting that he does not have pasture for the hogs to run on.

This is accomplished by dividing the year into three seasons; the first one being between December and the middle of May when the herd is run on either wild green feed or on fields that have been especially planted for them, this being governed by the season. The second season is the farrowing season, the hogs now being taken up to be fed till harvest time and the sows to farrow their litters. Good feeding is practiced at this time; a combination of oat screenings, wheat, Egyptian corn or broom corn, some bran and tankage, together with charcoal and salt at all times.

may develop into a big hog quickly, he must have a good coat of hair, stand well up on his feet. We quote his experience in breeding toward his ideal:

By selection, I tried to produce a hog with more size and at the same time a higher degree of quality than the average large type Poland China. I always felt that the most profitable hog for our market was the one that could be made to weigh 150 pounds on the least feed and do it the quickest. Many of the large type Polands were too narrow, too much bone for the amount of meat the bone was to carry, a generally coarse appearance that goes with expensive feeding, and a lack of the style and beauty that goes with what the judges speak of as quality.

At six months of age they would weigh much more than the medium types at the same age, but they were not choice meat. It makes no difference whether a breeder is raising for the pork market or the show ring, he has to produce something that will make good pork or producers of good pork hogs.

By selecting those of best conformation and prolificacy I have endeavored to get a hog with great size and a high degree of quality. I have sows in my herd running in the fields that have as good coats of hair, as broad backs, and as good conformation as I ever had while raising the medium types.

It is not so easy to raise a hog with an arched back when that hog is six feet long as it is when the hog

is four feet long. So it is necessary when raising for breeding purposes to select those of such good backs that you may expect the offspring to be good in this particular.

Too much daylight underneath the hog is objectionable, and the careful farmer will attend to this matter when selecting his breeding stock. The hams are the highest priced meats that are cured and so a ham that is broad and extending well down to the hock makes an animal more valuable than one faulty in this particular.

Now the fact that he raises good hogs would not entirely overcome the disadvantages of Mr. Henry's location if it were not for his advertising and his showing at the State Fairs, where he has been able to sustain a commanding position in the show ring for the past five years. But even there the winning of prizes is based primarily on the ability of the breeder and not on his location.

While one of the hardiest of trees, and most resistant to disease, the fig tree will sooner or later show the results of neglect. Lack of attention, cultivation, fertilization, and irrigation of fig trees in the San Joaquin valley has resulted in a decrease of vitality or loss of foliage in a great many of the fig orchards, and border or line trees. So says R. J. Hammond of the Hammond Packing Co.

How long since you have examined your roofs?

Are they in condition to withstand another winter's storms?

A leaky roof is a most annoying and a mighty expensive proposition.

You can avoid this annoyance and save the expense by covering your roofs with

• MALTHOID JUNIOR

"The Right Roofing at the Right Price"

MALTHOID JUNIOR is the result of more than 30 years of successful experience in the manufacture of roofing. From this long experience we have learned the weight and quality of roofing best suited for all purposes, hence MALTHOID JUNIOR is made in only one quality, one weight, and sells at one price—



Don't ask for Roofing
ask for
**MALTHOID JUNIOR
ROOFING**

Sold at Lumber Yards, Hardware
and General Stores



THE PARAFFINE PAINT CO.

SAN FRANCISCO

Mills and Factories at OAKLAND, LOS ANGELES, ANTIOCH, CAL., SUMNER, WASH.

Manufacturers of Pabco Paint for Roofs
Amiwood Wall Board and P & B Products

Raising Poultry for Profit

SEASONABLE ITEMS FOR THE POULTRY YARD.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

Not all those who have good poultry were able to show at the State Fair, but almost anyone, with a little effort, can manage to enter something, or let the boys and girls try, at some nearby local show. There is nothing so encouraging to either young or old than to win a blue ribbon on something they have raised and cared for. The object of the poultry show is to educate the farmer and his family, and the people in general, into knowing what they should look for in birds of quality.

Look the flock over and if you think there are any specimens good enough to show, commence right away to put them in condition for some local show. Getting them in condition does not mean piling a lot of fat on them, but it does mean to put them where there are not a lot of others to eat all the feed you give them; and in case of male birds there should not be more than one in a place for fear they should fight and break feathers. It is immaterial, at this time of year, for the fowls to have all new perfect feathers because the molt is taken into consideration; but all feathers that are on the bird must be whole, from tip to stem, or the judge will not know but that the broken end had been off color.

After you have selected your specimens, look them over well for such defects as "side sprigs." These are abnormal growths on the original comb and very often grow on one or both sides of the comb, and are disqualifications. If you have smooth-legged varieties, look the

legs over well and be sure to put your glasses on to look for what are called "stubs." These are the appearance of feathers on the leg. In some breeds they revert back to the feather-legged ancestors; and on smooth-legged birds these stubs are disqualifying marks. Black feathers in white birds are also disqualifying as are white feathers in black birds. Wry tails, deformed breasts, twisted backs, five toes on four-toed varieties, and four toes where there should be five are disqualifying marks. The Houdan, Crevicouer, and Dorking are all five-toed varieties; all other breeds have four toes. A bird is in "condition," when the breast meat is level with the breast bone. If a fowl in this condition of flesh has good color, good carriage or shape, type, good head points and is clean, feathers glossy and legs clean and free from dirt underneath the scales, it stands a mighty good chance at a show. My telling you these things will not exactly make a fancier out of you, but if you have some good stock that you think comes near being a possible winner, it may start you on the road. The fancier has to be born, in a way, yet he can be educated to it if he is a lover of birds, and it is the cleanest and best sport in the world, if you don't get money mad over it.

Getting the Ducks in Laying Shape.—April hatched ducks should be about ready to lay now and if they are gotten in good shape will lay a lot of eggs, but in order to do so they must be fed right. Grain is not a proper feed for ducks, as they have no gizzard to grind grain, and need soft feed. I know that many people do feed grain, but it is always fed at a loss, for the duck does not masticate or grind it, consequently gets but little nourishment from it. I will give a good mash for laying ducks, but the ducks that are to be kept for breeding purposes should not be forced to lay yet; they are better left on range for another month or six weeks. Feed your layers a mash twice a day and if there is no green feed give sprouted oats at noon: one part bran, one part middlings, one part cornmeal, one part cut alfalfa, five per cent beef scrap, five per cent fine ground bone meal, and two per cent small grit and oyster shell. Mix all together with milk or water into a crumbly condition, not wet.

This mash may be fed in troughs or on boards. If the ducks get to laying heavy, increase the cornmeal and the beefscrap to help keep them in condition; but do not feed too heavily at first or they may get too fat. It requires good judgment to feed ducks just right and get the best out of them, but it can be done.

The poultry building on the Kings County Fair grounds has been torn down and a new one will be completed before the fair opens Oct. 2.

"Don't eat poultry the day it is killed" is the advice of Arizona College of Agriculture. Unless allowed to cool at least over night in a ventilated place, it will have a chickeny barnyard flavor, and the meat will be tough.

Poultry Breeders' Directory.

BARRED PLYMOUTH ROCKS.—The kind that Win and Lay. Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for catalog showing winnings at California's leading shows. Chas. H. Vodden, Box 396, Los Gatos, Cal.

INCUBATOR CHICKS.—Thoroughbred White Plymouth Rock, \$25.00 per hundred; White Leghorn, \$12.50 per hundred. Highest class of stock bred to standard and to lay. Awarded all first prizes at California State Fair 1916. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

BABY CHICKS NOW READY.—Hatches every week. Write for special "Fall Chick" circular. See why Fall chicks pay. R. I. Reds, Barred Rocks, Black Minorcas, White and Brown Leghorns. Campbell Poultry Ranch, Campbell, Cal.

CROLEY'S DRY MIXED INFANT CHICK FEEDS for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by GEO. H. CROLEY CO., Inc., Poultry Supplies, San Francisco.

THE SANTA CLARA VALLEY HATCHERY solicits your orders for Fall and Spring delivery in 8 breeds of baby chicks. Order early and get the best. Jos. A. Bihn, Lincoln Ave., San Jose, Cal.

1000 BARRED ROCK, B. I. Red Baby Chicks. How many do you want? Price and quality will suit. Rootden Poultry Ranch, Campbell, Cal.

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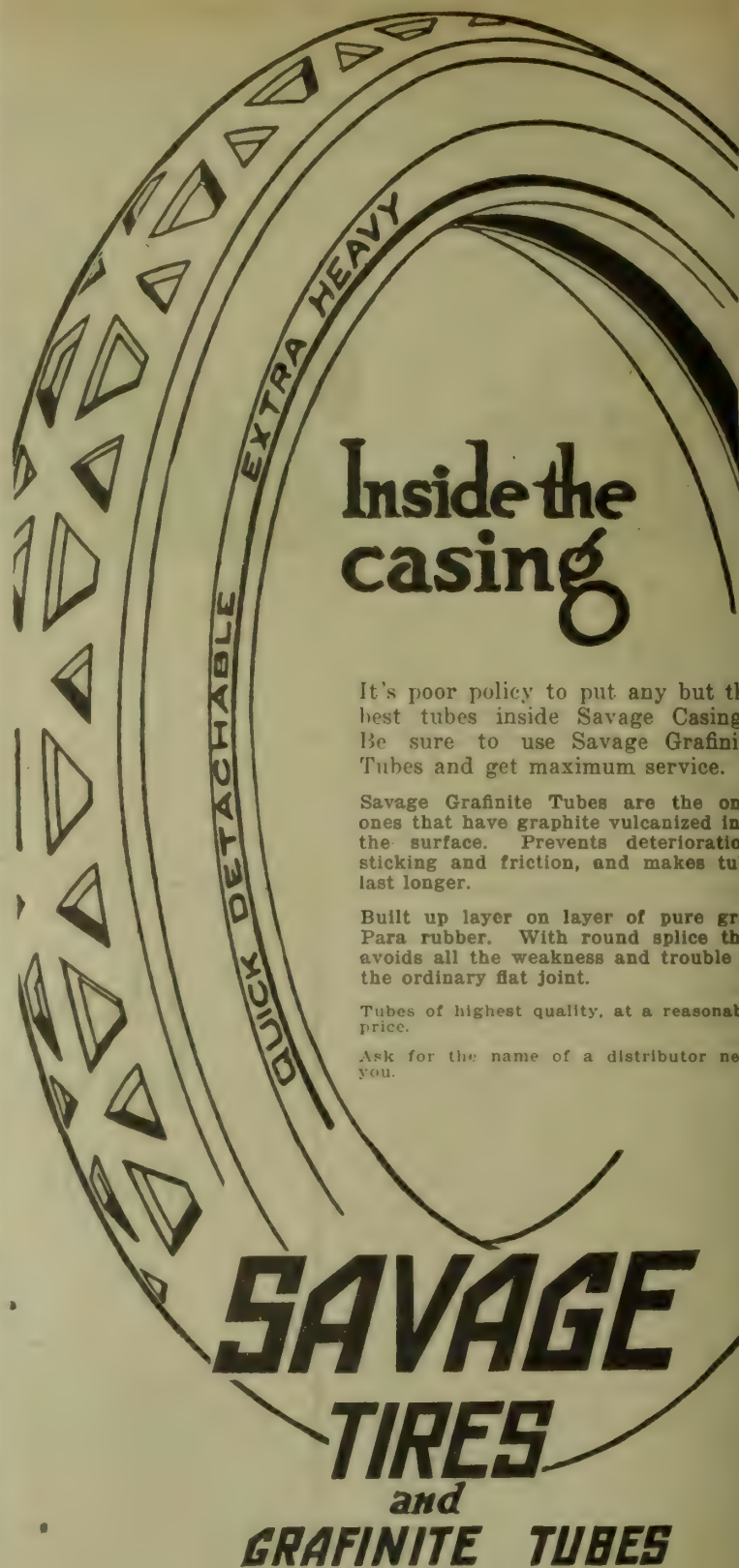
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State Poultry Show.

The second annual show of the California State Poultry Breeders' Association will be held at Modesto, Dec. 6 to 9 inclusive. Entries close Nov. 28. C. G. Hinds, W. S. Russell and H. A. Currier will do the judging, which will be by score card. Entry fee will be \$1 for each bird and \$4 for each exhibition pen.

In the premium list issued, the following points for exhibitors are given:

Watch out for down or feathers on shanks of feet of all clean leg varieties and between toes.

See that your Langshans are well feathered on their outer toes beyond the first joint.

Do not show birds of single comb varieties with side-sprigs on their combs.

See that the rose-comb varieties have well defined "spike" at end of combs.

Do not exhibit black birds with white or gray in plumage. White will disqualify "black" birds and

black will disqualify "white" birds. Weigh the bantams and see that they are not overweight. Bantams are prized for their "smallness."

Be sure and read your American Standard of Perfection before entering each variety.

Do not send a sick fowl to the show. See that the birds are healthy.

Wash your white fowls about two days before you ship them to the show.

Clean up the legs of your fowls before shipping them. Use sweet oil and sulphur on the yellow-leg varieties and sweet oil without the sulphur on the black or white-leg varieties.

Soap and warm water will clean legs so that they will not be cut in the show room, if you take them in time. After washing apply oil and sulphur.

All birds will be weighed before judging. Be sure and have your bird up to standard weight.

Have leg bands on all of your birds. You save the secretary a lot of worry if you send your birds banded correctly.

WHAT 150 HENS EARNED.

[Written for Pacific Rural Press.]

When Chas. E. Edmondson of Tulare county began keeping books on his 150 hens October 1, 1915, it was with the intention of learning what they were costing him, and what they were paying him for his labor.

Alfalfa and other home supplied feeds were not taken account of because they would have been largely waste anyway, so the only charge for feed was \$98 that was paid for a load of corn.

For the 11 months ending August 1, his books showed the following receipts: Eggs sold to Tulare Co-Operative Poultry Association, \$279.91; 100 pullets raised at \$.50 each, \$50.00; poultry and eggs consumed at home, \$25. Total income \$354.91. Total net income \$256.91.

VALUE OF DUCKLINGS.

To the Editor: What is the value of white Indian Runner ducks about two months old, full feathered, from a very good egg-laying strain?—Mrs. R. D. K., Richfield.

[Answered by Geo. H. Croley.]

[Good quality purebred white Indian Runner ducklings two months old, intended for breeding, should be worth 50c to \$1 each in lots of not less than a dozen. Their value is greatly influenced by the feed and care they have received, as well as by the strain they are from. There is no way to tell how many are drakes until the curl feathers come.]

DAIRY WITH POULTRY.

While specialization with poultry has been one of the chief features of agricultural development in the Petaluma district of Sonoma county, dairying has played no small part in connection with poultry in the outlying sections where land values are not so high as to be prohibitive.

It is on such land in the Two Rock district that the ranch of Norman B. Hunter is located on which modern buildings have been erected and a purebred herd of Jerseys established.

Like most of the ranches in that district the Hunter ranch of 50 acres is quite hilly and for that reason cannot well be irrigated. But the soil is a fine black loam which retains moisture well and grows bounteous crops of grain hay and root crops; also fairly good crops of corn and vetch; and it is with this combination of crops that Mr. Hunter expects to be able to keep a moderate-sized herd of cows in connection with several hundred chickens.

As the nature and size of the ranch limits its carrying capacity the policy will be to maintain only the choicest of cows and it was with this intention that a number of purebred heifers were purchased last spring as well as a registered bull.

At the time of the writer's visit early in the summer, work was about completed on a modern dairy barn, and sanitary hog houses will be erected later, as hogs are to be a by-product of the dairy.

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525 MARKET STREET,

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Mrs. Best's Letter.

My dear Friends:

I hope all of you who have daughters to dress for school will provide them with one of the pretty dark blue serges that are so popular just now. Most of them are made of a soft finish serge and are good style for street or church wear as well as school. The prevailing style is very loose, absolutely no waist line, except a loose belt or sash that is more of a trimming than anything else.

These dresses have pleated skirts and in some instances the pleats run up into a yoke almost like an old-fashioned Mother Hubbard. But the newest touch is the large pocket set on either side of the skirt and this is almost always beaded or embroidered in wool yarns.

One very attractive model had a pleated skirt with fancy pockets set onto an under waist and the waist itself was an Eton jacket, fastening across the shoulder and under the arm. The pockets were beaded in glass beads of two colors and the same design was worked out on the front of the waist.

The sleeves of all of them are long, reasonably loose at the top and pretty well fitted into the arm from the elbow down, ending in a little flare or point at the back. One of the very good stores is showing Peter Thompson dresses again, made exactly as the girls wore them nine or ten years ago, pleated skirts, sailor waists with large collars and emblems in colors, with the band of red around the sleeve. It seems like welcoming an old friend to see them again.

Most of these dresses are simple enough to be made at home and you can easily make one for half the price of the ready made ones. The popularity of the beading and embroidery gives the woman clever with her fingers an opportunity to develop her own designs or copy an expensive model.

If you have a suit, either silk or wool, that needs a little fixing up, try using fur on it. You can buy either narrow or wide strips by the yard, in moleskin, skunk, beaver, near seal and other furs and you will find that it goes a long way toward making a wool garment look new style and a silk garment look seasonable. A very good dressmaker told me she was putting fur on the taffeta suits she had made for her customers in the summer and they would wear them on into the winter. This fur ranges from \$1.50 a yard to as high as you wish to pay.

There is a new blouse on the market, made with a peplum or tunic to be worn on the outside of the skirt. These are made of crepe or chiffon, or light weight silk embroidered in gold or silver thread and are confined at the waist by a sash effect. They seem more suitable for wear with a separate skirt of silk than with a tailored suit. Nearly all the better blouses are open at the throat, only the strictly tailored waist having a high neck. Yours devotedly,

Rosabella Best.

For greasing bread pans, use a five-cent paint brush. Cut a hole in the cover of the can in which the grease is kept, in which to place the brush.

THE HOME CIRCLE

TO MAKE SAUERKRAUT.

Use one to three quarts salt to twenty gallons shredded slaw. Remove outside leaves and hard core of cabbage. Shred finely. Line the keg with the larger leaves on the bottom and sides as you fill it. Put in a three-inch layer of shredded cabbage and sprinkle with four or five tablespoonfuls salt. Continue to repeat this process, lining with the large leaves. Pound it all down well until the cask is full and covered with the brine. Cover with the large leaves and a board cover to fit inside the cask. Weight this cover down, as it is necessary that all the cabbage be covered with brine at all times. Keep in a cool dry place three weeks to a month. If the weather is warm, the kraut will cure in sixteen to eighteen days, when it is ready for use or canning.

DRY CLEANING AT HOME.

Crepe-de-chine blouses can be beautifully cleaned at home by washing in either gasoline or benzine. Use a large pan and enough fluid that you can rinse up and down freely. If the garment is much soiled, a rinsing in a pan of clean gasoline will improve it, but the results will be better if the garment is not allowed to become too dirty before cleaning.

But bear in mind that gasoline is very explosive, and never work with an open pan of it anywhere but in the open air. Even after the garment is dry, if it is still giving off gasoline odors, do not take it into a room with a fire or put into a closet. Serious fires are often started in households by the lighting of a match in a closet full of gasoline vapors. The odor of gasoline in any room is a danger signal.

TO CRISP LETTUCE.

Wash the lettuce well and shake—then pack closely into a pail that has a cover. When covered, put into a cool place and let stand several hours—it will be as crisp and fresh as though taken from the ice.

HOT SLAW.

Take one-third cup of vinegar, one egg, small lump of butter, pepper and salt. Heat and stir in finely chopped cabbage. Let stand for five minutes and serve hot.—L. C. W., Hanford.

CANNING WINDFALL APPLES.

All apple growers should be interested in the following new recipes for utilizing the windfalls and culls of an orchard. These deal with canning the apples whole, sliced for pie filling and quartered for fruit salads.

Apples for Pie Filling.—Wash, core and pare and slice into a basin of slightly salted water to keep from

discoloring. Pack into jars and add one cupful of thin sirup to each quart of fruit. Place in hot-water bath partially sealed for 12 minutes, then remove and finish sealing and invert. In using these apples for pies, pour off the sirup and proceed as with fresh apples, but being already cooked, the pie can be baked in less time.

For canning whole apples.—Wash and remove core and blanch in boiling hot water for two minutes. Plunge quickly into cold water. Pack in large empty glass jars and pour over a hot thin sirup. Place rubber and cap on and partially seal. For half-gallon jars, 20 minutes in boiling hot water is sufficient—these jars must rest on a perforated platform in the receptacle and the water must circulate freely around them and cover the top at least one inch. Count the time as soon as the water begins to "jump" over the surface. Remove and tighten covers and invert.

Quartered Apples for Fruit Salads.—Core, pare and quarter, pack in jars and proceed as in the sliced apples.

FASHION NOTES.

Beaded garnitures are much in evidence on dressy evening garments. The large ostrich feather fan in vivid colorings is shown in the good shops.

Circular collars in cape shape are seen of batiste, satin and beaded net.

Gold and silver embroidered laces are having a great vogue.

Wool challie in striking Oriental patterns is shown at one of the good stores.

Silk bags made of black and heavily beaded with steel beads show a lining of fancy flowered silk.

One of the new imported hatpins has the head the shape of a plum leaf, made of jet beads with a design in the center of colored beads.

Children's coats of bright colors have collar and cuffs bordered with narrow bands of fur.

HOUSEHOLD HINTS.

For softening brown sugar that has become lumpy, when kept any length of time, fill the tea kettle with boiling water and put the sugar in a pan, placing it over the teakettle to steam.

A square box that runs on casters makes a good stand for the washtub and can be easily moved from stove to sink, thus facilitating the filling of the tubs.

To wash brushes and combs, put a teaspoonful of ammonia in a basin of hot water and dip the brush up and down in it, letting the comb remain in the water for a few minutes. Rinse with clear water.

GERMAN APPLE CAKE.

One cup sour milk, 1 pint flour, 1 teaspoon soda, 1 egg, 2 table-spoons sugar, 1 teaspoon salt. Mix into soft dough and spread ½ inch thick in a large pan well greased. Pare and core 5 juicy apples, cut each into eight pieces, arrange on dough and sprinkle with sugar, cinnamon and nutmeg and bits of butter. Bake 25 minutes.

THERE'S ALWAYS SOMEONE WORSE OFF THAN YOU.

By M. P. Earl.

It isn't right to feel that way, It's very selfish, some folks say, Perhaps it's true; But on the whole, it's apt to pay To think there's someone, every day Worse off than you.

You get that feeling of despair, When something looks to you, less fair,

You know you do; You think there's no one, anywhere, With such a heavy load of care And toil as you.

And if you've little cash to spend, You think you haven't got a friend, When feeling "blue", But such a thought will quickly end You'll see it's foolish to pretend That such is true.

If you'll but let your thoughts all go To other people whom you know, There's quite a few, You'll find, in life, both high and low, Who have of sorrow, toil and woe, Much more than you.

It seems to make the sky more bright, And seems to make the load feel light,

Old things look new, So I believe it's only right To think, there's someone, day and night, Worse off than you.

WHEN GRANDMA RODE THE RUNNER.

Little grandma twisted restlessly. Not because she was cold. How could she be in quilted hood and homespun cloak, woollen mittens and stockings,—and buried, too, beneath wolfskins?

But she had sleighed all day, and was tired of sitting still. It was a long way to Great-aunt Ellen's.

"Mother," begged little grandma, "may I ride the runner?"

"Of course not," said great-grand-mamma promptly.

"I'll hold on tight."

"Don't mention it again," said great-grandmamma.

With a sigh, little grandma snuggled under the robes.

They were mounting Hardscrabble Hill, and Billy stopped to rest. Great-grandmamma laid the sleeping baby among the furs, and climbed to the front seat beside great-grand-papa.

Little grandma kept wanting to ride that runner. Next time Billy stopped for breath she slipped noiselessly from the sleigh and around to the back. She stood on the broad runner, and grasped the top of the sleigh with both mittens.

It was the end of the hill, and Billy started briskly. The runner struck a rut of a crossroad. Little grandma's feet bounced into the air, her hands were torn from their hold, and she was flung off into a drift. She lay half-stunned by the fall. After a while she picked herself up. The deep snowdrift was soft, and her heavy clothing saved her anything worse than the bump. The sleigh jingled out of hearing. Dazed from the fall, little grandma, instead of keeping straight ahead, turned down the cross-road. She listened for sleigh-bells, and heard a sound faint and musical. She hurried on, but it was only a boy drumming his milk-pail.

"Have you seen my sleigh drive by?" cried little grandma, hope-fully.

"Nobody's been by," answered the boy, staring, as well he might, at the little girl, alone, at the edge of the evening, on that dim road through the forest.

Little grandma sat flat down on the snow and cried. She knew she was lost.

"Mother!" shouted the boy, and ran to the house.

His mother came and let little grandma in. She sobbed out her story.

"There, there!" the boy's mother comforted. "We'll take you to your Aunt Ellen's. 'Tisn't far. I wish the horses were here so we could take you now, because your mother will worry."

"I can carry her," interrupted the boy, "with Star! If I go the short cut through the woods, we'll be there most as soon as her mother."

"It's nearly night, John," his mother hesitated, "and Star is so slow. It will be dark before you get home."

"I'm not afraid," said John, sturdily, and was off to the barn.

He came back in a tinkle of bells, driving Star.

"Why! It's a cow!" cried little grandma in astonishment. John laughed proudly.

"Trained her myself," he said as they tucked themselves into a mite of a sleigh.

"She's a year and a half old. Father gave her to me when she was a calf, and I broke her. Get up, Star!" He took the reins, and the heifer started obediently.

"She's slow, but safe. There's a wagon for summer. Star's broken to saddle, too."

"How old are you?" asked little grandma, respectfully.

"Nine," said John.

"Was she hard to teach?"

"It took quite a while. I never used whip or goad. Just coaxed her with apples and maple sugar."

Little grandma wasn't missed from the big sleigh. Her mother glanced back often to make sure the baby was all right, and, when she didn't see little grandma, supposed her cuddled under the robes to keep warm. At Great-aunt Ellen's everybody trooped out to greet them, so many that in the confusion one little girl more or less didn't count.

"Why didn't you bring one of the other children, too?" Great-aunt Ellen asked, hugging the baby.

"I did," answered great-grand-mamma, surprised. "Haven't you seen her?"

Then it was discovered that no-

body had seen her.

"She must be in the sleigh, asleep!"

Her father lighted a lantern, and went to the barn. He shook each robe. He searched under both seats. When he came in, he looked pale.

"She isn't there!" he cried.

Then every one was frightened.

"Could she have fallen out?"

Tinkling bells brought them to the door.

"Oh! She's there! She's found!"

cried little grandma's mother joyfully, the first to see her, and thanked John over and over for bringing her.

"I'll never, never ride a runner again!" promised remorseful little grandma, gratefully feeding Star a big lump of maple sugar.

John's pockets were filled with apples for himself, and then John and Star jingled merrily home down the dark woods road.—Alice Mary Farrington, in Sunday School Times.

Good Health.

[By H. E. Pastor, M. D.]

Value of Rural Health.

Senator Joseph E. Ransdell of Louisiana, in a recent address before the U. S. Senate, said the greatest asset which our country can have is the healthy American citizen. Valuable as it may be to increase the health of livestock and vegetation, it is of far greater importance that we throw every possible safeguard about the health of the man who is responsible for that livestock and vegetation, and for whom that livestock and vegetation are grown. Let not consideration for the means to an end outweigh the end itself.

How Infantile Paralysis is Spread.

Dr. Geo. H. Whipple, Professor of Research Medicine of the Univ. of Calif., speaking of infantile paralysis, says: "The infection may be spread by either moist or dry secretions from the nose and throat of those suffering from the disease. Flies may carry the virus to food or to people, but it is mainly human beings who spread the disease. The patients are ordinarily not infectious for more than four to six weeks, but some of the victims of the disease remain carriers after they are entirely cured." He advises disinfection of the clothing of all who have had the disease.

Polluted River Water.

A writer in the Monthly Bulletin of the Calif. State Board of Health says: "We wish some one would estimate the average cost of drinking the untreated water of the lower San Joaquin and Sacramento rivers. The cost would be high in shortening of life, loss of time through sickness, and loss of money through hospital and physicians' bills." A number of severe cases of typhoid, with some deaths, have been reported to the Board.

Meat-Eating and Appendicitis.

A writer in the International Journal of Surgery contends that the increased consumption of meat among the working classes is accountable for the greater frequency of appendicitis in England and the United States. The same observation has been made in Germany,

where rising wages have enabled the town classes to buy meat more freely. Acute cases of appendicitis are comparatively rare among Oriental peoples, who subsist largely on rice and other vegetable products. There can be little doubt that animal foods are more apt to set up digestive disturbances and putrefactive processes than vegetable foods, and these conditions predispose to appendicitis.

Vacations Not Time Wasted.

The advantages of an outdoor vacation are twofold, and not the least is the mental effect of a complete change of scene and occupation. There is nothing more depressing to the spirit than a changeless routine of duties and environment running into weeks, months, and even years. A person tied up to such a routine necessarily becomes inattentive, listless, stupid, and uninteresting, for there are no new objects to enlist the interest of the observing faculties. California is a State of infinite variety of landscape, climate, and industrial pursuits; no other State can measure up to it in this respect. If your abode is in the mountains, shut in as it is by high walls of eternal granite, visit some spot on the long line of California's seashore, with its illimitable vista of restless waters; if you live somewhere on the sweltering plains of the hot interior valleys, come to the coast and cool off. On the other hand, if you live in the coast region, hie to the interior, and give your overstrung nervous system the sedative effect of the soothing warmth and lulling quietude of the inland resorts. Pick out whatever you want, but want something in the nature of an annual outing, and get it. Vacations pay; they pay in reinvigorated health, and thus save doctor bills, and give you something new to think and talk about.

A large number of diphtheretic cases were reported last month as resulting from the use of unpasteurized milk.

THE WRONG WAY TO BUY A RANGE

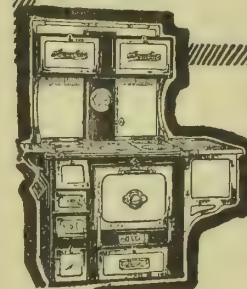
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- + easy price
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Dealers everywhere. Our 80th year. A. J. TOWER CO. BOSTON



THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

San Francisco, Sept. 27, 1916.

Wheat.

There is lively demand for spot wheat of all varieties in the local market, and an upward tendency has been noted, but an easier feeling at Eastern speculative centers has prevented any quotable advance.

[f. o. b. San Francisco.]

Sonora wheat\$2.15@2.20
Northern club2.15@2.20
Calif. club, ctt.2.10@2.20
Northern Bluestem2.35@2.40
Northern Red2.20@2.40

Barley.

Prices are unchanged. The spot grain is in good demand, both locally and for shipment, and several foreign cargoes are going out.

[f. o. b. San Francisco.]

Shipping, ctt.\$1.75 @1.80
Choice feed, ctt.1.67½ @1.70

Oats.

Seed oats continue quite strong, with an active movement of most varieties. The local demand for feed is about normal at unchanged prices.
Red feed\$1.80@1.85
Red seed2.00@2.10
White1.75@1.80
Black seed3.00@3.25
Texas Red seed2.25@2.35

Corn.

Eastern yellow is moving at about the usual rate, the principal business being with milling interests. California yellow is out of the market. Some new Egyptian is arriving, causing a drop in the old-crop quotations; but the new grain is not yet well enough cured to be very attractive to dealers.

Eastern Yellow, ctt.\$2.10@2.15
Milo MaizeNominal
Egyptian, old crop,1.75@1.80

Beans.

Contradicting recent reports from the country local dealers state that there has seldom been a smaller proportion of the new crop under contract at this time of year than now. This applies to all varieties, but especially to whites. Owing to the cleanup of old small whites, buyers were anxious to buy for September delivery, and the small amount available was taken at \$7; and similar conditions have temporarily forced new large whites to \$6.50. This means an advance of at least 50c to the Eastern buyer, who cannot be persuaded to take much stock at such prices; and local dealers are holding off, being confident that prices will get down to normal as soon as new crop is harvested. The Michigan crop at present promises to be quite large, and the outlook is favorable for a large output of all kinds in California.

[On wharf, San Francisco.]

Bayos, per ctt.\$4.75@5.00
Blackeyes3.50@3.60
Cranberry beans5.00@5.20
Horse beans3.25@3.50
Small Whites (south) new crop7.00
Large Whites, new crop6.00@6.50
Pinks5.50@5.75
Limas (south)5.30@5.40
Red Kidney6.50
Mexican Reds5.25@5.45
Tepary beans4.25@4.50

Seeds.

Alfalfa is getting a little easier, with increasing offerings, several other lines also are coming forward more freely. Demand also is increasing. This will be an unusually good season for cover crop seeds.

[Wholesale prices, S. F.]

Alfalfa, per lb20@22 c
Oregon Vetch4½ @5 c
Mellilotus Indica7½ c
Mellilotus Alba20 c
Bur clover, reseeded10½ c
Canada Field Peas5½ c

Hay.

Supplies continue to come in slowly, and mainly by river route. Dealers say that there was considerable damage to hay remaining in the fields, of which there is said to be still a good deal at points depending on rail transportation. It is doubtful, however, if there has been enough damage to affect market appreciably. Most hay is believed to be under cover by this time, and such as remains in growers' hands is as a rule pretty steadily held, as the winter is sure to bring a large consuming demand through the country, as well as in city markets. Alfalfa is coming into this market more freely and ordinary lots are easier.

[Wholesale prices per ton, carload lots, San Francisco.]

Wheat, No. 1\$13.00@14.50
No. 210.00@12.00
Tame oats11.50@15.50
Wild oats10.50@13.00
Barley10.50@13.00
Alfalfa10.00@14.50
Stock hay8.50@9.50
Straw, per bale35@50

Feedstuffs.

Stocks of bran have been accumulating a little of late, causing a slight drop in price. Rolled barley is quite firm, other lines standing as before.

[Wholesale prices, per ton, carload lots, San Francisco.]

Beet pulp, per tonNominal
Alfalfa meal, per ton\$18.00@19.00
Bran, per ton26.00@27.00
Oil CakeNominal
Coconut cake or meal23.00@25.00
Cracked corn44.00@45.00
Middlings35.00@38.00

Rolled barley\$4.00@35.00
Tankage45.00
Rolled oats34.00@35.00
Rice middlings30.00@32.00

Vegetables.

Little change is noted in prices, only a few items being marked down. Arrivals of all summer vegetables are large, much of the stock now appearing is of unattractive quality which tends to hold down values, though the demand is well up to the average. Celery is holding its own fairly well, as no excessive supplies are arriving yet. String beans are plentiful and lower. The canners are taking less interest in tomatoes, and the top price is 35c per lug, with excessive supplies. Summer squash is slow to clean up, cucumbers are very weak. Green corn continues to move off fairly well at the old prices.

Celery, Alameda, bunch10c
Cucumbers, lug15@30c
String Beans20@30c
Lima Beans20@30c
Summer Squash, lugs25@30c
Eggplant, lugs30@40c
Peas, lb5@8c
Tomatoes, lugs25@35c
Green Corn, sack50@1.50
Okra, box40@60c

Potatoes and Onions.

Onions have been practically all bought up by speculators, and some have been shipped East, while large quantities are being put in storage, the stock amounting to about 400 cars. Prices on the street are firm, though wharf prices as quoted are hardly up to last week. Sweet potatoes are still declining, and in ample supply. Delta potatoes are accumulating, and easier. Potatoes, ctt., Delta\$1.35@1.60
Salinas2.25@2.35
No. 275@1.00
Sweet Potatoes, per ctt.1.50@1.75
Onions, yellow1.75@1.80
Garlic, new crop, per lb4@5c

Poultry.

With a strong demand on account of the Jewish holiday, and comparatively light arrivals most of the time, further advances in price are noted on most varieties of chickens. Large broilers, fryers and smooth young roosters have participated in the advance, squabs, ducks and Belgian hares have been marked up a little.

[Wholesale prices, S. F.]

Turkeys, live, lb23@26c
Broilers, 18 lbs to doz. and less, lb.28@30c
do, over 18 lbs to doz24@26c
Fryers25@26c
Hens, extra, per lb, colored20c
Small leghorn15@17c
Smooth Young Roosters, per lb. (3 lbs and over)25c
Squabs, per lb33@35c
Geese, per pair2.25@3.00
Ducks15@16c
Old13@14c
Belgian Hares11c

Butter.

Notwithstanding heavy shipments of fresh butter to England, it is now reported that a large inquiry from

that market has been received for storage stock, and efforts are being made to fill it. As the export trade has already caused a shortage in storage supply this is causing a very firm feeling in the market and prices still tend upward. There is considerable demand for markets up and down the coast, and large arrivals are well cleaned up.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extra30½ 30½ 30½ 31 31½ 31½
Prime 1sts29½ 29½ 30 30 30 30
Firsts28½ 28½ 28½ 29 29 29

Eggs.

Eggs again reached 40c, but there is still too much coming in to permit them to hold this level, and have dropped back ½c. Supplies are cleaning up well, however, and further advance is expected.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras40 40 39½ 39½ 39½ 39½
Sel. Pul.33 33 33 33½ 34 34

Cheese.

The local demand has been quite heavy for most varieties, fancy flats have been marked up. Monterey cheese is slow, but old price holds.

[S. F. Dairy Exchange prices.]

Y. A's, fancy17 c
Fancy Calif. Flats, per lb15½c
Monterey Cheese15@16c
[Los Angeles Dairy Prices.]

Wed. Thurs. Fri. Sat. Mon. Tu.
Butter30 30 31 31 31 32
Eggs39 39 39 39 39 39

Deciduous Fruits.

The apple market is dull at present, with liberal offerings and speculators inclined to hold off, a great deal of stock is going into storage at packing houses and principal market points. Grapes are moving East rapidly and there is a good demand locally, though the offering of a good deal of unattractive stock has tended to retard the market. Pears are firmly held; peaches are doing very well, the crop in most districts being cleaned up. Figs are easy, as a lot of poor stock has arrived since the rain. Prunes are about gone, but plums still find a good sale. Huckleberries are less plentiful and higher; raspberries are about gone, while strawberries are holding their own, cranberries are coming into more prominence. Cantaloupes still find a very good market at old prices, casabas are in good demand, while watermelons are easy, with slow sales.

[Wholesale prices, San Francisco.]

Huckleberries, lb., fancy8@11c
off grade5@6c
Strawberries, chest2.50@4.50
Cranberries, Oregon, lb.10c
Apples:
Bellflower, box60@75c
Jonathans35@1.00
Newtown35@1.00
Pears, Bartlett, bx, No. 11.75@2.00
No. 275@1.30
Persimmons, box, dbl layer 1.25@1.50
Peaches, lugs60@75c
Carriers70@90
Quinces, lugs40@50
Figs, Cal. black, box, double layer35@50
White, single layer35@50c
Plums, crate75@1.00
lugs70@75c
Cantaloupes, std crate60@80c
Casabas, crate1.00@2.00
Watermelons, doz.60@75c
Grapes, Malaga, small box65@75c
Muscat, small box60@75c
Grapes, Thompson, crate60@75c
Tokay, crate60@75c

Special Deciduous Market Report.

[By J. L. Nagle.]

Sacramento, Sept. 26, 1916.

The rain of last Thursday did little or no apparent damage to the grape crop but somewhat affected the shipments for a few days in that growers did not think it advisable to pick and pack grapes from wet vines until the same had become thoroughly dried. The movement, however, has again started and though it is not as heavy as it was a week ago, shipments are fairly liberal.

Reports from the East indicate that Tokays and Malagas from some districts are arriving in the East showing heavy decay, which has had a tendency to somewhat affect the sale of good grapes. There is a very strong

demand for firm stock and indications are that this will continue throughout the season.

The following prices have ruled for the week:

New York.—Tokay grapes averaged \$1.50; Muscat, \$1.25; Cornichon, \$1.40; Malaga, \$1.19; Bartlett pears, \$3.00; Lemon Cling peaches, \$1.03; Levi, \$1.00.

Chicago.—Malaga grapes, \$1.15; Tokay, \$1.30; Salways, 66c.

Boston.—Tokay grapes, \$1.57; Malaga, \$1.25; Bartlett pears, \$2.75; Salway peaches, 70c.

Total shipments to Sept. 26, 12,697 cars; total shipments same date 1915, 10,794 cars.

Special Livestock Market Report.

San Francisco, Sept. 27, 1916.

Cattle.—There is no change in last week's quotations but the market is weak, having taken quite a decided slump during the week on account of the heavy receipts of Nevada cattle, said to be due to the bad season and the desire to market now, rather than hold through the winter. The purchase of several small bunches is reported in various parts of California indicating that smaller dealers are in the field, probably with the intention of cutting out the beefers for immediate slaughter and disposing of the feeders elsewhere.

Hogs.—Receipts continue about the same as they have for the past three weeks, stubble hogs being most in evidence and of a very satisfactory quality. Prices remain firm as quoted last week.

Sheep.—Sheep are rather scarce, Sacramento feed lots contributing heavily to the local supply at present. The market is firm at the old quotations.

North Portland, Ore., Sept. 25. Cattle.—Cattle sales were made on a good strong basis Monday. Receipts

were a little more liberal than last week. Feeder buyers were liberal bidders as well as killer buyers. Steers brought as high as \$7.00 with the bulk around \$6.75. Cows were in demand at \$5.00 to \$5.50 for the best. Bulls were as high as \$4.10. Receipts 1300.

Hogs.—Hog receipts were light, 1900 being yarded. The market was a brisk one and went to 10.05 with the bulk \$9.90 to \$10.00. The market closed strong.

Sheep.—Sheep receipts were lighter than usual with prices on a strong basis.

Wool.—There is very little buying reported in the country, growers having a decidedly different idea about values than the buyers. A few small lots have been picked up to fill small orders but nothing of a nature to change quotations. There is no change in the East or in London. There is some talk of lifting the embargo on pelts in Australia and the trade anticipates some such action with wool. The only local demand is for a limited amount of short staple and when this is bought up there is nothing favorable in sight.

Isabella65@75c

Dried Fruits.

The dried fruit market in general appears to be in healthy shape, with fairly active movement in nearly all lines, prices firm with some advances. Eastern buyers no longer look for lower prices and are coming into the market in a larger way. Apples, which have been quiet for some time, are now receiving more attention, causing a slight advance; the upward movement of apricots continues, with the crop about out of growers' hands, and strong demand. The Eastern trade has taken hold of peaches in good shape, shipments are now going forward rapidly. Prunes are much stronger in the East and a heavy buying movement is reported all over the country. There has been a large business in the country of late, and some sales are reported as high as 4c, though ordinary offerings would hardly bring that much at present.

[Net to growers, bulk basis, f. o. b. shipping point.]

Apples, new crop5½ @5½c
Apricots, per lb. 191613 @14 c
Figs, white, 19165 @5½c
Figs, blk, 19164½c
Calimyrna, 19169 @10 c
Prunes, 4-size basis, '165½ @5½c
19165½ @5½c
Pears6½ @7 c

Citrus Fruits.

The Eastern citrus auctions have eased up on prices of both Valencia oranges and lemons, the cause is stated to be the competition of deciduous fruits. However, prices are still good with prospects that they will remain so till the end of the season. At New York on Monday, Sept. 25, the auctions paid on averages from \$2.95 to \$5.80 per box for Valencias, and for lemons \$3.05 to \$5.45 per box.

Prospects for a bumper orange crop next season are very good at this time. Estimates place the crop now on the trees at fully 20 per cent over that of a year ago.

The lifting of the Australian embargo has resulted in placing many large orders for oranges here, and shippers are now having difficulty in getting steamer space. Local orange prices have been cut a little from last week's level, and lemons and lemonettes are lower, with more liberal offerings.

Oranges, Valencia, fancy, bx \$4.25@4.50
choice4.00@4.25
Grapefruit, fancy3.25@3.75
choice2.50@3.00
Lemons, fancy5.75@6.00
choice5.00@5.50
standard3.50@4.00
Lemonettes2.75@3.75

Honey.

Values are steady, and supplies here are still moderate, though the situation is hardly as firm as a few weeks ago.

[Wholesale prices, San Francisco.]
Water white, comb13@15c
Light Amber10@12c
Amber8@10c
Water white, extracted8 @9c
Light amber6 @7c
Dark4 @4½c

Nuts.

The Walnut Growers' Association has announced new-crop prices, which are quoted below. Heavy sales are reported, and it is believed that most of the crop is already out of first hands. Almonds are very closely cleaned up in the country.

[Exchange prices.]

Almonds, 1916:
Nonpareils, lb20½c
I. X. L.13 c
Ne Plus17 c
Drakes16 c
Languedoc16 c
Walnuts, Budded19 c
Jumbo17½c
Soft shell, No. 115½c
do, No. 212½c

Horses.

The local market shows some signs of improvement, though by no means active. Most of the stock put on the market in the last fortnight has been disposed of, and quite a lot of unusually attractive stock has been brought in from the country, including a number of heavy drafters. Such horses have found a ready market at prices fully in line with the top figures quoted, and occasionally higher in the case of especially attractive animals. As a rule, however, the bidding was without much spirit, and it is not easy to find buyers for light and medium weight stock. The way things are going is shown by the appearance on the local market this week of 35 good stage horses from Calaveras county, whose place has been taken by motors.

[Approximate values in San Francisco, based on auction sales.]

Drafters, 1700 lbs. and up250
Drafters, 1550 to 1650 lbs.150@200
Chunks, 1350 to 1500 lbs.150@175
Wagon horses, 1050 to 1350 lbs 110@150
Green Mountain range horses, 950 to 1200 lbs.20@75

Livestock.

[Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.]

Steers, No. 16½ @7 c
No. 26 @6½c
Cows and Heifers5½ @6 c
No. 25 @5½c
Bulls and Stags4 @4½c
Calves, light3 @3½c
Medium7 @7½c
Heavy6 @6½c
Hogs, grain-fed:
100 to 150 lbs.8 c
150 to 250 lbs.9 c
250 to 325 lbs.8½c
Prime Wethers7½c
Spring Lambs, f. o. b. country points\$5.25@5.75

Wool.

[Prices paid in country.]

Red Bluff, year's	25@27c
Mountain, fall	13@14c
Sacramento Valley, year's	19@25c
Mendocino, year's	31@32c
Mendocino, 7 months'	26@27c
Southern, year's	18@21c
Bran, per ton	27.00@28.00
Southern, 7 months'	13@16c
Southern, fall	9@11c
Imperial Valley, year's	17@19c
Imperial Valley, 7 mos	14@15c
Nevada	21@23c
Fall wool	10@20c

Hops.

Prices have advanced sharply, and heavy purchases are reported in California. The Oregon crop is turning out of poor quality, and the advance is due to competition among buyers for choice stock.

Picking is now over in some sections, and the buyers are taking more interest in the new offerings, with slightly better prices offered. Sales in the Sonoma-Mendocino district are reported at an advance of 2c.

Sacramento	13@14c
Mendocino	14@16c
Oregon	14@15c

Groceries.

The only notable change is a further advance in sugar, which took two jumps a few days ago, amounting to 35c.

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2...	28.60	28.00	28.00	28.80
" 9...	25.33	26.65	26.00	28.16
" 16...	27.50	27.83	26.83	28.10
" 23...	30.66	28.25	30.66	28.50
" 30...	28.66	36.33	28.00	36.66
Feb. 6...	26.88	30.25	26.80	32.33
" 13...	26.74	31.40	27.90	33.25
" 20...	29.00	32.00	27.16	32.00
" 27...	29.10	30.90	27.00	35.25
March 6...	27.00	24.08	25.25	24.16
" 13...	24.66	29.91	24.00	28.83
" 20...	23.00	28.33	22.50	27.16
" 27...	22.91	28.50	23.00	28.08
Apr. 3...	23.00	28.50	22.23	28.83
" 10...	23.08	29.31	32.00	28.00
" 17...	23.00	27.33	22.00	27.50
" 24...	23.00	25.25	22.00	25.00
May 1...	23.08	24.33	22.00	25.33
" 8...	23.00	24.10	23.08	25.00
" 15...	23.16	24.58	23.00	25.66
" 22...	23.75	25.00	23.25	25.00
" 29...	23.08	26.50	23.00	26.50
June 5...	23.90	25.50	23.00	27.00
" 12...	24.08	25.83	23.83	27.00
" 19...	25.16	24.50	26.00	25.91
" 26...	25.50	24.50	26.16	25.91
July 3...	25.83	24.60	26.16	26.00
" 10...	26.21	26.40	26.00	26.60
" 17...	26.58	25.83	26.00	26.00
" 24...	25.41	26.00	25.50	26.00
" 31...	27.00	26.00	26.00	25.91
August 7...	27.00	26.16	26.00	26.00
" 14...	27.00	26.50	26.00	26.00
" 21...	27.50	26.50	26.00	27.95
" 28...	28.00	27.25	26.00	28.50
Sept. 4...	28.00	30.00	26.00	30.50
" 11...	28.00	30.20	26.00	32.00
" 18...	27.00	30.41	26.00	31.09
" 25...	26.50	30.41	26.00	30.50

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2...	38.50	35.60	42.00	35.00
" 9...	32.66	31.41	35.16	32.00
" 16...	31.00	30.33	30.33	30.75
" 23...	30.50	34.83	30.00	34.33
" 30...	28.16	36.33	26.66	36.66
Feb. 6...	23.33	35.66	23.75	35.50
" 13...	23.00	28.90	25.10	28.00
" 20...	23.60	23.66	23.58	20.33
" 27...	21.40	20.30	20.80	18.50
March 6...	20.50	18.33	19.00	18.00
" 13...	20.66	19.50	19.00	18.91
" 20...	21.00	20.00	19.66	19.08
" 27...	20.83	21.41	18.50	20.83
Apr. 3...	21.75	21.00	21.00	21.00
" 10...	22.00	21.16	23.08	20.91
" 17...	21.80	21.83	22.25	22.58

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May 1...	26.16	21.00	22.00	22.58
" 8...	23.33	21.20	22.00	21.41
" 15...	23.58	24.58	22.00	20.83
" 22...	23.58	25.46	21.91	22.50
" 29...	23.50	25.33	21.83	22.50
June 5...	22.50	25.00	20.70	24.51
" 12...	22.00	25.00	21.00	24.16
" 19...	22.00	24.83	20.00	23.75
" 26...	23.33	24.66	23.83	24.58
July 3...	23.83	24.60	22.50	24.00
" 10...	25.50	26.30	25.00	24.00
" 17...	24.83	27.16	24.66	27.00
" 24...	25.41	28.20	25.50	28.00
" 31...	25.80	28.50	25.83	28.00
August 7...	30.50	31.00	28.00	29.16
" 14...	31.16	33.08	28.66	31.00
" 21...	31.25	33.09	30.16	31.83
" 28...	30.58	33.50	29.16	32.00
Sept. 4...	30.08	36.12	30.16	32.00
" 11...	34.33	37.90	31.66	36.00
" 18...	37.98	38.83	33.37	37.00
" 25...	38.66	39.75	34.66	38.66

Publisher's Department.

Santa Barbara is the place, Oct. 26, 27 and 28, the time, and the meeting of California Association of Nurserymen the magnet which should pull a large attendance of horticulturists. A fine program is being arranged by Secretary Kruckeberg, which will be announced later.

Our former stock writer, Paul Parker, came up from Salinas the first of the week. He said that the farmers of Monterey county were very prosperous this season, and their prosperity was reflected in his paper, the Salinas Daily Journal. The increase of land holdings by the big sugar company in that county was deplored by Mr. Parker, as foreigners, mostly Hindus, were placed on land as fast as acquired by the company.

W. S. Ferris of Pomona writes us that the results obtained from the advertising carried in the Rural Press last season surpassed those obtained from any other of the several rural publications in which he carried advertising. "You can count on an ad whenever we have anything to sell."

Eighty per cent of my sales of pure-bred Durocs have been made through advertising in the Pacific Rural Press.—Hagen Smith, Woodland.

C. E. White of Forestville on renewing his subscription writes: "We deem it a privilege and a pleasure to send this check, as we have more than received our money's worth from the past issues that we have received of the Press."

BREEDS MARKETED.

To the Editor: What per cent of the different breeds of hogs come to the San Francisco market?—F. H., Berkeley.

[Answered by Western Meat Co.]

[About half of our receipts are of Poland China breeding, balance divided between Durocs, Berkshires and other breeds.]

Classified Advertisements

MISCELLANEOUS.

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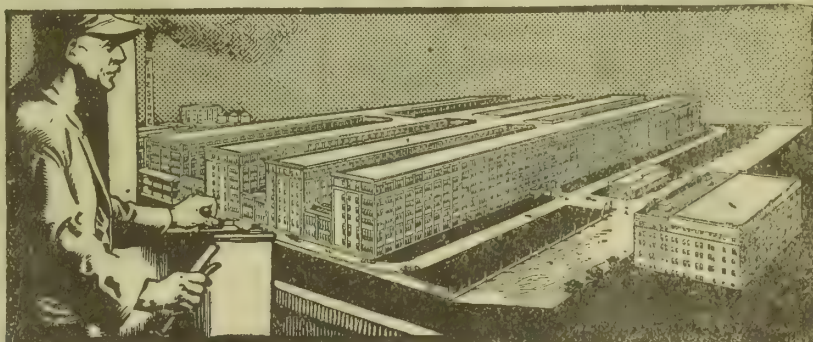
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THE PACIFIC RURAL PRESS

SAN FRANCISCO

OCTOBER 7, 1916.

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Practical Bookkeeping on a Dairy.

A farmer's system of knowing what his cows produce, what his weekly, monthly and yearly income is and from what source it has come.

[Written for Pacific Rural Press.]



J. HESSE is a dairyman in Merced county. He is also a business man, though not in the sense that we ordinarily think of business men; for instead of measuring muslin or weighing sugar he weighs milk and measures cows. Back in 1896, Mr. Hesse began to keep dairy cows. They were only scrubs, but that didn't interfere with his starting a set of books in which were set down such data as he thought might be of some future use to him.

As a usual thing your business man has a complicated set of books made up of heavily bound journals, ledgers, etc., but not so with Mr. Hesse. His investment in books hasn't exceeded perhaps two dollars in the last 20 years, and yet those little cheap, paper-covered books contain records of practical experience that is seldom equaled in the most modern business house; and it is this that makes his records doubly interesting to the practical dairyman.

Those first year's books were more in the form of a diary of every cow he kept than anything else. Each cow's name was entered and below you find date bred, when she freshened, when she was dried up, the sex of her calf, weight of calf at birth and weight of bull calves when sold.

Early Benefits.—Mr. Hesse knows a number of things that your average dairyman has to guess at. He knows that the average length of time a cow carries her calf is 281 days, that the shortest time a cow in his herd has ever carried her calf was 252 days and that the longest period was 305 days. This saves him a lot of unnecessary worrying, for he knows what to expect with most of his cows. Some are of the opinion that they can regulate the percentage of heifer calves.

Mr. Hesse has tried out various of these schemes but his records tell him they were all in vain, for out of 165 calves 87 were bulls and 77 heifers and these were spread over a period of a great many years.

In weight of bull calves, it takes a pretty shrewd butcher to outguess Mr. Hesse, for he has weighed his calves so long that he knows pretty close what the weight at birth and the gain per week should be.

Breeding Record.—In later years he has improved his system of record keeping. Now he has his breeding records on a sheet of ruled paper that is enclosed in a glass frame near the separator so that it is in plain view every milking. On this sheet is found the name of cow, the month she was bred, the date she is due and the date she is dried up. If for any reason a cow is not bred when she comes in heat, a star is placed opposite her name, under the proper date. Thus it is known

when she will come in heat again.

Milk Records.—In 1905 Mr. Hesse started to elaborate on his record keeping system by the purchase of scales and a Babcock tester. Now he started two new account sheets; one for the individual cows and one for the herd, the latter also taking into account practically every business transaction in connection with the dairy.

The weighing and testing of milk of individual cows has been done ever since then. At times it has been every day, sometimes every ten days, but latterly every month, two milkings being weighed and tested once a month and multiplied by the days in the month in order to figure the production of milk and fat per cow each year. For all practical purposes the once-a-month testing has been found satisfactory and will be

continued. Naturally it has been this regular testing of each cow in the herd that has led to a higher average production each year. Last year the herd average was 286 pounds for a ten and a half month lactation period; but this will be increased in the present year because the poorer cows have been weeded out. And it has been this regular testing more than anything else that has led to the use of purebred Holstein bulls for a number of years.

But while the individual records of his cows are one of the main factors in his success, it is in his simple system of keeping herd records, creamery returns, etc., that his methods are most unusual.

Here he has a check on everything about the business. He takes samples and weights of his whole milk, cream and skim milk. By testing these he knows approximately what his milk tests are, what his cream tests are and how much fat he is running through the separator into hog feed. These and other interesting facts are recorded on ruled sheets, shown at the close of this article.

No Guessing.—It will be seen that one set of the data is secured by testing and weighing the milk and cream on the ranch and that the other is the data furnished by the creamery in their statements.

In this manner Mr. Hesse has three separate and distinct sets of figures on the total amount of butterfat sold. First he has the weight and test of the milk separated. By weighing and testing his cream he is able to verify the correctness of his milk testing, and if both of these agree they should correspond with the creamery's statement.

By subtracting the amount of milk produced from the amount separated he is able to tell exactly the amount of milk for his calves. By recording the amount of skim milk, he is also able to tell what his hogs are consuming per head and by keeping track of other feeds and weights of gain he could easily determine what his skim milk is worth per hundred.

(Continued on page 393.)



Cows Coming Home—Palo Alto Stock Farm.

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EDITORIALS

THE WEEK.

ASIDE from farm-cropping, which is the greatest weather-risk the world over, the largest single wager ever laid against the weather, so far as we know, was the insurance of \$25,000 issued by Lloyds last week that the sky would smile over an open-air operatic performance in San Francisco on the evening of September 30. As a matter of fact the sky did not smile: it frowned and also wept copiously. But Lloyds did the smiling, paid their loss, and undertook the performance themselves on a later evening to recover what they could from their bad bet on the weather. Our interest in the incident lies in possible agricultural bearings of it. Lloyds' insurance on San Francisco weather at this date was a rational venture. It is the season for the real autumn rain to begin, but such rains come from storms which normally strike the coast a thousand miles or more north of us, and either pass eastward without wetting us or else occupy some days rolling down our way. Therefore, it was rational, several days in advance, to insure a clear sky on the night in question—if no drive on the northern coast had disclosed itself. As we understand it, this was what the Lloyds did. And this is what happened. A storm was moving toward the coast of British Columbia, across an ocean area where there are no weather-observers watchfully waiting, at the very time when Lloyds were laying their wager. In its eastward drive this storm met impregnable aerial barriers, and was repulsed with great loss before it could land its blow and be reported. It bounced back from this aerial opposition and made a surprise attack on the coast of California, washed away Lloyds' margin, and poured down water along our coast—even to the measure of an inch and a half at some southern points—staining a lot of beans and playing other expensive pranks with farmers' property.

AGRICULTURAL SIGNIFICANCE OF IT.

THE point which we would make as the lesson of this experience is that insurance against farmers' losses by bad weather is a rational undertaking and should be developed in the interest of individual comfort and general prosperity. We are not sure that we would advise that it be done in Lloyds' way. They are bold operators and willing to take all the chances of not losing. We presume they would insure against undue heat in the future life of a decedent man on the ground that defective communication would prevent the beneficiary from submitting satisfactory proofs and collecting damages for climatic changes in his environment. And yet, crop loss by bad weather is as rational to insure against as crop loss by fire, and can be met by the same science of calculation and preparedness. And it is not only theoretically rational, but it has been demonstrated to be practically feasible and beneficent. Insurance against crop-losses by hail has long been common in Europe, all the way from Italy to the Baltic. It began with risks taken with great profit by private insurance companies, and is now very cheaply and successfully undertaken by farmers' co-operative societies. The same course of beginning and devel-

opment into self-protection by farmers, has taken place in insurance against live stock losses, of all possible kinds, in European countries. There is no reason why it should not be provided to cover all kinds of agricultural risks which can be measured and to protect against all destructive agencies which can be defined and causatively understood. There is no reason why a lone man should longer stand uncovered under a threatening sky and submit himself and his family to crushing deprivation and defeat. A little contribution from the super-abundance of each will insure the comfort of all. Farmers should begin at once discussion of preparation for all kinds of crop losses. They should also insist that the government liberally provide for extension and ampler equipment of the Weather Bureau so that all approach of dangerous weather phenomena shall be foreknown.

KEEP WATER WHERE IT BELONGS.

THINKING of Lloyds' loss reminds us that chance of getting water into the wrong place is possible in other ways than by rainfall. This writer feels free to speak of it because he does not make a practice of drinking water in San Francisco and because he owns no thirsty land in the San Joaquin valley. For these reasons he may claim to be reasonably free from personal prejudice or interest in the issue which has arisen between the metropolis and the valley as to which shall have snow water from the Tuolumne river. We therefore feel perfectly free to declare that in our opinion the effort to take water from the valley to serve the city is as unjust as it is unnecessary and unwise. There is water enough in the coast water-sheds, if properly handled, to serve the growth of the city for a considerable period of time, and investment to develop and husband such supplies will remain well made, no matter what later generations may think wise to do. And beyond these nearer supplies, which should be permanently secured, there are almost incalculable amounts of water in more remote districts, which would be well rid of it, to insure the city enough water for its greatest possible development in all coming time. We believe these statements rest upon the expert knowledge of engineers whose capability is unquestioned. This being the case, why should the metropolis pursue its undertaking to take water away from the San Joaquin valley, whose future development will require every drop its eastern mountains can supply? It looks to us like a great instance of miscalculation and misunderstanding of the real relation which should be recognized between the futures of the city and the valley. The valley claims, and we presume unimpeachably, that it owns the water under the law, and that it is now using it for a desirable purpose in production: that it is unlawful to take water from one watershed for use in another, so long, at least, as the land to which the water naturally belongs has capacity for the full use of it; that the growth of the valley demands all such water and that to remove any part of it will mean arrested development. Whether such claims, which seem to us true and just, will perpetually prevent the taking of the valley's water or not, we do not know. There is, however, one principle beyond all these which should determine the city's policy, and that is that to take water from valley producers is to set limits on its own growth and prosperity. The city cannot enforce idleness on any valley land without checking its own activity. Rather than rob its tributary country of its chief producing agency it should loyally declare to the valley that it will henceforth cheerfully drink—whatever the next election makes available.

FARMERS TO SAVE MONEY, NOT USE IT.

APROMINENT San Francisco banker, at the meeting last month of the American Bankers' Association in Kansas City, is reported to have said this:

While the end sought by the rural credit act of Congress was sociological, an endeavor to stem the drift of population to the cities, lower rates of interest and greater facilities for getting into debt would not of themselves serve to accomplish this result. The men who have the most intimate experience with farm conditions generally believe that borrowing is already too easy for the farmer.

The San Franciscan, credited with using these

words, is a high-minded, sincere man, who really believes what he says, as do other men of similar training and experience, because he does not understand the character of modern farming and its relation to world support and progress. In the first place his judgment is inaccurate because he still occupies the old point of view of financial men, viz.: that it is the function of the farmer to clear and subdue wild land which is virtually given to him by the Creator, through His terrestrial agent, the government; to feed himself and his family with what he can not sell; to sell all that he can and to take the money to the banker to invest for him, and to get fore-handed by the process of hard working and close-saving. It was a pretty sure way to get rich, as riches were measured in those days, and for a farmer to borrow money was an indication that something was the matter with him or his farming. It was the function of the farmer to create and store up money which the banker could lend to other people to use in their business. The American farmer discharged this function nobly for a good many decades, and the banker helped the farmer to get as much interest as he could on his savings—charging the farmer about as much for the handling as he gave him for creating the value. During the last few decades conditions have been changing so that new farmers could not start with a practical gift of the land as the old farmers did, and a farm beginning called for considerable investment; farmers became borrowers, and all the chances of loss multiplied under the new situation in which farming found itself. It became more or less true that "borrowing became too easy for the farmer," but it was because paying back became practically impossible, for bonuses and rates were too high and terms so short that compounding was facilitated. In fact it was so sharp a change in condition that new farmers were fleeced with the same tools that old farmers helped with in the shearing, and there has now come what our San Francisco banker calls a "sociological end," but he mistakes the purpose. It is not primarily to "stem the drift of population to the cities." That is only measurably incidental, and not such an unmixed blessing to be sought as our amateur sociologists claim. The farmer does not care how many people go to the cities, if they behave themselves and do things which the public needs. From one point of view the more people who get bravely busy in the cities, the better for him. He has to feed them all, and city-building and activities help him to get his fair share of the wealth which all well-employed mankind is busy in creating. But to do this it is also necessary for him to be able to stay on the farm and not be dislodged from it by the exactions of money-changers. This is the "sociological end" at which the new rural credit legislation aims, because, under the new conditions, farmers must use money in order to save money, and it is really the duty of city bankers, who are this month doing more politics than finance, to recover as fast as possible from this dissipation, say less about "borrowing being too easy for farmers," and do more to make it easier still, for all who possess farming and business qualifications to use money in the progressive production of the present day. It may not be necessary for the recent "farm loan act" to lend a dollar. The custodians of the immense accumulations of city banks, which are now straining the rivets of their vaults, can regulate that matter, if they have wisdom and breadth of vision, but they can never do it by voicing antiquated notions that "borrowing is already too easy for the farmer."

LUBIN GOES TO MARKET.

THAT grand old patriot and far-seeing economic philosopher, David Lubin of Sacramento, is devoting the "heated term" in Europe to the extension of demonstrations of his plan of direct trade between consumers and producers of food supplies. As mentioned some weeks ago in these columns, his experiment at Sacramento, by the co-operation of the California State Grange, yielded very encouraging results, and now he has secured opportunity for another demonstration under the executive and congressional noses in Washington. It is another demonstration, not only of direct trade, but of Lubin's genius for put-

ting a demonstration where it will do most good, because the pursuit of his ideal will require some adaptation of postal regulations which are exceedingly hard to get unless you are on the spot with the proper kind of a can-opener. One of the acts passed at the last session of Congress and signed by President Wilson, authorizes an appropriation of \$10,000 for an experiment in food trading in the city of Washington. The essential feature of the plan is the adoption by the postal authorities of the system employed by mail order houses in delivering and collecting parcels through the post-office, and in receiving and paying the purchase price therefor. Mr. Lubin has delivered addresses in Eastern cities pointing out the advantages of his system, the benefits derived from dividing the

profits of the middlemen between the consumer, who pays less for his food supplies, and the farmer, who receives more for his produce. The parcel post system Mr. Lubin has devised, and which is soon to go into effect temporarily at least in the national capital, is an improvement of a postal distribution system which is already working successfully in Europe. The parcels post and rural delivery have put the farm on the map. They have already made the express companies reasonable, enterprising and busy beyond old records, instead of killing them, as was supposed it might do. Mr. Lubin's plan promises to be of great benefit to food producers and consumers, but it is not safe to claim that it will not also help everybody by promoting better and more reasonable business.

stand in the mud. The black walnut root will stand either more or less water than the English walnut seedling without root injury. You do not need to keep the alfalfa so far away from the trees. You might get the equivalent of five tons of hay to the acre from the land actually occupied by the alfalfa. The amount of water at each irrigation depends upon depth and character of the soil. Do not use enough to keep it standing long on the surface. If you can only use a little at a time, irrigate oftener. You can grow alfalfa by overhead spraying if you wish to pay the cost of the outfit. A few are doing it on small areas. Almond trees are more sensitive to standing water than walnuts. Therefore with adobe soil you must be careful to let them drink little and often.

By
the Editor

QUERIES AND REPLIES

Inquirers Must
Give Full Name
and Address.

Soil Depth and Soil Blasting.

To the Editor: I am leveling ground to plant orange trees next spring and wish to know how deep the root system of orange and lemon tree penetrates. Also how deep is it advisable to place dynamite for breaking up all hardpan? I mean at what depth will hardpan cease to be a menace to the tree? What is the best kind and "percent" of powder to use?—Planter, Fresno county.

The orange tree will bear well and look happy for a good many years providing a shallow soil is furnished with fertilizers and water in such a way that the soil does not become too poor or too sour, or too muddy below. If the soil is kept right in these respects the trees might be satisfactory for a long time on something like three feet of soil. But though this is true and though most of our orange trees are rather shallow-rooted, the tree will go much deeper if the soil is hospitable and be the better and longer lived in thrift and vigor if it can send some of its roots twice or thrice as deep in an open, well-aerated soil. Under most conditions of tight, hard subsoil, this is promoted by blasting. How deep the soil is rendered available by blasting depends not alone on the shattering, but upon whether excess water will move out to the depth to which the disturbance reaches. If you can still bog the soil by irrigation, a shattered bottom may be no better than a solid bottom, and it may be worse. It depends then upon the character of the subsoil substance and its relation to gravity-escape of excess water, whether you make greater depth of soil available for root-penetration or not. Of course if you master the wise trick of regulating your irrigation so that moisture and air go evenly and not in excess to the depth of your shattering, then, theoretically, the whole of the new depth becomes hospitable and invites deeper rooting of the tree. The use of powder in soil treatment does not make the operation of farming less intelligent. Like most improved methods and agencies, it calls for greater wisdom.

As for the practical operation of soil blasting, including methods and materials, correspondence should be undertaken with those advertising powders for farm uses in our columns. They expect to stay in the business and to increase it and it is to their interest that blasting should be well done and with the fullest knowledge of what it may be expected to do, in its effects upon the soil and the crops grown upon it.

Slitting Bark of Fruit Trees.

To the Editor: Will it do any harm to slit the bark on cherry trees (about two years old) at this time of the year, or would it be better to wait until spring? I have quite a number of these young trees which seem to be dying, and I find considerable gum on them.—A. W. B., Sebastopol.

We know very little about the advantage of slitting the bark of fruit trees for any purpose or at any time of the year. We have seen cases in which the trees seemed healthy enough but bark-bound by hardening of the bark, or other cause, which seemed to prevent normal enlargement, and enlargement after slitting seemed to warrant the operation. We see no reason for slitting bark when gumming shows that the root system of the tree is not able to furnish a sufficiently vigorous sap flow. There may be cases in which gumming

indicates too much sap, but it generally means there is too little, and it is too little sap which makes trees sick. In that case it is desirable and reasonable to cut trees back and give the roots less top to keep alive but not to slit the bark to cause more loss of force. If we slit at all it would be in the summer, while there is still activity in the tree, and not in the dormant season. We apprehend that if your trees have recently shown gumming and other signs of death, it indicates that they have had too little moisture during the latter part of the summer. If they showed such signs in the spring it was caused by too much water in the soil during last winter. Cherry trees are quite apt to act both ways and we cannot see that bark slitting is a reasonable punishment for either behavior. We would cut back, in the hope that the tree might thus be helped to carry its load, but we should expect to lose a young cherry tree which took to gumming at this time of the year, when it will have no chance to restore condition by growth processes.

We have conceded that there might be wisdom in bark slitting under certain conditions. We are not sure of it. We are rather inclined to the view that bark-slitting of fruit trees belongs to that degree of enlightenment which prescribes slitting the tails of cows to cure the "hollow-horn."

Vines for a Tank-house.

To the Editor: What is the best vine to plant for covering a tankhouse 30 ft. high to keep it cool in summer and warm in winter, and at the same time beautify the structure? Would you suggest English ivy, which I understand is an evergreen, or Boston ivy, or what? Also, what is the best time to plant, and how?—W. C. I., Stockton.

English ivy has done a good deal of high climbing in the San Joaquin valley and it makes a dense evergreen screen against heat and cold as you suggest. It does not, however, strike us as very beautiful. It is of somber hue and will make a very straggling growth, hanging in masses unless you do a good deal of high pruning. Boston ivy climbs well and does well in the valley. It clings closely and keeps the shape of the structure, and has a brighter aspect both in its verdure and its autumn coloring. But it is deciduous and would leave the structure with only a tracery of bare vines in the winter. Virginia creeper, trumpet vine (*Bignonia radicans*) and many others are worth consideration. If you look over the older houses in your city you may get sight of something which will please you greatly. The best way to start is to buy plants at the nurseries which you can plant out any time that suits you.

Alfalfa and Nut Trees.

To the Editor: Will it retard the growth or injure young walnut trees on adobe land to grow alfalfa between the trees, if it is kept 8 or 10 feet away from the trees? What will average alfalfa produce per acre? What amount of water should alfalfa have at each irrigation? Is an overhead spray system successful for alfalfa? Would growing alfalfa under the above conditions harm young almond trees?—B. W., San Francisco.

Alfalfa will not injure walnuts if you use water enough to keep it from robbing the trees of moisture and do not use so much that the trees have to

A Question of Peach Spurs.

To the Editor: Why do fruit spurs in the center of peach trees die back? People in this valley say that if you thin or not they will die back in the center anyhow up to the age of 6 years old; after that they will not die back.—W. H. D., Hemet.

It is not the habit of the peach tree to bear on spurs as most other deciduous fruits do. It always bears on the new wood, that is the wood which grew the preceding summer. The thin twigs which break from the old bark are weak and often die without doing anything but make a few leaves. If they do bear they often have not strength enough to make new wood beyond and die as you describe. They do not make new bloom buds on a spur, and if they do not make a new shoot beyond, that is the end of them. A young tree is more apt to do this, as your neighbors say, because a young tree is growing so fast farther out on the branches. If you wish bearing wood below, cut off some of the branches to force out stronger shoots lower down.

Asparagus Growing.

To the Editor: I would like to know how to start and care for a small asparagus bed from start to finish. Can the roots be set out soon after the first rain? Which would be best, six-year-old roots or two-year-old roots? I have both.—B., Carpinteria.

Details of California asparagus growing are given in our book "California Vegetables in Garden and Field." You should proceed at once to prepare the ground, digging out the space a foot or more in depth and putting a layer of several inches of well rotted manure and then several inches of well pulverized surface soil. When this has been settled by the rains, rake again the soil and set the roots so they will be six inches or more below the old surface and fill in with good soil and cover with coarse manure so that heavy rains shall not pack the surface too hard. In California one-year-old roots are best and two-year-old roots will do well. Older roots are not desirable. Do not cut any shoots the first year and only a few the second year. After that the bed will stand hard cutting if the surface is manured every year.

Better Start with a Good Tree.

To the Editor: I lost a great many three and four year old trees by sour sap. The root is myrobalan and they are throwing out nice suckers now. Is it better to pull them out or to graft the suckers? And would the latter make a good tree?—G. A., Healdsburg.

You must have had "sour sap in the top"—whatever that is. The myrobalan roots seem to be sound but though you might get a good growth by grafting a strong sucker, we prefer to start with a good tree. If you should put grafts in two or three suckers from a stump you would always be ashamed of the trees you get that way. Besides it costs a lot of time to get growth by grafting suckers.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco, for the week ending at 5 p. m.

STATIONS	Rainfall Data		Temperature Data			
	Past Week	Seasonal To Date	Normal To Date	Max'm	Min'm	
Eureka .....	.06	1.81	1.56	62	44	
Red Bluff	1.12	1.82	.95	96	46	
Sacramento .....	.13	.34	.16	94	44	
San Francisco .....	.88	1.68	.36	86	50	
San Jose .....	.28	.89	.44	90	40	
Fresno .....	.60	.82	.36	98	44	
Independence .....	.14	.36	.33	84	30	
San Luis Obispo	2.34	2.34	.55	82	50	
Los Angeles	1.90	1.90	.09	82	50	
San Diego .....	.19	.32	.09	80	56	

How to Get a Farm Center Hall.

[Written for Pacific Rural Press.]

Some speed in getting big things done is the record of the Mt. George Center of the Napa County Farm Bureau. On January 29, 1916, it was first proposed to erect a Farm Center Hall of their own. On Sept. 3, the fine bungalow shown in the illustration, 40x48 feet besides pergola and stage, and costing for lumber, brick, cement, etc., \$1,120.10, was dedicated with elaborate ceremonies, including the flag raising.

On the evening it was proposed

other, and hauled free by three others. All work except a little requiring special skill was donated.

On Feb. 13, ground was broken, 15 days after the project was first proposed. On Feb. 15, the contract for lumber was awarded to a local firm, two members guaranteeing payment. The flag, flag-pole, and sign, besides \$50 cash, were donated by persons outside the center who believe in helping those who help themselves. Trees to decorate the



Farm Center Hall, Dedicated Seven Months After It Was First Proposed.

(Jan. 29) a committee of eight was appointed to see what could be done. They secured an option on one-third acre on the Hagan road near Napa; and at a special meeting of the Farm Center Feb. 5, it was decided to pay the \$40 asked for it. A tentative Board of Trustees was appointed. Legal papers were made out gratis by an attorney member of the center. Another member drew plans for the Hall and superintended the building of it, gratis. Gravel was furnished free by an-

grounds were furnished by a local nurseryman.

The basement is 40x48 feet, the stage 12x28, and the pergola in front which will protect visitors alighting from vehicles in rainy weather, is 12½x42 feet.

Ladies of the Center served meals to the men working on the building and grounds. They will also have a large part in paying for it by means of entertainments, dinners, etc., which will themselves lead to still more of this progressive co-operation.

Alfalfa for Hogs and Hay.

[Written for Pacific Rural Press.]

The possibilities of growing alfalfa and hogs on the rolling hill lands in the Watsonville district of Santa Cruz county, provided abundance of water for pumping can be secured, seems to be pretty well demonstrated on the ranch of E. A. Hall.

Six years ago Mr. Hall purchased 32 acres of apple orchard, adjacent to a natural lake. By putting in a 10-horsepower electric motor and a three and a half inch pump he was able to lift sufficient water for irrigation purposes onto the highest part of his land with 53 foot lift.

Pipes and flumes were constructed along the crest of the ridge and alfalfa seeded broadcast among the apple trees. The purpose of this system has been two-fold, first, to provide feed for the herd of pure-bred Poland China hogs he has established, and secondly to supply nitrogen, and moisture to the trees.

Although he didn't properly level his land, which he will do next winter, the alfalfa has produced sufficient feed to carry as many as 125 hogs at a time and always before this year he has cut 25 to 30 tons for hay.

At harvesting time the hogs have to be penned up because of their

apple-picking stunts but after harvest they do a thorough and profitable job of cull cleaning the orchard.

Besides the additional profit he secures from the hogs Mr. Hall is of the opinion that he gets a larger crop of more highly colored and larger apples than he would without the additional moisture and especially is this true, he says, with the Bellflower, which is ordinarily a shy bearer on hill lands, but which bears regularly and heavily with him.

THE OLDEST CORK OAKS IN CALIFORNIA.

[Written for Pacific Rural Press by Dr. W. L. Jepson.]

In the course of botanical wanderings in the Sierra foothills a noon-stop was made at the old hostelry in Jamestown, the "Jimtown" of gold days, but now a railway center where one waits long for the train that moves up and down and sidewise on the various branches. So whilst waiting the curious traveler inspects the interesting display of Tuolumne agricultural products and Black Bart relics in the purviews of the ample hotel bar-room. Amongst them all my eye was caught by fine specimens of the

bark of the cork oak, labeled as being cut from trees planted in the neighborhood in 1858,—the days when seed distribution by the embryo United States Department of Agriculture was part of the work of the Patent Office.

So we went to see the trees, driving through a country, half farming, half mining, which was very beautiful to the eye, and so came to Tuttletown where Bret Harte clerked in the store. There are three large trees standing in a row in the canyon bottom just below the village. They have the best of soil and moisture conditions and are fine healthy trees. For present interest and future need I here record measurements:

	Trunk circumference	Height at six ft.
West Tree.	.72 ft. 26 ft. 60 in.	
Middle Tree	78 ft. 30 ft. 62 in.	
East Tree.	.52 ft. 18 ft. 58 in.	

The bark on the trunk averages, as shown by the axe-injured bark of one tree, 1¼ to 2½ inches thick. It is apparently of good quality, and would seem to give further demon-

stration, if such were necessary, that as a forestal proposition at least, the production of commercial grades of cork is possible in California.

The writer does not really know that these trees are the oldest of their kind in California. The heading of this note is merely a challenge to Pacific Rural Press readers.

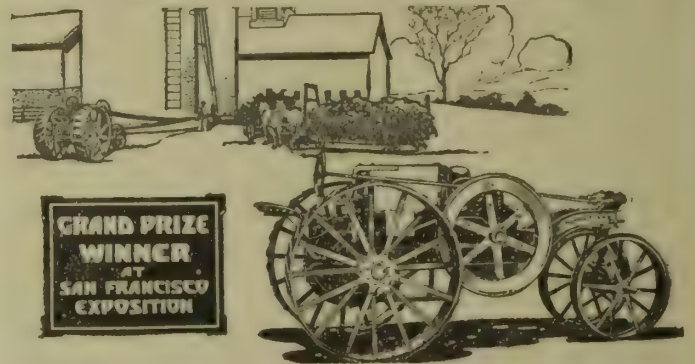
Dept. of Botany, University of California.

[We are glad to have these measurements by Dr. Jepson. Although there have been reported sturdy oaks from that Patent Office distribution of acorns at various points in California, we have no reports of any as large as these. We remember reports of trees in Sonoma, Calaveras, Tulare and Los Angeles counties and they are to be found, no doubt, elsewhere. We shall be glad to have information of other trees.—Eds.]

It is reported that the San Joaquin Valley Sugar Company will pay the freight on all beets received from all parts of the valley to its mill on an equality.

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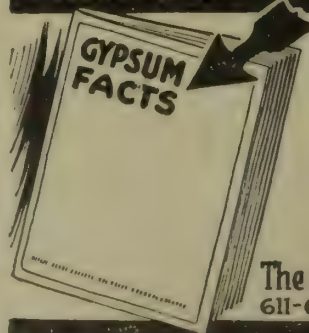
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Co-operative vs. Individual Marketing.

[Written for Pacific Rural Press.]

On Sept. 29 Frank Swett of Alhambra Valley shipped a carload of dried French prunes to San Jose. The carload contained 20 tons of prunes and brought \$2850, being probably one of the highest-priced cars of prunes ever leaving Contra Costa county. The prunes were grown on seven acres, making the gross returns about \$400 an acre, from which, of course, expenses of pruning, plowing and spraying must be deducted. The harvesting of the crop was done by the small boys of Martinez during their vacation, who picked the prunes from the ground one by one. They received \$5 a fresh ton, and earned up to \$2.50 a day.

Mr. Swett attributed the good price received, almost 7 cents a pound (a "basis" price of 5½ cents) to information received through the Prune and Apricot Bureau of Information, whose offices are at San Jose.

Prune growers should make use of this growers' organization, which charges only 20 cents a ton on the product handled. A few only of the Contra Costa growers sold through the Bureau this season. The grower seldom knows what is going on elsewhere in the State, until after things happen and such knowledge is useless for marketing purposes. It is good for the speculator, who expatiates to the farmer on the "big crops elsewhere," pokes forward a fountain pen, and gets a sign-up.

Most of the prunes of the county, instead of bringing a 5½ cent basis, brought from 4 to 4¼ cents. In many cases the buyers made more money in ten minutes' talk than the grower did in one year's work. One uninformed farmer who sold the crop from a large orchard, lost between \$3000 and \$4000 in failing to obtain the market price. He had been urged to join the growers' organization at the trifling expense of less than \$20, but neglected to do so. As a community proposition, it is far better if the profits remain in the community, and are spent there, than to have some outside speculator carry away the \$4000—to buy, perhaps, champagne and supersixes.

When the speculator buys from the uninformed and unbusinesslike farmer at low prices, do you think the consumer gets the benefit of it? Not on your birthday!

Contra Costa's agriculture will never be really prosperous until our fruit-growers and farmers organize so as to get a fair share of the consumer's dollar. While the packer and merchant should have a fair share, with proper co-operative effort the products of the farm can be sold to the consumer at a fair price, and packer and farmer reap a reasonable recompense for investment and work. Will the farmers of Contra Costa see a light, and avail themselves of the opportunities now offered through the activities of the State Market Commission, and through co-operative organizations now being formed elsewhere, or will they be content to struggle along, as in the past, making a little money in good years, and running behind, and getting into debt in the bad years?

Let's be optimistic, and for the good of the community hope that they will join in the onward march of agricultural progress.

Contra Costa.

MR. ETTER ON A GREAT APPLE TRAIL.

To the Editor: I am sending a collection of some of my new varieties of apples. I have pried the lid up enough to peek under and it looks good to me—a veritable treasure house that is going to give us new apples in varieties by the hundred. The prospect looks so encouraging to me that I am proceeding to develop thousands of seedlings. The preliminary work is now done and the light good to go ahead at full speed. The whole problem is now as simple as breeding up a herd of good dairy cows when one has a good herd to begin with. I have probably 50 varieties as good as those I am now sending because they are now ripe. I will probably send more samples later as they ripen.

Albert F. Etter.

Ettersburg, Humboldt Co.

[The foregoing is a personal note, which we take the liberty of printing because it reveals the spirit and enterprise of the writer better than we could describe them in a column of type. The apples, which came through the parcels post as sound as a shipment of baseballs, show a basic shipping character like our best winter apples which is invaluable in a lot of apples ripening so early. They are remarkably beautiful, juicy and crisp, which they must be to be really good. There is great variety in solid hues and in stripes and they have a clear, waxen finish which is notable in a bunch of apples grown so near the coast. It seems to us that Mr. Etter has the stuff in himself and in the strains he is working with to mark the apple list of the next generation all over with California varieties. And fortunately he is still young enough to do this before he can get old and lazy.—Eds.]

TULARE CO. FRUIT PLANTINGS, 1916.

[Written for Pacific Rural Press.]

"Probably prunes, peaches, figs, olives, oranges, lemons, and grapefruit represent 90 per cent of the planting," writes Tulare County Horticultural Commissioner Chas. F. Collins. In addition to the common fruits planted, the following were shipped into Tulare county last season, according to Mr. Collins: Pomegranates 2896 trees; grapefruit 1208; persimmons 566; avocados 371; nectarines 350; quinces 281; grape cuttings 798; fig cuttings 112; rooted olive cuttings 170,000; plum seedlings 50,000; orange seedlings 7000; apple seedlings 5,000; pear seedlings 5,000; and cherry seedlings 3,000. Over 40,000 ornamental trees were shipped into the county last year, beside numerous subtropical fruits and nuts.

It has been definitely announced the sugar refinery in Fallon, Nev., will be operated next season.

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How a Muscat Crop Was Doubled.

It Didn't Look Reasonable, but Instructions Were Followed and the Crop Harvested. The Methods Are Given Here and in Other Articles to Come.

[Written for Pacific Rural Press.]

The crops from 37 acres of Muscats 30 years old have been about the following as estimated by A. B. Cate of Fresno county for the years he has worked that block, beginning in 1910: About 22 tons of raisins, in 1910; 27 next year; and 50, 37, 30, 35, and 70 tons, the last figure representing this year's crop.

Here is how Mr. Cate says the crop was developed.

There are differing conditions requiring half a dozen different treatments of various parts of Mr. Cate's vineyard. One corner, including three acres, was plowed and cross cultivated but never watered. From one vine in this piece we picked on Sept. 15, two overly full raisin trays.

Another corner was plowed, cultivated twice, then watered three times and cultivated twice after each irrigation. Mr. Cate emphasizes the fact that Frank Henry's system of grape culture which he followed implicitly this year, is a matter of observing the needs of the vines under the varying conditions, and no rules can be followed without inspection weekly or nearly as often and special instructions according to conditions of soil and water-table as indicated by the vines.

Yet Mr. Henry makes no secret of his methods nor of the "why" of them. Some people have applied them half-heartedly or incompletely, some have hated to admit that a young man could tell them anything about grape growing; and there is some opposition to discussion of the Henry system. Half understanding it or half doing it does not produce results and does produce knockers.

But where followed consistently, it has produced remarkable results for two years, and this fall's crop of fruit and fruit canes for next year justifies our faith as exhibited in previous articles.

System.—The weaker vines were pruned in February to avoid "bleeding." The stronger ones were pruned in March so they would bleed and hold back spring growth till after danger of frost.

Right after pruning, the orchard was cultivated both ways with Planet Jr. Shovels, to conserve winter moisture. When shoots were three to six inches long and forms of bunches were just beginning to show, the plowing was begun, lasting from April 4 to 22. This cut many surface roots, and prevented the run of excess moisture to the bunches at blooming time, which Mr. Henry claims is the usual cause of coulure, or failure of grapes to set on the bunches.

Before plowing was done, "pinching" was begun, lasting Apr. 15 to 23. The tip was pinched or broken off above every form of a bunch. This not only diverted what sap was flowing in the vines, from the tips into the bunches, enlarging the stems while they were yet soft, but it also caused laterals to be promptly thrown out which bore a second crop so early that the second crop ripened almost with the first and was picked at the same time, a little later than many crops. The pinching took 23 days' work, figured at \$2 per day.

Sap flow was further discouraged during blooming in May, by not cultivating; so that the ground dried out considerably. Seven days of team work are recorded in that month, cultivation having begun late in May when grapes were just set or up to the size of peas. This cultivation was designed to save whatever of moisture was left in the ground.

The first irrigation was a light flooding June 13 on 34 acres. This took six or seven days and nights with two feet of water. Cultivation

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in half boxes on New York auction Sept. 21. Concede in similar packages sold for \$3.60. These and all other leading commercial varieties—all grown on Blight-Proof and Aphid-Resistant roots—simply tree perfection. While we sell all kinds of nursery stock we specialize in pear trees of **HIGHEST QUALITY**. Supply quite limited and selling fast. Write for prices, if you appreciate high-grade trees, stating quantity you will plant and describing your soil. Our advice on varieties costs nothing but may make a big difference in your profits.

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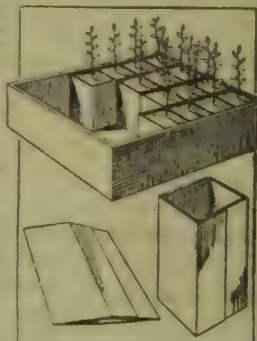
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was started on this rather light soil, two days after beginning irrigation. The subsoil is sandy with no hardpan, and the water-table has been found four to seven feet down, in June.

Following irrigation, the vineyard was cultivated both ways, then harrowed both ways to a fine mellow condition. The second irrigation came a month after the first, and similar cultivation followed immediately. This irrigation took four days and three nights with three "feet" of water. An extra irrigation was given later along a row of fig trees which were taking more moisture than the vines alone would. Team work took 12 days in July, cultivating. Otherwise than two sulphurings, nothing more was done until picking time.

Expenses up to June, aside from Mr. Henry's pay and the sulphur, were not over \$10 per acre, as figured on three different blocks, including this one. But there was more watering and cultivation after June 1 of this year, than ever before after June 1.

Difference from Previous Years.—To make the preceding half crops, Mr. Cate had started team work in March, plowing twice but not quite so deep, long before blooming. He did nothing much with the team in April, but kept it busy through May, with a let up in June and only seven days in July. He flooded in March after the first plowing, and again by furrows from tubes in ditch banks, in June, right after cultivation.

Pruning.—The winter pruning was done differently this year than before, but that makes another story.

FORTY-NINTH STATE FRUIT GROWERS' CONVENTION.

The program for the Forty-ninth State Fruit Growers' Convention, which is to be held at Napa, California, November 15th, 16th, and 17th, is already assuming definite form. The mayor of Napa has consented to give the address of welcome. The response by the State Commissioner of Horticulture will be followed by the report of the Committee on Horticultural legislation. The dried pear industry of California will be discussed by Fred G. Stokes of Kelseyville, Lake county. A topic which is particularly of interest at this time is the Standardization Law. The weaknesses of this Act will be discussed by Mr. F. B. McKeivitt, president of the California Fruit Distributors, who has had a large experience in the workings of this enactment. Mr. Fred P. Roullard, horticultural commissioner of Fresno county, will give a short talk on the practical application of the law as applied to grapes. Further discussion of the Standardization Law in its relation to the shipment of fresh deciduous fruit will be given by Mr. H. E. Butler, of Penryn. The practical application of the law with cantaloupes will probably be discussed by Mr. W. Fawcett, of El Centro. The future of the wine grape industry will be presented by Mr. E. M. Sheehan, Secretary of the State Viticultural Commission. The future of the raisin industry will be given by Mr. James Madison, manager of the California Associated

Raisin Company. The Prune and Apricot Growers' Bureau will be discussed, as will the subject "Marketing through the Medium of the Parcel Post," speakers yet to be selected. The subject "The Scientific Distribution of Farm Products" will be ably presented by Colonel Harris Weinstock, who needs no introduction to the California fruit growers. A general discussion will follow this topic.

Professor Elwood Mead, of the University of California, and the California State Commission on Colonization and Rural Credit, has consented to talk on Rural Credits.

Other subjects for which speakers have not yet been chosen are: "The Peach Growers' Association"; "The Farmers' Free Market," and "The

Disposition of Fruit below the Established Standard."

"The California Farmer and the College of Agriculture" will, in all probability, be given by Dr. T. F. Hunt, Director of the California Agricultural Experiment Station. "The Improvement of Nursery Stock" will be discussed by the following well-known nurserymen: Mr. Geo. C. Roeding of Fresno; Leonard C. Coates of Morganhill, and A. L. Wisker of Grass Valley.

MISCELLANEOUS.

Yucaipa held an apple show Oct. 5 to 7.

Ventura County foothill lima beans are making 35 sacks per acre this year, about 5 sacks better than last.

About the best and tallest corn

we have seen, grew this year in the Kings River bottoms of Fresno county.

Sixty varieties of produce from one ranch won first prize in that class at the Fresno District Fair for A. B. Cate of Clovis.

Deciduous trees in Southern California are losing their leaves earlier than usual, and an earlier movement of nursery stock is expected.

The new method of grading peaches and the reasonable price offered will be the salvation of the peach industry, says a letter to the California Peach Growers, Inc. from a large Eastern jobbing house.

An absolute quarantine against all imported citrus fruits, trees, buds, and scions has been established by Acting Commissioner of Horticulture Geo. P. Weldon. It is a precautionary measure against the introduction into California of the citrus canker.

Let Trees Grow Up With Him and Make Him Rich



Start This Season

Plant an orchard for your boy—even though it be only a few trees to start with. The years go by rapidly and it does not take long to double and treble the value of land with a well planted, well kept up orchard.

But when you plant-----Be sure you plant Roeding's True Trees

—known all over the world for their splendid quality—vigorous, hardy, prolific, true to name. You know that fruit growing is the most profitable end of farming, but as it takes some time for the trees to come into bearing, it pays to make sure in the first place that the trees you plant are of pedigreed stock and will produce fancy fruit—the kind that brings fancy prices.

We grow everything that grows



Fruit and Ornamental Trees, Vines, Shrubs

For the coming season we have a magnificent stock of nearly everything wanted by the planter—apricots, almonds, apples, pears, plums, prunes, peaches, nectarines, cherries, walnuts, pecans, olives, oranges, lemons—evergreens, palms, roses, climbing and trailing vines, border plants, etc.

We'll gladly advise with you—FREE

Whether you purchase of us or not we will gladly give you the benefit of our many years of experience. Tell us the nature of your land and what you propose to set out. It will cost you nothing to get Roeding's advice and quotations. Write us today.

Fancher Creek Nurseries

Geo. C. Roeding
President & Manager

402 Holland Bldg.
Fresno. Cal.

Mechanical Power on the Farm.

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of your experiences and troubles.

CRITICISMS OF A TRACTOR USER.

[Written for Pacific Rural Press by S. I. Merrill, Kern County.]

Three years ago, myself and two adult sons, owning jointly over eleven hundred acres of land which was strongly addicted to growing sagebrush without irrigation, decided to reform this propensity of the land by trying to grow crops on it of more marketable value by the aid of irrigation. A tractor was deemed a wise investment, and we began with a 75 h.p., large-wheel tractor. We found it nicely adapted to hauling big loads on good roads, but it was too heavy to work well upon our soil without extensions to the wheels, and we had no extensions to put on. After two months, we sorrowfully set it aside, and purchased a new track-type tractor, because our plows and other implements were too heavy for teams, and we had not, up to that time, derived all the tractor experience that was "coming to us." We believed that a track-type machine was more suitable to our soil and for carrying out our plans, and we have not been disappointed. We are not therefore detractors of tractors; but tractor manufacturer's methods can in some directions be considerably improved upon.

A tractor, for some kinds of work, is all right. It splendidly fills a need, therefore has a place, but, it should be kept in its place. On large farms that grow sugar beets, grain, and similar crops, nothing can take the place of large tractors for economy and big accomplishment. Manufacturers should, by all means, be encouraged to make them, but in their eagerness to sell them they should not forget the principle of the Golden Rule and they should be cautioned against trying to put their tractor in the wrong place. As an example: A large powered tractor from 30 h.p. upward, to do all kinds of work on a farm, is neither right, wise management, nor profitable in the long run, and such practice will react upon the concern that advertises it.

High power tractors cannot pump water as cheaply as stationary engines, nor perform any stationary work as economically as small engines or electric motors can. They are valuable for developing new water wells to ascertain what size engine will be needed to pump what water the well will produce, but to urge their use for running corn shellers, small domestic water pumps, sawing wood, and doing a lot of things that engines and electric motors of three and five h.p. can do at one-tenth the expense is worse than foolishness. A person is never justified in running a big machine to perform little work on the ground merely that he has a large investment in a machine and he wants to keep it working. An emergency may sometimes compel the use of an expensive "makeshift," but ultimately, "makeshifts" are almost always expensive if long continued. The extra cost of running a large machine in wear, fuel, lubricating

oil would, if saved, soon buy a small engine to run the small units.

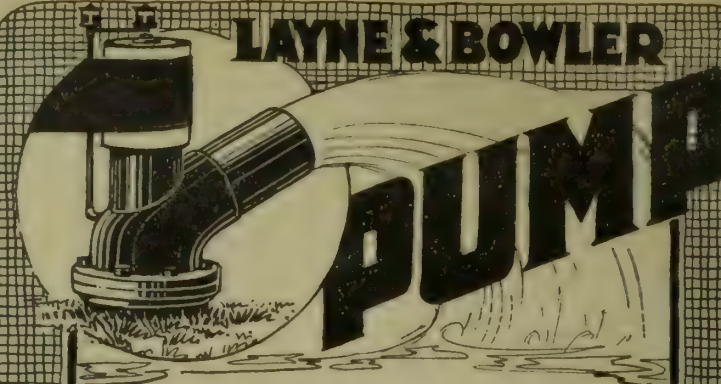
There is a field for large power tractors—there is where they belong—in the field. They do not successfully compete with teams on irrigated farms where the irrigating checks are small or irregular in shape. A tractor may turn around in a twenty foot space, but it cannot drag its plows and other implements around and do efficient work there.

We are strongly pro-machinery men for farming. We have an automobile, a motor truck, and other machinery. We tried, at first, to do without horses, but, living as we do in an irrigated district it was found that a team is indispensable. After borrowing and hiring teams from time to time, and paying over a hundred dollars in this way, we bought a team and equipment for ourselves.

Tractors of large size are excellent for doing certain kinds of contract work, for then they are run as near to their full capacity and endurance as possible. It is a false statement that "when they are not working they do not eat, as teams do," when the statement is intended to convey an idea that they can be allowed to remain idle more economically than where teams are used. Large size tractors cost from \$3,000 to \$6,000 including the implements that go with them, which, at eight per cent interest eats \$240 to \$480 a year. Depreciation and upkeep eats 20 per cent or from \$600 to \$1,200 a year more. Taxes eat some. Loss of time eats when something goes wrong, or some part breaks and a long-time wait occurs to get a needed part from the factory, which is not infrequent. If a horse or mule gets sick or disabled another can be borrowed or hired near by. Not so with disabled machinery; only one place to get it and the price is on a non-competitive basis. Nor does the manufacturer's guarantee afford much relief to the buyer, because he is not reimbursed for his lost time and other losses; not even the freight is borne by the factory on the defective parts.

It would be only fair if the factory were compelled to pay a reasonable amount of the loss sustained by a purchaser whenever it can be clearly shown that bad workmanship, negligence of employees, or mismanagement on the part of the factory, has imposed such loss upon the purchaser. We lost \$250 including six weeks' time on our tractor just because the oil level was not properly placed before it left the factory. They refused to make reparation, and we could get no redress without a law suit. The factory claimed that they were not obligated to do more than to re-bore the cylinders, and required us to pay the freight both ways, notwithstanding that the fault originated in their own factory.

It is true that teams get tired and have to stop occasionally to rest. It is just as true that tractors have to be stopped occasionally to "screw



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A significant consideration for the prospective pump purchaser is that the majority of those who have difficult pumping problems to solve finally select the Layne & Bowler Pump. With over 20 different styles of Layne & Bowler Pumps to select from, you are able to get practically a made-to-order pump at the price of a regular stock pump. Consult with us now and we will show you positively how you can produce absolutely the cheapest water. Our Catalog No. 25 is brimful of interesting information. Ask for a copy.

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 WORLD'S LARGEST WATER DEVELOPERS.



ZEROLENE

the Standard Oil for Motor Cars

From Western Crude—
 Western, Asphalt-base, crude makes the highest grade motor oil, not only in our opinion, but also in the opinion of unprejudiced experts and of increasing thousands of satisfied users.

Sold by dealers everywhere and at all Service Stations of the Standard Oil Company (California)

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For Every Purpose NEW Threads & Couplings Hot Asphaltum Dipped

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Second Hand and NEW

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Fittings and Screw Casings Valves Guaranteed for Pressure


E

Pacific Pipe Co.

Main and Howard Streets, San Francisco, Calif.

up the grease cups" and to see that the bearings are running cool; to keep the water tank supplied; to take out spark plugs and clean them when "she is running on only three cylinders instead of four," and some other stoppages that are more tiresome and exasperating than sitting down while the team rests. When teams are not working they at least produce a valuable fertilizer, and tractors do not.

The cost of feeding a team is under ten dollars a month when employed, and less when they are in pasture, and the farmer grows the feed. The cost of keeping a tractor when idle, amounts to, as previously shown, \$75 to \$150 a month in interest, depreciation, taxes, etc. The



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C & S
 AXLE GREASE
 WHITTIER-COBURN CO.
 SAN FRANCISCO CALIF.

If there is merit in age, then C. & S. Axle Grease deserves your trade, as it is the oldest, and has stood the test of time.

WHITTIER-COBURN COMPANY
 San Francisco

SAVE HALF YOUR ENGINE MONEY

1 If I can make only \$1 clear profit on each engine I sell, I can buy a good farm each year. What more could I ask?

2 Regardless of price and profit, I am building just as good an engine as I know how. The name WITTE will never appear on any but high quality engines.

3 WITTE engines are built by experts—men who do nothing but specialize on engines. It has taken me 30 years' hard work to build up my factory organization. These men hold their jobs because I believe that each is the best in the country in his line.

4 Our own natural gas well right in the factory furnishes free fuel for power. Without this, the coal bill would run thousands of dollars a year. You get the benefit of this saving.

5 WITTE engines are sold only direct from factory to user. Former retail prices on my engines were more than double present prices.

6 There is a clean business record of 47 years, and an engine building record of 20 years, back of every WITTE engine—never a "failure"—a consistent "spot cash" record. That is why we can buy material at rock bottom prices.

7 A wonderful factory equipment. By devoting the energy of the factory to exclusive engine building, I have been able to construct a great system of machinery that, in the hands of my experts, makes all parts with exactness and great speed.

Just write your name and address on a postal card or scrap of paper with the words "How to Judge Engines," and we will send our new, valuable, big book on engines absolutely free. Also our

90-Day Trial Offer
Easy Terms of Payment
5-Year Guarantee

Remember, we have no dealer in your town to describe our engines to you. You must write to us if you want a WITTE.—Ed. H. Witte,

WITTE ENGINE WORKS,
286; Oakland Avenue, Kansas City, Mo.
2862 Empire Bldg., Pittsburgh, Pa.

Mr. Farmer

WINTER IS APPROACHING

HOW ABOUT YOUR FARM BUILDINGS?

Are they in shape to protect your crops, your stock, your machinery, implements, etc.?

Remember that galvanized iron building materials are practically everlasting.

We can supply complete lines of V-crimped roofing and siding, metal shingles, roof gutters, etc.

Also stock watering troughs, tanks, and A. I. Irrigation Pipe.

Let us know what you need in galvanized iron materials. We are in a position to supply you.

AMES IRVIN CO.

8th and Irwin Sts.,
San Francisco.

tractor can do the work of from fourteen to thirty teams, so that, on large jobs of plowing and other work where the full power of the tractor can be utilized, and for long periods, tractors are pre-eminent. But farm work only calls for such periods occasionally, and so a farmer would better study carefully his needs, before getting high-priced machinery. A low power tractor might suit his requirements better, and at very much less cost, or he might find it best to continue with teams.

Farms are being specialized, so should tractors. There are grain farms, dairy farms, citrus groves and deciduous orchards; why not a special tractor for each class? Why expect unreasonable things of a tractor, and think one should be built to perform all the requirements for power on the farm. A farmer having much driving to do does not use his heavy team to do it; he buys a light driving team that will do the work easier and better. Nor does he buy a heavy farm wagon with a view of taking his family to church in it, although it might serve the purpose after a fashion; he buys another vehicle for that purpose if he is at all progressive. Heavy power for heavy work; light power for light, is the only motto that harmonizes with the trite business maxim—"Maximum of results with minimum of expense."

And so with tractors. The manufacturer who will carefully select his field and then make a tractor that will fill the needs of that field; who, like Henry Ford, will aim to reduce the price and improve the quality each year; who will place repair parts in the hands of tractor owners at a slight advance over cost of production; who will promptly, faithfully and generously treat all complaints as they arise; whose settled policy shall be: We serve our customers, not exploit them—will find that such a policy will sell more tractors than a display room hung with gold medals and blue ribbons.

POWER NOTES.

Power lift gang plows of several makes caused much comment at the Puente tractor demonstration.

On two days the driver of the big Caterpillar at Puente did not pull his clutch from beginning to end of the general public demonstration.

Round wheeled tractors with long grousers seemed at the Puente demonstration to cut up and loosen the hard ground whether on top or in the furrows, putting it in better shape to turn under.

The University Farm offers a free Short Course to teach farmers how to drive tractors economically. It will come off Nov. 10 to 24. Yuba, Holt, and Best machines are now available for study.

A farmhand makes a better driver than a mechanic for the small tractor, because the mechanic gets careless on a simple machine, while the farm hand watches it carefully, keeping oil and bolts properly adjusted, says an experienced tractor man.

Four Big Bulls are used on a 240-acre orange orchard by E. W. Kilian of Tulare county. Except in the busiest season, some of them may be overhauled by a mechanic while farm hands operate the others under orders not to tamper with the machinery.

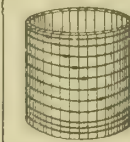
The Bates Steel Mule Co. begins a contest Oct. 1 for 10 prizes totaling \$1000 to be paid its customers for greatest efficiency in work, at least cost of upkeep. Contestants must make out reports showing work done with the tractor each day and the attention given to it. This keeps the company in close touch and enables them to recommend better practices. Contestants are guaran-

teed that upkeep cost will not exceed 25 cents per acre per year.

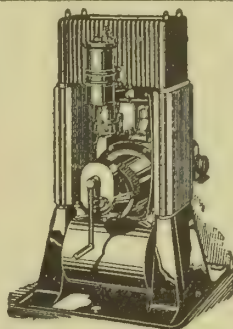
YUBA BALL TREAD TRACTORS

Are you a county Supervisor, or are you a taxpayer and want to see your county build good roads economically; or do you know that in either case the saving is being effected every day by other county officials, with the Yuba Tractor?

THE YUBA CONSTRUCTION CO
DEPARTMENT A113
433 CALIFORNIA ST.
SAN FRANCISCO CALIF.



REDWOOD TANKS—SILOS.
Thirty-five years in this business in Stockton.—A 500-gallon tank, \$8.00. A tank 6 ft x 2 1/2 ft., \$7.50. Other tanks equally cheap. I deal direct with the consumer, saving 10% to 25%. All sizes in stock. Clear dry redwood direct from the mill. Write for price today. Latest improved machinery. Doors, Windows, Frames, Mouldings.
W. P. WILSON. STOCKTON, CAL.



Uni-Lectric
GASOLINE-ELECTRIC UNIT
LIGHTING SYSTEM

Electricity for Farm Homes

At one-third cost of juice from Power Company, (thus includes interest on cost of plant). It is the simplest and most economical plant on the market.

No Batteries - No Switchboard - No Rheostat.

Will operate 50 lights 7 1/2 hours for 11c. Will also operate electric fans, irons, small motors, etc. If your buildings are not wired, send us plans and we will give you full instructions so that you can wire them yourselves. Material furnished at lowest cost.

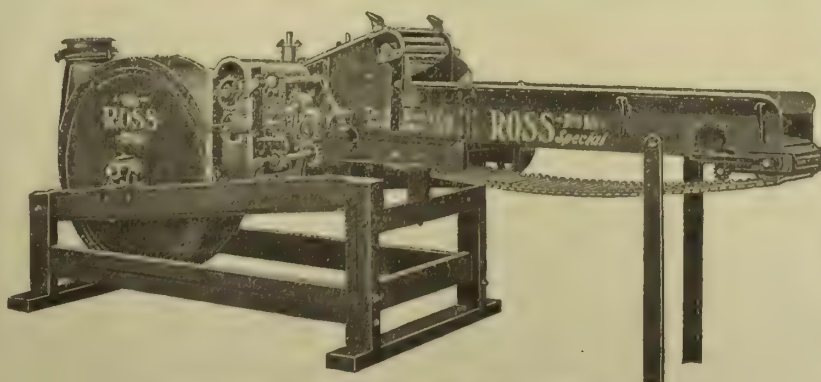
Karl A. Hedberg Co., Inc.

Electrical Engineers.

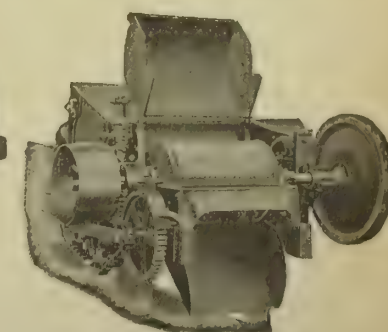
104 Clay St.,

San Francisco, Cal.

ROSS SILO FILLERS With Alfalfa Grinding Attachment



No. 16 Ross Cutter with Compression Web.



The Humphrey Patent Alfalfa Grinding Attachment.

The Humphrey Patent Grinding attachment illustrated above is the latest addition to the Ross line. By its use a merchantable alfalfa meal can be produced at a minimum cost. Furnished with license plate releasing purchasers from all liability under patent infringement suits.

A minimum amount of power is required, and we guarantee greater capacity for the Ross line, either with or without the Grinding Attachment, than any other make of feed cutters. The most complete line of all sizes and styles carried in the Pacific Coast.

WRITE FOR COMPLETE SILO FILLER CATALOG.

Parlin & Orendorff Co.
Portland, Ore.

Baker & Hamilton,
San Francisco, Cal.

Dixon & Griswold,
Los Angeles, Cal.

General Agricultural Review.

DECIDUOUS FRUITS.

The largest part of the Hollister prune and apricot crop has been sold, and is now in hands of packers.

The packing business of the California Peach Growers promises to be one of the important industries in Suisun.

County Horticultural Commissioner Chas. F. Collins believes the total fruit and grape crop of Tulare county has been a record breaker.

Over nine tons of Bartlett pears were picked from 70 trees in Lake county by Ray Huston and Claude Rowden this year, and were sold for \$40 per ton.

W. C. Chisholm, located near Windsor, Sonoma county, has sold his crop of prunes, probably the largest in Sonoma county, this year. It is estimated at 75 tons of dried fruit.

One hundred thousand cases of canned peaches was the output of the Central California Cannery at Yuba City this season. Last year year about 42,000 cases of peaches were packed.

George N. Herbert has purchased 110 acres of the Thomas Fisher estate, a short distance south of Coyote, for between \$70,000 and \$75,000. Mr. Herbert stated that he purchased the property owing to the great richness of the soil, which he considers the best prune land in the valley. His 25 years' experience in the packing business has taught him that the largest and highest quality prunes are raised in the territory running from Edenvale to several miles south of Coyote. He stated also that the biggest production of prunes comes from this section.

CITRUS, NUTS, SEMI-TROPICAL.

Over 250 carloads of lemons were shipped from Santa Barbara this season.

Growers are sending out a carload of almonds daily from their warehouse at Oakley.

Ten thousand olive trees have been set out, and 4,000 more will be planted next spring in the little town of La Grange, in the eastern part of Stanislaus county.

The Banning Almond Growers' Association shipped five carloads of nuts recently, most of them going to the State Association warehouse for distribution.

G. W. Pierce, president of the California Almond Growers' Exchange, will visit every almond growers' association in California and interview personally as many of the 1265 member growers as possible.

Appearances indicate that the Santa Barbara olive crop will be but one-third of what it was last year. The Santa Barbara Olive company is planning the erection of a factory shipped from Santa Barbara this on the Modoc road outside the city.

The walnut crop in Goleta valley ran almost 93 per cent No. 1's, according to grading done at the Goleta walnut house. The association pays the growers 15½ cents a pound for the No. 1 nuts, No. 2 bringing 12½ cents a pound.

The sale of the Fogg olive grove of forty acres in Thermalito to the Ehmann Olive Company has been announced. It is understood the price was in the neighborhood of \$50,000. The grove was planted twenty-eight years ago, and has a State-wide reputation for producing large olives.

The Riverside Citrus Experiment Station is planning an orchard institute to take place the third week in November, when ranchers and those interested in agricultural subjects will be welcomed at the station and a splendid series of programs will be presented. Cultivation, irrigation, fertilization, test control and other subjects will be discussed.

The first carload of figs from the

Bald Eagle ranch owned by the McHenry Brothers, located just west of Modesto, has been contracted to the Roeding Fig and Olive Company of Fresno. This fig orchard comprises 42 acres. The trees are twenty-nine years old. This is the largest bearing orchard of the kind on the coast. The crop is heavier than ever—six carloads or 360,000 pounds being now ready for sulphuring. They are Calimyrnas.

GRAPES.

Table grapes have been shipped East in good quantities from Merced, Atwater and Livingston, and for the first time in years wine grapes are being sent East in quantity. Five cars of the latter went to Chicago on one day recently. The recent rain did practically no damage to the fruit in that section.

While there have been heavy grape shipments of Tokays to the East from Lodi district this season, the berries are not as large, as uniform, or as well colored as they were last season. The wide range of prices shows that a quantity of inferior grapes have been shipped. However, the outcome of the season will be satisfactory to the growers.

FIELD CROPS.

A fine seed bean crop is being harvested in the Santa Ynez valley.

The bean crop in Yolo county is 100 per cent better than last year.

The damage to drying beans from rain in Ventura county has not been serious.

In the Imperial Valley two bales of cotton to the acre is grown this year in some instances.

The Visalia Sugar Factory ran for twelve weeks this season, the longest consecutive run on record.

It has been definitely announced the sugar refinery in Fallon, Nev., will be operated next season.

A new variety of rice (No. 81) developed in Butte is proving most successful. It is an early ripening rice.

The Riverside and Arlington Chambers of Commerce want a beet sugar factory for the Riverside district.

Some Yolo county people are busy dredging the outlet of Clear Lake, so as to get more water for the rice fields in the valley.

Pound for pound, Imperial valley cotton is more profitable to the grower because the bright sunlight of the valley bleaches it.

The sale of 100 bales of cotton in the Brawley district has started the buyers to come to Brawley and the rush season is now on.

A party of Japanese students and professors has been in Tulare studying the rice and fruit industries of Tulare and the Tulare lake region.

MONTHLY CROP REPORT.

From the State Commission of Horticulture at Sacramento the following estimate of citrus fruit was sent out as of Oct. 1st: Oranges in the six principal producing counties are estimated for the coming crop as follows: Los Angeles 90 per cent; Orange 100, Riverside 80, San Bernardino 95, Tulare 90, Ventura 100. These six counties are credited with producing 96 per cent of the oranges grown in the State, and the report indicates the prospect of a very large yield. In the seven principal lemon counties, producing 97 per cent, the crop estimate is: Los Angeles 90, Orange 100, Riverside 90, San Bernardino 90, San Diego 75, Tulare 95, Ventura 100.

Olives are estimated in the 15 principal producing counties as follows: Butte 40, Fresno 100, Los Angeles 80, Madera 100, Riverside 60, Sacramento 80, San Bernardino 75, San Diego 100, San Joaquin 75, Santa Barbara 100, Sonoma 75, Tehama 33, Tulare 90, Yolo 60, Yuba 60.

CORN AND ALFALFA IN LAKE CO.

[Written for Pacific Rural Press.]

The McKinley Brothers, one mile north of Middletown, Lake county, are the lucky owners of a \$200 silo. It is the first one in this part of the country. In spite of cool and dry weather in the spring, the boys raised corn enough to fill it the first year, giving them about 60 tons of silage. They also raised five cuttings of alfalfa, giving their milk stock a good ration for the winter. A sixth cutting of alfalfa could have been obtained, but owing to the extra work of silo-building the cows were left to graze this last crop. The boys intend to seed some of their land to alfalfa every year. Water for irrigation is obtained from a creek on their place. In the summer a good market for butter is found right at home. The nearby health resorts are good customers. Durham cows are kept on the place, crossed with Holstein bulls.

Mr. R. M. Collins is another successful alfalfa grower. All his low land is seeded. Mr. Collins has planted the high land to walnuts, which are doing well.

RAIN DAMAGES GRAPES.

While it is too early to say, at this writing (Monday), to what extent the raisin crop of Fresno county has been damaged by rain, it is sure to be considerable. The heaviest loss is anticipated in vineyards where paper trays were used, it being impossible to stack them and the water both on top and bottom is certain to cause mildew. Even those vineyardists who had wooden trays will suffer a loss because of scarcity of labor for stacking. Raisin men predict a still heavier loss if the rain continues as many of those in stacks need sunshine already.

Green grape shipments have been cut in half and while some of the Malagas will be cleaner and more marketable, lower bunches will be spoiled. It is not thought that the Emperor crop will be affected.



Premier Leader 215000
THE JUNIOR YEARLING BOAR
(that defeated
RIVAL'S ROBIN 2ND,
Grand Champion
At Sacramento State Fair,
AT

THE STANISLAUS LIVE STOCK
SHOW & EXPOSITION.
Sept. 18-23rd, 1916.

Special this week:
Six Good Service Boars.

Geo. M. York & Son

Berkshire Breeders.

RHUBARB

OCTOBER, NOVEMBER
AND DECEMBER

Are three of the best
months to plant
WAGNER'S IMPROVED
WINTER RHUBARB.

Splendid results should be
derived by Spring. Greatly
reduced prices for Fall
planting. Also Berries,
Small Fruit and Cactus.

Write—
J.B. WAGNER
Rhubarb-Berry & Cactus Specialist
PASADENA, CALIFORNIA



Sanitary Barn and Dairy Equipment

Catalogs and Barn Plan Books Free.

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68 Fremont St., San Francisco.

FRUIT TREES THAT PRODUCE

You can't get good big crops of good fruit from poor trees. Elmer Bros. Trees produce because they are clean and healthy—strongly rooted—budded from trees of proven productiveness—and are properly handled from the time they are put into the ground until they are dug and delivered to you.

WE MAKE A SPECIALTY OF THE LOSSE APRICOT—THE FINEST GOT ON THE MARKET TODAY. UNSURPASSED FOR SIZE, COLOR, QUALITY, AND ALL-ROUND MERIT. WE SELL THE GENUINE ORIGINAL LOSSE STRAIN.

ELMER BROS. NURSERY

"The Nursery that Helped to Make Santa Clara Valley Famous."

78 SOUTH MARKET STREET,

SAN JOSE, CAL.

KIRKMAN NURSERIES

WHOLESALE GROWERS OF

TRUE TO NAME NURSERY STOCK

Let us book your order now.

MAIN OFFICE: 2523 TULARE STREET,

FRESNO, CALIF.

Live Stock and Dairy Notes.

(Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.)

DAIRYING AND DAIRYMEN.

C. H. Schmidt of Selma is reported as a new breeder of purebred Guernseys.

Mr. G. W. Stone of Tracy will establish a milk-sterilizing plant at Watsonville in every way up to date.

H. K. Kinkead, near Fallon, Nev., has the largest dairy in this district. He expects to milk 100 cows this winter.

Frank A. Tetley of Riverside has sold the fine herd of Holsteins on his Calxico ranch, which will be leased for a term of years.

Forsberg Bros., who own the Alfarada dairy at Fallon, Nev., have recently erected a silo—one of the very few in that State.

Members of the California Creamery Operators' Association spent a day at Arcata, where a thousand farmers assembled to greet them.

Under the new State law which went into effect Oct. 1 all milk food products must be pasteurized unless obtained from non-tuberculous cows.

The manufacture of casein from skim-milk has been started by the Milk Products Corporation of Delaware at its plant just completed in Modesto.

The San Luis Obispo Dairy Breeding Association has appointed a new board of directors, one representative from each of the districts embraced in its membership.

The University of Nevada recently purchased a herd of 22 grade Holsteins to be used wholly for the purpose of feeding dairy products to the students in the dining room.

Arlington Smith of Visalia has purchased four registered Ayrshire heifers and a registered bull from Steybrae Farm, San Mateo county, which he will use for foundation purposes.

Frank Helm of Fresno is founding a herd of registered Guernsey cattle at his ranch near Fresno, the milk from which, together with that from his registered Holstein herd, will be certified.

A note from C. D. Conway of Ripon states that our report of the Chester White swine awards at the Modesto fair was not correct, in that her aged sow Edna Aug No. 3775 was awarded first prize. Her hogs were also awarded first prize at the Ripon fair.

About 40 of the boys of the Gardena Agricultural High School will attend the Rancho Santa Anita purebred livestock sale as part of their class work. They hope to hear breeders' criticisms and learn to be better judges of cow values, according to Prof. J. B. Lillard.

Bull calves out of Alba Sadie Cornucopia Creetia, the State record Holstein cow, Miss Valley Mead De Kol Walker, State record senior two-year-old, and Mosetta Mutual Paul Johanna, a promising world record cow, and a son of Prince Gelache Walker, will be sold at the October sale of the Santa Anita Rancho. This is high class stock.

The Danish Creamery Association of Fresno gives gross receipts for

August at approximately \$100,000 and the production in excess of 300,000 pounds of butterfat. The payroll for the month amounted to \$47,582. The production was 150,870. The average price was 32 cents per pound, 1 cent a pound higher than August of last year. In August, 1915, the receipts were \$42,692.78 and the production 139,973 pounds.

Three men bought three purebred Guernsey cows and a bull in co-operation, last year, to start a community breeding center in Ventura county. They are E. O. Tucker, J. M. Dickenson, and Jas. Sharp of Saticoy, and their exhibit at the county fair of cows with calves attracted much attention.

Organization is being urged upon the milk producers by the Sacramento Valley Development Association, and is in charge of James M. Henderson Jr., chairman of the milk producers' committee of that body. The plan is to form a co-operative association through which the farmers can market their dairy products along lines similar to other farmers' organizations now in effect in California. The committee in charge, besides Henderson, includes C. L. Hughes, E. Franklin, Senator B. F. Rush and W. A. Beard.

The cup offered to the owner of the cow producing the most Butterfat from Oct. 1, 1915, to Oct. 1, 1916, by the Chico Business Men's Association was won by S. A. Mealey of Gridley, whose grade Holstein cow "Beauty" produced 9,622 pounds milk, containing 422.6 pounds butterfat. Seven cows in the Association produced over 400 pounds fat in that period. At a meeting of the Association Sept. 30th, the following officers were elected for the ensuing year: J. H. Guill Jr. of Chico, President; Henry Wickman of Gridley, Vice-president; S. F. Bonner of Gridley, Secretary and Treasurer.

BEEF CATTLE.

Six fine Shorthorn bulls shown at the State Fair were bought by Julius Trescony and shipped to San Lucas.

Four hundred head of beef cattle have been shipped into Poplar, Merced Co., to be fattened on alfalfa and reshipped to Nevada.

It is thought that cattle-rustling has been stopped entirely in Tulare Co., due to the system employed of notifying prospective buyers to be on their guard, thus preventing stolen stock from being sold.

A. T. Sauza of San Luis Obispo Co. bought 75 head of young cattle from James Barrie at Marigold, 50 from P. V. Ashford, 27 from Mrs. J. Bailey and 13 from Miss M. Hobbs of Tudor.

Legend Novena Teake, senior yearling first prize winner in the Holstein bull class at the late Modesto fair, exhibited by George Kounias, was sold to a West Side dairyman for \$350. This bull was a year old in February last, and was classed by Judge True.

Phil Collins, a well-known Gonheavy beef cattle. These are some of the weights: 6-year-old cow, 1562; 5-year-old cow, 1240; 4-year-old cow, 1250; 3-year-old cow, 1290; 2-year-old cow, 1020; 1-year-old cow, 950; 2-year-old bull, 1270; 4 calves, \$1980.

Prices of meat animals were 23.7 higher September 15 than on the same day of last year—and showed an increase over August 15 of this year of 4.1 per cent, according to the agricultural department. Beef cattle averaged throughout the United States on that date \$6.55 per hundred pounds against \$6.51 a month ago and \$6.06 a year ago.

HOGS AND SHEEP.

F. V. Gordon, Los Angeles, has recently placed on his ranch near Perris, known as the Llano Vista (Continued on page 390.)

AT AUCTION!



200 Horses and Mules

THURSDAY, OCTOBER 12, 1916.

On account of expiration of lease, we will sell all personal property on the Linden Stock Farm, consisting of 100 three- and four-year-old mules, 25 work mules, 75 draft and all-purpose horses. The mules will be sold in spans or carload lots to suit purchasers.

ALSO

Registered Berkshire Hogs

including the prize-winning boar, Bandmaster 2nd, and a number of sows with litters sired by him. Also all farm machinery used on this 700-acre ranch, including wagons, plows, harrows, drills, 1 four-ton auto truck, 1 seven-passenger automobile, and all household goods.



BANDMASTER 2nd.

Sale takes place on the farm, three miles north of Linden and sixteen miles northeast of Stockton, at 10 a. m. Thursday, October 12th. No outside stock offered or permitted at this sale.

W. H. Hord & Son

Proprietors and Auctioneers.

FARM: LINDEN,
San Joaquin Co.

Office, 703 Market St.
San Francisco.

REMCO Air-Dried Redwood

PIPE For Irrigation—Water Supply—Power. Sizes 2 inches to 12 feet. For pressure up to 400 feet head. Guaranteed for 100 per cent overload. Costs less than any other pipe of equal capacity, efficiency and endurance. Not affected by worms or insects, acid or alkaline soils, electrolysis or roots. Withstands extremes of heat and cold, dryness and moisture. Outlasts any pipe except cast iron, and maintains its full flow capacity to the end.

TANKS For Water—Wine—Vinegar—Oil—Acids—Solutions. For Storage—Mixing—Fermenting—Pickling—Leaching. In all shapes and sizes—500 to 650,000 gallons.

SILOS For Dairymen—Stockmen—Feeders. Sizes, 25 tons to 300 tons. The STANDARD.

ALL REMCO PRODUCTS are manufactured to your order from CLEAR, AIR-DRIED REDWOOD. Selected from our stock of forty million feet. Their outstanding features are HIGHEST GRADE MATERIAL, SUPERIOR EFFICIENCY, MECHANICAL PERFECTION, MAXIMUM DURABILITY.

Sold direct to users. Catalogs sent on request.

Redwood Manufacturers' Co.

1608 HOBART BUILDING,

SAN FRANCISCO

Durocs For Sale

OPEN AND BRED GILTS
BOARS.

Breeding and Individuality
Right

Tagus Ranch

(Pacific States Corporation)

Hulet C. Merritt, Pres.

H. C. Merritt, Jr. Vice-pres.

TULARE, CAL., via TAGUE

I Offer for Sale the

REGISTERED GUERNSEY BULL

KITCHENER'S BEAUTY BOY, 35,049.

Dam: Imp. Beauty of the Hougue Fouque. Sire: Kitchener's Rose Farm Boy. Born March 2, 1915. This bull is not excelled by any young bull in the State, and if you are looking for something good, priced right, let me send you photo and price.

H. S. VAN VLEAR,

R. F. D. 2, LODI, CAL.

Livestock Facts and Fancies---III.

[Written for Pacific Rural Press.]

In last week's issue we promised to stop scolding and tackle some concrete instances of the importance of purebred animals in the practical operations of farm production. But it is necessary, first, to indicate how such instances can be recognized so that every farmer can seek them for himself and depend upon no one's "say so" for it. As we are not a "professor of animal industry," we have no pretensions to scientific expertness nor orthodoxy, and if any one feels like slamming our examples or precepts he has right and welcome to do it. If he wishes to do it for print in these columns, it will make more fun and do more good also, probably. If our doctrine gets a sharp horn in the side we shall run for a "doctor book" or perhaps for a real doctor—according to the place and depth of the horn-ing.

Years ago it used to be quite popular to claim that purebreds were of no account to the practical farmer, that they were the pampered playthings of rich cranks who did not care if their meat or butter cost them a dollar a pound, so long as they could get their names and pictures into the farm papers. This was never really true. There was, perhaps, more reasonableness in the claim years ago than now, though it has never rested on reasonableness, but on prejudice resulting from lack of knowledge of what the purebred animal is, how it came to exist and what it is good for or what can be gained by owning and using it. Such ignorance is much less now than formerly, but still there is still enough to warrant effort to remove it.

One can hardly place himself in the right attitude toward the purebred animal of any kind without gaining some knowledge of where it came from, how it came to be what it is, what are the external signs of its suitability to particular purposes and what are the requirements to secure in its progeny the maintenance of such suitability or the increase of it. One can still learn something of these things by studying animals, their forms and ways, making comparisons of many of them and by talking these things over with other observers. This is probably the way those who started centuries ago on the long road which has led to present standards of excellence of animals made their beginnings. It is, however, too late in the history of the world to begin that way and to be content with what one can attain by the use of his own eyes and thinking outfit. He needs to know what preceding generations of men have seen and thought and to use his eyes and brain to build upon the foundations which earlier human experience has shown to be straight seeing and sound thinking. He needs this foundation of knowledge that he may understand the significance of what he now sees. Even if he has already learned much by observation and current discussion, it is still of great advantage to him to test his present conclusions by learning their relations to the recorded results of studies, observations and conclusions of others

which constitute the recognized wisdom of the present day. Therefore we are sure that no one who finds himself properly attracted by the achievements of purebreds as they casually come to him should be content with such measure of knowledge as comes to him through the sights and gossip of the fair exhibits or the sales' rings, but should try to get at the foundation of all that is really true which underlies such events.

It seems to us that the way to approach fundamental knowledge of purebreds and their characters and usefulness is to read, ponder and digest such a little book as Davenport's "Domesticated Animals and Plants." It is written in attractive style and is especially designed to impart some knowledge of the essential principles that are fundamental to an understanding of heredity transmission and of the business of plant and animal improvement—throwing light not only upon the sources of materials out of which domesticated races have been made, but also many of the essential steps in improvement. Another book which should be studied is Plumb's "Types and Breeds of Farm Animals," which shows how the principles of breeding have been applied in the development of all our breeds of farm stock which are now popular, and sets forth the history of this development with striking illustrations of the ends attained.

One who masters the records of facts and principles set forth in these works is equipped to see better and listen more intelligently to the demonstrations of the truth at live stock fairs, at the University farm instruction, at Farm Bureau meetings, institutes, etc., and to appreciate the instances which are set forth in text and illustration in intelligent and conscientious agricultural journals. He is also well prepared to go far on seeing-expeditions of his own to breeding farms and farmers which are made profitable by practical use of improved animals of all kinds.

*Both these books are published by Ginn Co.—"Domestication of Animals" at \$1.25 and "Types and Breeds" at \$2. Any book dealer can get them.

LARGE CHEESE DAIRY.

[Written for Pacific Rural Press by Bert S. Wolf.]

What is probably the largest dairy in the Napa-Sonoma district is conducted by Filipini Bros. in Napa county near the Sonoma line. The Filipini boys, who were born on this ranch, are milking 250 Durham cows and own about 2500 acres of pasture land.

Their main milking barn has a capacity of 120 cows. Besides this, they are buying the milk of three other dairy farmers, amounting to 200 head of dairy cows. This milk is all made into cheese. They make up to 600 pounds cheese daily, and sell as fast as made. They are about to put in electric appliances for irrigation. They have a reservoir tank on their place that has a capacity of 32,000 gallons of water.

A GREAT SON OF King of the Pontiacs WILL BE SOLD IN A. W. MORRIS & SONS CONSIGNMENT TO Sacramento Sale, October 26-27

KING KORNDYKE PONTIAC, one of the very best bred sons of the great King of the Pontiacs, will be sold from our herd in order to make room for **KING MORCO ALCARTRA**, the young son of Tilly Alcartra.

His Sire—**KING OF THE PONTIACS**—the leading A. R. O. sire of the breed, has 188 A. R. O. daughters, seventeen above 30 pounds and two above 40 pounds butter in seven days.

His Dam—**MAY KORNDYKE 2ND**, a 26.31 pound three-year-old, sister to Prince Gelsche Walker, is by a 32.50 lb. sire and the 30.69 lb. three-year-old, May Korndyke, who is by Joe Gelsche De Kol Burke, sire of 4 thirty-pound daughters, and a 23.86 lb. cow. She is one of the best individuals ever owned in our herd, carrying about as near a perfect udder as it would be possible to find.

The conformation of this bull would be difficult to fault. He is beautifully marked. He has had light service in our herd for two years, and is a sure breeder.

Among the other finely bred bulls that we will sell in this sale is: A son of **PRINCE GELSCHKE WALKER** from a 27.30-lb. 3-year-old, who is by a 30-pound son of Paul Beets De Kol and from a good record daughter of Pearl of the Dairy's Joe De Kol.

A son of a 32-pound daughter of **DE KOL BURKE** by a 30-pound sire.

A son of a 27.50-pound daughter of **RIVERSIDE SADIE DE KOL BURKE** by a 30-pound sire.

A son of a 27.56-pound 4-year-old daughter of **KING MEAD OF RIVERSIDE** and a 33-pound cow.

The three nearest dams of several of these have yearly records averaging over 900 pounds butter.

WRITE US FOR INFORMATION.

A. W. MORRIS & SONS
WOODLAND, CALIFORNIA

GOOD in Breeding in Type in Individuality in Health

In fact, every possible effort has been made to have GOOD in every way

180 REGISTERED HOLSTEINS

TO BE SOLD AT PUBLIC AUCTION AT
CALIFORNIA STATE FAIR GROUNDS
Sacramento, California

OCTOBER 26-27, 1916

There will be a large number of most desirable heifers, including: Five daughters of **KING KORNDYKE SADIE VALE**, one of them out of a 29-pound cow that has a 34-pound 3-year-old daughter.

Four heifers of splendid breeding and safe in calf to **KING SEGIS ALCARTRA ABBEKERK**, whose sire is King Segis Pontiac Alcartra, the \$50,900 bull, and whose dam is a 30.27 pound 4-year-old daughter of Tidy Abbecker Prince.

Three daughters of a great A. R. O. cow, consigned by University Farm. A splendid daughter of the grand old cow, **MINNEWAWA JULIANA**, and sired by a 30-pound bull.

Eight good ones in calf to **KING MORCO ALCARTRA**, son of Tilly Alcartra, the world's champion long-distance dairy cow.

Fifteen daughters of a 33-pound sire.

Granddaughters of **KING SEGIS**, out of good A. R. O. dams.

Granddaughters of **KING OF THE PONTIACS**, out of A. R. O. dams.

BULLS.

If you want one of the best herds headers ever offered in the West, look over the ones offered in this sale. There are a number of the highest quality, including:

A son of the \$12,500 sire **PRINCE GELSCHKE WALKER**, out of a 27-pound 3-year-old.

A son of **PRINCE GELSCHKE WALKER**, out of a former world's record cow.

A son of **KING KORNDYKE SADIE VALE**.

A son of **KING KORNDYKE HENGERVELD ORMSBY**, out of a 22.86 pound 3-year-old.

A son of a 27.50 pound cows whose dam is a 33-pound cow. The three nearest dams of this bull average 30.25 pounds butter in 7 days and 930 pounds butter in one year.

KING KORNDYKE PONTIAC, whose sire is **KING OF THE PONTIACS**, and whose dam is a 26.31 pound 3-year-old half-sister to **PRINCE GELSCHKE WALKER**, and out of a 30-pound 3-year-old daughter of **JOE GELSCHKE DE KOL BURKE**.

Every animal over 6 months of age in this sale will be tuberculin tested by a Deputy State Veterinarian and certificate issued by the State Veterinarian. Buyers from other States will have absolutely no delay in securing shipping permit immediately after the sale.

TERMS OF SALE: One-third cash, balance on bankable notes, payable in three, six, and nine months at 8 per cent interest. All buyers desiring terms must positively make arrangements with owners before sale.

The following breeders will participate in this sale:

UNIVERSITY FARM, Davis.
FRED W. KIESEL, Sacramento.
TOYON FARM, Los Altos.
F. STENZEL, San Lorenzo.
HEWITT & HEWITT, Dixon.

A. W. MORRIS & SONS, Woodland.
DR. E. J. WELDON, Sacramento.
FRANK HATCH, Modesto.
BRIDGFORD CO., Knightsen.
S. G. KOUNIAS, Modesto.

CATALOG READY ABOUT OCTOBER 15. WRITE FOR ONE NOW.

CALIFORNIA BREEDERS' SALES AND PEDIGREE CO.
COL. BEN A. RHOADES, Auctioneer, Los Angeles, Cal.
C. L. HUGHES, Sales Manager, Sacramento, Cal.

Fresno District Fair.

[Written for Pacific Rural Press.]

Fresno may rightly claim the big fair of all district fairs; indeed, the fair there last week was a close rival to the California State Fair.

Poultry has made a decided advance at this fair in spite of molting season, uncomfortably filling what was previously used for the agricultural displays.

Dairy Cattle: Some 200 or more dairy cattle were shown, Holsteins and Jerseys showing about even numbers and quality.

The \$500 in prize money for best dairy herds of 10 animals was largely responsible for the entry of some of the best show herds in the State, and this made class competition keen.

In the Holstein division the State Fair champions from the Morris herd, were too well balanced to permit defeat.

The Jersey show developed a new male champion in the senior yearling Golden Maidikins Boy, shown by S. F. Williams of Chico. The cow Valet's Golden Biddy of L. shown by N. H. Locke was again placed at the top of the female classes.

Guernsey championships both went to W. J. Higdon of Tulare. Ayrshires and Milking Shorthorns shown by Steybrae Farm and E. H. and H. L. Murphy respectively had no competition.

Herd Contest:—The outstanding feature of the dairy show was the herd contest, with six entries, three of which were Holsteins, one Guernsey, one Ayrshire and one Jersey.

From the beginning the ringside followers favored the four herds shown by Morris & Sons, Locke, Steybrae Farm, and Frank Helm. The ribbons were finally awarded to Morris & Sons, Steybrae Farm, and N. H. Locke Co. in the order named.

Swine:—Duroc-Jerseys and Poland Chinas predominated here. The Berkshires were equally strong in quality, both the champion and reserve champion boars at Sacramento competing. The Poland China boar Model Major, shown by Marsh of Modesto, was the sensation in the hog ring as he not only won everything, including championships in his own division, but went still higher and took sweepstakes over all breeds. He is a grand individual and was well shown by a man who was selling art goods a few years ago.

Duroc Jersey championships went to Fraser and Collins on the boar California Defender and to J. E. Thorp on an aged sow.

A reversal of State Fair placing was made by Judge Miller in the Berkshire championships by placing the under six month pig Winona Royal Champion 5th, shown by A. Smith, over the aged boar in the Murphy herd.

The show of O. I. C.'s was confined to the show herd of N. H. Locke Co.

Horses:—Local stallion owners and J. K. Macomber of Tulare County made the draft horse show with Percherons and Belgians.

PROPER PROTECTION FOR CALVES.

[Written for Pacific Rural Press.]

As pointed out in a previous issue of the Rural Press, young stock thrive much better, and make more rapid gains when furnished with shelter other than that afforded by the occasional tree or the lee side of a strawstack or outbuilding. The dairy plant at the State Hospital at Napa, to which reference was made, shows that due consideration has been given to this important feature of dairy stock work.

There a building has been erected with a capacity of 20 calves, having hay storage room overhead and concrete floor.

The building is long enough for 20 calf stanchions, which are placed along one side and separated from the outside wall by an aisle to accommodate the feeder. A board shelf in front of the stanchions has holes cut out for the milk-pails to set in.

On the other side of the building, hay racks have been erected, low enough so that the calves can reach the feed with ease. Through the center of the floor, running lengthwise of the building, a shallow gutter has been made in the concrete for drainage.

By this construction, the calves are fed under roof during the entire year. After feeding, their quarters can be flushed out with a hose and water so it is fully as sanitary as the milking stable. In wet weather they can, if necessary, be kept in day and night.

All of the calves raised on this

place are given alfalfa hay, whole milk, oil meal, and shorts, until old enough to be turned out on pasture.

An importation of 60 head of high class Berkshires has arrived at the Butte City Ranch at Butte City, Glenn county.

Bernstein Ranch

Consigns 23 Head

Poland Chinas

TO

AUCTION SALE

ON OCTOBER 19,

AT HANFORD, KING'S COUNTY.

Some of the Best of Our Herd means Some of the Best of the Breed.

See Our Consignment in Catalog.

W. BERNSTEIN, Prop,
Hanford,

KING'S COUNTY, CALIFORNIA

DUROC JERSEYS

LARGEST HERD IN THE STATE. Headquarters of the best in Golden Model and Colonel breeding. Stock of all ages always for sale. Start with the best. Ranches at Holtville and Devore, San Bernardino Co.

ADDRESS: DEVORE, CALIF.
PETERS, LAMSON & WALKER

Tamworths and Duroc-Jerseys

We can fill orders for mature stock and weanling pigs of both sexes. This is the largest herd of TAMWORTHS in the State. Our Stock is sure to please.

Write or call and see us.

SWINELAND FARM.

W. O. PEARSON, Prop.

Woodland, California.

MODEL HERD OF BERKSHIRES

Bred for size, bone and quality. Pigs for sale, sired by Big Royalist 150837 and Breed's Model 165859, both winners of blue ribbons at State Fair.

Descriptive catalog upon request.
J. L. GISH, Laws, Inyo County, Calif.

Good Holsteins Will Sell

at the BREEDERS' CONSIGNMENT SALE

FAIR GROUNDS,

HANFORD, CAL.

October 18, 1916

The Opportunity of the Season

For the Selection of dependable breeding stock.

100-COWS, HEIFERS, BULLS-100

GOOD BREEDING PLEASING CONFORMATION
HIGH RECORDS.

Every Animal Sound—A Guaranteed Breeder.
Tuberculin Tested.

COWS WITH A. R. O. RECORDS, many with 20 to 26 pounds butter in seven days; in calf to 30 pound sires.

BEAUTIFUL HEIFERS, many from A. R. O. dams. They have the breeding and type that will please you and are bred to outstanding sires.

YOUNG BULLS with the breeding, A. R. O. backing, and type that will meet the requirements of the most discriminative buyer. Several from dams with 26 to 33 pounds butter in seven days.

THE PROVEN SIRE, ARCADY PONTIAC WAYNE HENGERVELD, 24 A. R. O. daughters with records up to 27.42. By the best son of **HENGERVELD DE KOL**.

THE QUALITY OF THE SIRES to which the females are

bred is a feature worthy of your consideration. In many instances the calves they are carrying will be worth their purchase price. Bred to such sires as—

COLANTHA SIR PONTIAC AAGGIE, son of Colantha Johanna Lad.

KING MORCO ALCARTRA, son of Segis Pontiac De Kol Burke and Tilly Alcartra.

SIR VEEMAN KORNDYKE PONTIAC, son of Sir Veeman Hengerveld.

ARALIA PONTIAC DE KOL SEGIS, dam and sire's dam average over 1000 lbs.

SEGIS PONTIAC DE KOL BURKE LUIT, a son of Segis Pontiac De Kol Burke from a 32-pound daughter of De Kol Burke.

SEGIS PONTIAC CRANE DE KOL, MERCY SIR PONTIAC, SIR COOPER KORNDYKE, KING MEAD OF RIVERSIDE, and others of outstanding breeding.

Sale catalog now ready and will be mailed on request.

Address,

F. L. MORRIS, Sale Manager
Woodland, Cal.

Auctioneer,

Col. B. A. RHOADES
Los Angeles, Cal.

CALIFORNIA HOLSTEIN BREEDERS' THIRD ANNUAL SALE

FIRST ANNUAL SALE

AT THE

Santa Anita Rancho

ANOAKIA BREEDING FARM

Anita M. Baldwin, Prop.

85 HOLSTEINS OF SUPERIOR MERIT 85

Monday, Oct. 23, 1916

Southern California's GREATEST SALE

You will find among the offerings the greatest lot of bred 2-year old heifers ever sold in the West, including—

Daughters of a 37-lb. Bull.

5 Granddaughters of **KING PIETER**, bred to a 37-lb. Bull.

19 daughters of **JULIANA KING OF ROCH**, his dam **QUEEN JULIANA DIRKJE**, butter 365 days, 1021.73, all bred to a son of this cow, sired by **KING SEGIS PONTIAC**.

And among the great young herd sires you will find sons of
PRINCE GELSCHÉ WALKER
ARALIA DE KOL PONTIAC SEGIS
KING KORNDYKE PONTIAC
SEGIS PONTIAC DE KOL BURKE
KING MEAD OF RIVERSIDE

Out of High Record Dams

Every animal tuberculin tested and individual certificates furnished.

COL. BEN. A. RHOADES,
Auctioneer,

HARLAN DAILEY,
Sales Manager,
1505 So. Main St., Los Angeles, Cal.

Second Semi-Annual Sale

KINGS COUNTY POLAND CHINA BREEDERS ASS'N.

Will Be Held at the County Fair Grounds, Hanford, Cal.

Thursday, October 19, 1916

On this date there will be 150 head of
REGISTERED POLAND-CHINAS SOLD,
 consisting of

Bred Sows, Bred and Open Gilts and a number of High Class Boars

Some of the best animals from the leading herds of Kings County will be sold without regard to price or value. The sale will be absolute and without reserve. Sale under cover, and will be held, rain or shine.

CONSIGNORS:

M. BASSETT.
 W. BERNSTEIN.
 J. A. CRAWSHAW.
 OSCAR DIMMICK.
 T. J. GILKERSON.
 F. D. ROSS.
 GEO. A. SMITH.
 W. D. TREWHITT.
 JNO. M. BERNSTEIN.

Auctioneers:

COL. BEN A. RHOADES,
T. J. GILKERSON.

For catalog or information,
 Write

F. E. NEWTON,
 or any consignor.
 Hanford, Calif.

LIVESTOCK NOTES.

(Continued from page 387)

Rancho, a herd of 300 Hampshire hogs. Every animal is either a winner or their sire or dams have been winners at world's fairs or the State fairs.

Mr. A. C. Jones of Lower Lake shipped about 400 head of fat sheep to the San Francisco market last week.

Jos. Wilson of Mason, Nev., sold a boar pig to J. O. Perrazzo of Wabuska and a sow to Henry Atchison of Sweetwater, Nev.

The first marketing done by the Stanislaus Co. Farmers' Union was the shipment recently of a carload of fat hogs to San Francisco. There were 90 in the bunch.

Bonnie Belle, grand champion sow at the State Fair, farrowed 11 big healthy pigs Sept. 12. These are by Billiken, and all look like show prospects for next fall.

J. E. Thorpe of Stockton recently donated a Duroc-Jersey boar to the Nevada University Farm, and a prize Chester White boar was given to the Farm by N. H. Locke Co. of Lockeford.

The Mossdale Duroc Farm of Stockton offered a purebred pig to the one who guessed nearest the actual weight of their "heaviest two-year Duroc sow in California" on exhibit at the Fresno Fair.

The Panama-Pacific grand champion Poland China Superba, owned by W. H. Rough of Riverside, is well up on his feet, smooth though thinned down, and has gotten never less than 7 pigs per litter; and an average of over 8. Not many sows were bred to him last season.

C. B. Cunningham of Mills, reports the following sales of O. I. C. swine: One sow pig and a boar to the University Farm. Three boars to Jerry Buckley of Cottonwood; a sow and boar to Geo. M. Frazier; a sow to Mrs. S. R. Cheney of Lindsay; a bred sow to Louis Bidstrup of Suisun; a bred sow to J. H. Stoner of Babbiste.

W. H. Hord & Son will hold on Oct. 12 at their farm near Linden in San Joaquin county, a big auction sale of horses, mules, Berkshire hogs, farm implements and machinery. Included in the sale will be the herd boar Bandmaster 2nd and a number of good registered sows with litters sired by him. Bandmaster 2nd is one of the best known boars on this coast. He was junior champion at Iowa and Minnesota State fairs 1914; and 2nd senior yearling at P. P. I. E. 1915.

Elmer Lamb of Ceres announces in another column that he is selling out all of his fine herd of Duroc Jersey hogs. Mr. Lamb is in ill health and will discontinue work in an effort to regain his old-time vigor. His herd of Durocs is one of the best in the State, numbering among them champions at the P. P. I. E. and State Fair, and all are offered at sacrifice prices. Here is a splendid opportunity for all wanting foundation stock.

BIG LIVESTOCK SHOW AT HANFORD.

Notwithstanding unfavorable weather conditions the Kings County Fair started off the present week with what is admitted to be the strongest livestock show ever assembled at a county fair in California.

Holstein cattle are represented by the best individuals from the Tagus Ranch, T. J. Gilkerson, T. D. Ross, G. A. Clark, C. M. Blowers, L. Y. Montgomery and M. A. Hoppert herds.

Jerseys are being shown by N. H. Locke Co., S. W. Williams, J. E. Thorpe, A. A. Jenkins, C. T. Starr, E. H. Church, R. L. Waltz and Dr. Frank Griffith. The Guernsey showing is being made by E. S. Sattison.

Poland China swine are the outstanding feature in the swine division. M. Bassett, W. Bernstein, H. I. Marsh, W. D. Trehwitt, F. D. Ross and Dr. J. A. Crawshaw having large and strong herds on the grounds. The Spotted Polands

LIVESTOCK DIRECTORY.

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DAIRY CATTLE.

Holsteins.

FOR SALE—An extra fine lot of 12 Registered Holstein Heifers from 8 to 18 months old. Some are bred to Prince Juliana Walker, a First Prize son of Prince Gelsche Walker. Also an extra well-bred Korndyke bull to go with them whose granddam was a former world's record cow. This stock is priced low for a quick sale. Write, or better, come and see them at once. Geo. A. Smith, Corcoran

REGISTERED HOLSTEIN BULL CALVES—Sired by Lorena Korndyke Alcartra, whose dam made 29.75 pounds butter fat in seven days as a four-year-old. J. M. Campbell, Escondido Cal

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Cream-elle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stensel, San Lorenzo, Cal.

REGISTERED HOLSTEINS—Have a few Bulls from El Prado Wayne Colantha, whose dams and sire's dams average per cent fat at 4 years is 5.01. See my stock at the State Fair I W Benoit, Route C, Modesto, Cal.

REGISTERED HOLSTEINS—Sired by King Korndyke Hengerveld Ormsby 53822. Dam Pieterjie Maid Ormsby 78051, world's record when made 35.58. Send for pedigree. Geo Kounias, Modesto, Cal.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds Excellent breeding. Prices reasonable. W. J. Heddon, Tulare, Cal.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigree.

A SPLENDID 8-months-old Holstein bull with good A. R. O. breeding for \$135. E. W. Abbott, Milpitas, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS Corp., Importers and Breeders. Stockland, Cal.

CREAM CUP HERD—Registered Holsteins Pontiac bull calves. M. Holdridge, Modesto, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chico, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3 Box 58, Visalia, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. I. Morse, Route R, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. R. F. Anderson, Modesto, Cal.

30 HIGH-GRADE Holstein milk cows for sale at once. Hewitt & Hewitt, Dixon, Cal.

HOLSTEIN COWS for sale with records. Dr. Stinson, Napa, Cal.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Calif.

Jerseys.

WANTED—Ten or twenty young Jersey cows or grade Jersey and Durham. State age, price, and, if possible, when expected to calve. Address M. S. Thompson, 433 Oakland Ave., Oakland, Cal.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3 lbs. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

REGISTERED JERSEYS—Herd established 1888. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

VENADERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly record. Gus H. Miller, Route 1, Modesto, Cal.

JERSEY BULLS—Serviceable are Sons of Gertie's Lad who has two daughters that made over 600 lbs. butter as two-year-olds. A. A. Jenkins, Tulare.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Brackett, Ceres, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

YOUNG REGISTERED JERSEY BULL CALVES at reasonable prices. O. J. Ames, Oakdale.

REGISTERED JERSEYS—Young bulls and bull calves. T. R. Purcine, Petaluma, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Harworth, Modesto, Cal.

FRESH JERSEY MILK COWS for sale. N. H. Locke, Lockeford, Cal.

Other Breeds.

GUERNSEY BULL CALVES from Grand Champion Bull. Also Hampshire Swine, both sexes from Grand Champion 700-lb. boar and Grand and Junior Champion Sow. Bella Vista Herd. J. W. Henderson, 1st National Bank Bldg., Berkeley, Cal.

EDGEWOOD FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgewood Farm, Santa Fe, Cal.

BREEDERS OF REGISTERED SHORT-HORN—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

WILLOWMOOR AYRSHIRES—Great records; economy. 300 head in herd. J. W. Chase, Redmond, Wash.

INNISFALL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domes, McCoy, Oregon.

shown by Dr. Crawshaw are attracting considerable attention.

Fraser and Collins, J. E. Thorpe and the Tagus Ranch are making the Duroc show, while E. H. and H. L. Murphy and A. Smith are again contenders in the Berkshire classes.

Jas. McCord is making a nice showing of Shire horses and jacks while the Percheron showing is largely supported by the Tagus Ranch and M. Bassett.

Chas. Kimble will have his Ramboulllets in the sheep sheds.

The poultry show is strong in numbers, 500 head of chickens, turkeys, ducks, pigeons, geese and pheasants being caged.

Professors Westover and Nelson of the California Polytechnical College are doing the livestock judging.

HIGHLY PRODUCTIVE COWS.

In the past few months the College of Agriculture of the University of California have tested 40 different herds for butterfat production. Among California cows tested with notable results are:

One-year records: Maybel of Linden Home (23,009), 754.83 pounds butterfat, owner, W. H. Dupee, Santee; Proud Dame (38,916), 514.06 pounds butterfat, same owner; Woodland Wilhelmina II (162,538), 739.91 pounds butterfat, owner, A. W. Morris & Sons Corp., Woodland; May Korndyke II (139,370), 621.17 pounds butterfat, same owners; Elmwood Butter Girl (96,038), 614.69 pounds butterfat, same owners.

Seven-day records: Sleepy Barrios of Millbrae (161,752), Millbrae Dairy, Millbrae, 24.707; Gladys of Millbrae (214,830), Millbrae Dairy, Millbrae, 23.492; Whittier De Kol Homestead Rowena (172,014), B. A. Rhoades, Rivera, 23.011; Novelty Pauline II (130,696), B. A. Rhoades, Rivera, 23.429; Johanna Prilly Segis (214,069), B. A. Rhoades, Rivera, 21.215; Gleesome Gaitly Girl II (173,594), R. F. Guerin, Visalia, 21.934.

Thirty-day records: Dioteme Clyde Korndyke, A. Baldwin, Santa Anita, 94.349; Winifred Hotaling II, M. M. Holdridge, Modesto, 94.152.

SWINE.

Poland Chinas.

SMITH'S POLAND-CHINAS—Sows and gilts bred to Joker, First Prize Boar at the Wisconsin State Fair, 1915. These sows and gilts, sired by Iowa Wonder, who is a son of A Wonder, the most celebrated Poland-China boar, living or dead. Litters from this mating are the best I have ever seen anywhere. Prices low quality considered. Will sell one or a carload. As a special inducement each purchaser will be given a year's subscription to the American Swineherd, the best swine paper published and a copy of the Handbook on the Sow; also a copy of the Pig Feeders' Manual. Geo. A. Smith, Corcoran, Cal.

YOUNG POLAND CHINAS, LARGE TYPE—Boar IBA Wonder won first and Reserve Championship. P. P. I. E., weighing 730 pounds under 2 years and in breeding condition. 60-day special—fine young sows bred to IBA Wonder at very low prices; also weanling pigs, either sex. Satisfaction, or money refunded. W. A. Young, Lodi, Cal.

GRAND CHAMPION SUPERBA POLANDS—A few choice spring Superba boars ready for service. Sows bred to Superba for fall litters. Prices reasonably low. Rough's Greenfields, Arlington Station, Riverside, Cal.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated, purchaser to return crates. E. A. Hall, Watsonville, Cal.

REGISTERED POLAND-CHINAS—Prolific, pabulous, profitable porkers. Choice boars now ready for service, \$25 each. Weanlings, \$15. Dr. J. A. Crawshaw, Hanford, Cal.

LAKEIDE STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Linn, Linview Route A, Modesto, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars, W. D. Trewitt, Box 82A, Hanford, Cal.

BERKSHIRES—Four service boars, 30 Spring 1916 open gilts for sale. Oak Grove Dairy Farm, Box 1, Woodland, Cal.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

POLAND CHINA HOGS FOR SALE—Registration papers furnished free. C. A. Conley, Durham, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 27A, Davis, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

REGISTERED POLAND CHINAS—Young stock for sale. J. H. Cook, Paradise, Cal.

REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gulroy.

REGISTERED POLAND-CHINAS and Duroc Jerseys. M. F. Harrold, Orland.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

Berkshires.

BERKSHIRE IMPORTATION—We want every prospective Berkshire buyer to see our new importation from the East before buying. A superior lot of sows are for sale. Many of them are bred to Iowa Champion Peer 2d, a boar that cost us \$750 at Iowa Fairs. He is a "big type" Berkshire of great quality. Iowa Fairs had him fitted to win at the San Francisco World's Fair, but were prevented from showing by the quarantine. We have sows of all ages, and boars for sale. One or a carload. Write to us. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

REGISTERED BERKSHIRES—World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Championships. Stock of all ages for sale. Grapewild Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

FOR SALE—One Berkshire sow two years old and four pigs six weeks old. Sow and pigs registered. Will be sold cheap. Also one bay team, 5 and 7 years old, weight about 1250 each. T. Maher, Mountain View, Cal.

CHOICE REGISTERED BERKSHIRES—Fine bred Rival Champions Best and Masterpiece pigs, \$15 each. Trios, \$40. A 700 pound son of Star Value for sale at a bargain. W. H. Waugh, Riverside, Cal.

SONS AND DAUGHTERS OF LAUREL—Champion—Won more than twice as many prizes at Sacramento as the get of any other boar. Winona Ranch, Route 1, A-Box 105, Grant's Pass, Ore. F. R. Steel.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

REGISTERED PUREBRED BERKSHIRE PIGS—Weanlings—both sexes. Reasonable prices. Write for full information. J. E. Hall, Sebastopol, Cal.

REGISTERED BERKSHIRES—For sale, bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

REGISTERED BERKSHIRES of prize-winning blood. Write for description and photos. Imperial Stock Farm, Morgan Hill, Cal.

ROSECRIFT BERKSHIRES—Rivale Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Perris, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore Kings county.

REGISTERED BERKSHIRE BOARS—Gilts and weanlings. Choice stock. W. M. Mikesell, Manteca.

REGISTERED BERKSHIRES—Bred sows. Also a few gilts. G. E. Sheldford, Healdsburg, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

BERKSHIRES—Carruthers Farms, Mayfield, Cal. Second annual sale, August 2, 1917.

REGISTERED BERKSHIRES—Weanling pigs \$10 each. G. A. Casey, R. 7, San Jose.

REGISTERED BERKSHIRES—Young stock for sale. W. White, Elk Grove, Cal.

CHAS. GOODMAN—Breeder of high-class Berkshire Swine. Williams, Cal.

Duroc-Jerseys.

REGISTERED DUROC-JERSEYS—60 head priced to sell before October 1st.—Bred sows and gilts, open gilts, boars and spring pigs, representing the most noted families of the breed. Only choicest individuals, shipped for breeding purposes, at prices within reach of every one; absolutely guaranteed and in first-class condition. For particulars write to Haden Smith, Route 1, Box 84D, Woodland.

DUROCS from River Bend Farm, St. Helena, Cal., are large type, smooth, rangy, with fine backs and deep cherry color. We sell only those we'd like to keep in our herd. Don't write us if you want cheap stock.

DUROCS AND BERKSHIRES for sale, reasonable. First premium Berkshire boar and 3rd on Duroc, the only two hogs we entered State Fair, 1916. Perkins & Co., Perkins, Cal.

RANCHO RUBIUS DUROCS—A few choice gilts bred for October farrowing; also good service boars, tried sow and weaned pigs, priced right. Elmer Lamb, Ceres, Cal.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money makers. They grow faster. New England California Corporation, Ripon, Cal.

DUROC JERSEYS—Herd boars. E. N. Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

DUROC-JERSEY SWINE—Bred gilts, open gilts, one good service boar and a few young boars for sale. T. J. Walker, Perkins, Cal.

REGISTERED DUROC SOWS with 6 pigs 40 gilts, 20 boars. Extra fine breeding. John Kincaid, East Bakersfield, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boulder & Son, Napa.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Col, line Denair, Cal.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High class pure-bred hogs, both sexes any age.

THOROUGHbred DUROC-JERSEYS to farrow in August. Dr. T. A. Guthrie, Woodland, Cal.

REGISTERED DUROCS from best Eastern blood lines. S. S. Southworth, Napa.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROC JERSEY SWINE—Frederick M. Johnson, Napa, Cal.

REGISTERED DUROCS—All ages. Either sex. W. A. Pack, Hollister, Cal.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

Other Breeds.

BILLIKEN HERD OF IMPROVED CHES-TERS—Prize winners at the State Fair. The Farmer's Utility breed. Size combined with quality; producers of big uniform litters of growthy pigs. 15 bred gilts due to farrow in Jan. boars and sows of spring farrows; first class and extra well developed; best blood lines obtainable; prices reasonable and every one cholera immune. Write for special prices and circulars. C. B. Cunningham, Mills, Cal.

HAMPSHIRE SWINE—Fancy belted boars and sows. Good ones, \$25 and \$30. Better ones up to \$45. All registered. Ben F. Thorpe, Manager, Canfield Estate Ranches, Roncalli, Cal.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feed for big hogs. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

LARGE YORKSHIRE SWINE—Gilts to farrow in September and October. Service boars and Spring pigs. Both sexes. Riverina Farms, Paradise Road, Modesto, Cal.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

REGISTERED IMPROVED CHESTER Whites—Grizzly Bear Ranch, East Auburn, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Ram bouillots and American Merinos, both sexes Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

FOR SALE—Shropshire bucks, yearling and lambs. Individuals to carlots. Purebred but not registered. J. R. Bloom, Dixon.

KAUPKE BROS., WOODLAND, CAL. Breeders and Importers of Hampshire sheep.

BREEDER OF MERINO SHEEP—Rams for sale. J. Bidegaray, Fresno, Cal.

BISHOP BROS., SAN RAMON, CAL. Breeders and Importers Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillots, Hanford, Cal.

HORSES AND MULES.

STOCKTON PERCHERONS again winners at Sacramento. Get next brother farmer H. G. Learned, Producer, Stockton.

WANTED—Pair of gentle mules of blocky type, weighing 1400 pounds each and not over 8 years old. Address Gaston Gold Mining Co., 1107 Merchants' Exchange Building, San Francisco.

REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders, Easton & Ward, Proprietors, Burlingame, Cal.

BEEF CATTLE.

FAIR OAKS RANCH Whites, Cal.—Young registered Shorthorn bulls for sale. Sired by Landseer 379318, grandson of Imported Villager 295884.

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Fairness Ranch Co., 320 Sharon Bldg., San Francisco.

REGISTERED HEREFORDS—H. H. Gamble, Diamond G Ranch, Esparto, Cal.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

GEORGE WATTESON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

MISCELLANEOUS.

SAN FRANCISCO LIVE-STOCK EXPORT Co., Eugene R. Croley, Manager, solicits foreign orders for purebred registered and merit breeding animals and fowls. California has great diversity of climatic and other conditions that enable us to select animals that have been raised under conditions similar to those of the location for which they are intended. We should be informed regarding these conditions and be allowed ample time to make selections. Nearly all disappointments in buying afar are the result of insufficient information as to conditions or to lack of time for proper selection. Our plan and terms for "raising animals to order" to fit into peculiar foreign conditions is worth investigating. References: Dun or Bradstreet, or San Francisco banks. Office 219 Underwood Building, 525 Market St., San Francisco.

CROLEY'S CALF FEED with skim milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

D. O. LIVELY, 216 Hobart Building, San Francisco, buys and sells livestock—any kind—any quantity.

DUROCS AND GUERNSEY BULL CALVES Gilts bred to 900-lb. boar. Ed. E. Johnson, Truckee, Cal.

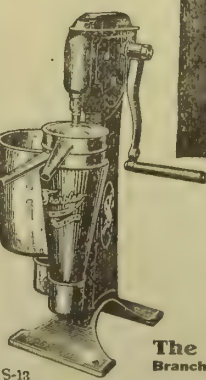
DOGS.

THOROUGHbred SCOTCH COLLIES—All bred from our noted prize-winners. Have a few 3 months old puppies—very choice. Write us what you want. Browndale Kennels, Redwood City, Cal.

BASSETT'S POLAND CHINAS



For many years, at widely separated show rings, under many different judges of varying type ideals, my Poland Chinas have been consistent prize-winners. My herd is large, and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished. Young Stock, \$30 Up. M. BASSETT, R. 1, Hanford, Cal.



SHARPLES SUCTION-FEED CREAM SEPARATOR

\$80,000,000 worth of cream is lost annually, due to turning old-fashioned separators below speed (19 out of 20 farmers turn too slow) Sharples is the **only** separator that will avoid this loss—skims clean at any speed. Over a million users. Made by the oldest and largest separator factory in America.

The Sharples Separator Co. - West Chester, Pa.
Branches: Chicago San Francisco Portland Toronto

AUCTION! 110—Dairy Cows—110

70—TWO-YEAR-OLD AND YEARLING HEIFERS—70
SATURDAY, OCTOBER 14, 1916.

At the GARWOOD RANCH, three miles west of Nicolaus, Sutter Co., Cal. We will sell to the highest bidder, ninety Holstein and thirty Durham cows, seventy-five in milk, balance heavy springers; forty two-year-olds and thirty yearlings. If you are in the market for some extra good cows and heifers, don't miss this sale. Automobiles will meet morning trains on Northern Electric at Nicolaus and take you to the sale. Sale will begin promptly at 10 a. m.

E. J. WELDON, Sale Manager

SACRAMENTO,

CALIFORNIA

Bean Straw as a Stock Food.

[Written for Pacific Rural Press.]

With a none too plentifulness of hay and an extra large amount of bean straw available on account of the large bean acreage to be harvested, many stockmen will doubtless substitute large quantities of bean straw for hay this fall. In the large bean-growing districts along the coast, bean straw has been fed more or less extensively for a number of years, the price usually averaging about two dollars a ton in the stack in Ventura county.

In San Luis Obispo county more or less bean straw has been fed to dairy cattle, but experience has shown that excessive feeding of it to milk cows is dangerous because of the slinking of calves which is preva-

lent when cows are so fed. In moderate amounts, however, no bad effects need be expected either with young and dry stock or milking cows. In fact where some hay is fed, both young and dry stock can be carried along very cheaply.

On the Chas. Donlon dairy in Ventura county, bean straw is baled and stacked every year and fed in open feed racks in the corral to all classes of cattle. It is supplemented in the milking barn, however, with alfalfa hay and dried beet pulp, the combination giving excellent results.

Both sheep and beef cattle can be carried along on almost a complete ration of bean straw, but require grain also if fattening is required.

JERSEYS SELL AT A BARGAIN.

The Jersey dispersal sale held at Modesto last week was decidedly a buyers' event, the 61 head of registered cattle that were sold going at bargain prices. Being a dispersal sale, the offering was not as uniform in either age or quality as it might otherwise have been, and the sandwiching in of some rather old cows as well as some extremely young calves undoubtedly affected the average for the females.

Lack of official testing may rightly be attributed to some of the selling trouble at this sale, and this should be borne in mind at future sales. Dairymen as well as breeders who attend purebred sales want more than a registration paper; they want a milk bucket record. Several times dairymen were heard to ask, "What is the record of his dam?" and the inability of auctioneer Col. Ben Rhoades to answer the question caused the loss of another bidder.

Of the 61 head sold 29 were cows that averaged \$104.40. The 23 heifers averaged \$79.75 and 9 bulls averaged \$38.30. Buyers at the sale were J. A. Goodall, Turlock; Geo. T. Davis, Ceres; W. H. Hemenway, Stockton; H. D. James, Modesto; J. R. Phelps, Modesto; Dr. Stellar, Modesto; D. O. Lively, San Francisco; O. C. Glass, M. W. Brady, Modesto; O. C. Loud, Modesto; O. H. Merrill, Los Angeles; A. M. Colbert, Keyes; C. E. Manley, Ceres; F. M. Johnson, Los Angeles; F. W. Eleby, Modesto; F. D. Case, Modesto; C. E. Woodmore, Ceres; O. P. Yost, Modesto; C. R. Wheeler, Modesto; J. R. Davis, Turlock.

AUCTIONEER

(Phone Farmers 394.)
Will conduct sales anywhere in California.
Purebred livestock sales given special attention.
For dates and terms address
T. J. GILKERSON, Lemoore, Cal.

RHOADES & RHOADES

Expert Live Stock Auctioneers
PUREBRED STOCK SALES A SPECIALTY.
Sales Conducted in all parts of Calif.
Ben. A. Rhoades, Auctioneer.
1501-3-5 So. Main St., Los Angeles, Cal.

Live Stock Dealer and Auctioneer

Warren H. Hord

FOR HIRE:
HORSES AND MULES.
In Carload Lots a Specialty.
OFFICE: 703 MARKET STREET.
Stables and Sales Yard: 408 Valencia St.
San Francisco, Cal.

DAIRYING WITH POOR COWS.

To the Editor: I would like to know in what proportion to feed the following food to a milk cow to produce the most milk. My cows are in extra good flesh, but will give but little milk. I have well-bred young cows. The second day or so after calving second and fourth calves, they both would not give enough to falfa, oat hay, sugar cane, kaffir feed a calf. I have Sudan grass, alfalfa, grain and fodder of both kinds, and stock beets of which I feed quite heavily. In fact, they have about all they want of all the different kinds of feed I have all the time. I want to make use of the feed I have, as I raise it myself. I will also have pumpkins to feed soon. Please advise me as to the proportion, etc.—E. L. U., Hemet.

[Answered by Prof. F. W. Woll, University Farm, Davis, Cal.]

A cow that will not give more milk than a calf will take is a pretty poor cow, and the chances are that she cannot be fed so as to yield a profit to her owner, even under the best system of feeding. A good dairy cow will produce at least 20 pounds (or about 2½ gallons) of milk a day, on the average for the first, 3 or 4 months after freshening, while a calf will not need more than a gallon a day at first and about 2 gallons a day when old enough to be brought over to a skim milk diet, at 3 to 4 weeks old or before.

E. L. U. has a great variety of feeds to choose from, and should have no difficulty in feeding his cows so that they will give the largest amount of milk that they are able to. I would suggest feeding as much alfalfa hay as they will clean up, with a feed of either Sudan grass or oat hay a day, about 20 to 40 pounds of stock beets, according to the amount on hand, and a few pounds of grain daily. A common rule as to feeding grain when cows receive a good quality of roughage, like alfalfa hay or alfalfa and roots, is to feed a pound of grain for every five or six pounds of milk that the cows produce. Cows that do not yield at least 2 gallons of milk a day on this ration for some months after calving, are not worth keeping. They do not produce enough to pay for their feed, and had better be fattened and sold to the butcher. It is hopeless to try to make the dairy pay with cows of that kind.

A feature of the Rhoades-McAllister Sale was the large number of cows bred to King Segis Pontiac Jannek. There is a standing offer of \$150 for every heifer calf by this bull, at four months of age.

Edgemoor Farm Guernseys



Imp. Itchem May King, 25174.

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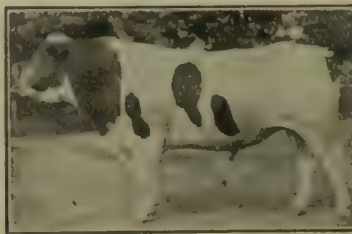
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RIVERINA FARMS
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(Continued from First Page.)

To compare this with the price to be received for whole milk at 12

Here are the sheets referred to:

Number of cows	
Date	
Pounds of milk produced	
Pounds of milk separated	
Per cent of fat of milk	
Pounds of fat	
Pounds of cream separated	
Pounds of cream delivered	
Per cent of fat in cream	
Pounds of fat in cream delivered	
Pounds of skim milk	

Total Income.	
Date	
Am't Cream Delivered	
Percent of fat in cream delivered	
Pounds of fat in cream delivered.	
Totals	
Price received per pound	
San Francisco butter quotation	
Total amount received	
Calves	
Sold	
Milk	
Sold	
Total Amount Received	

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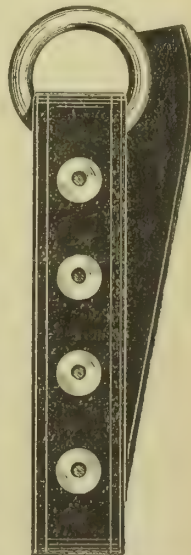
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Raising Poultry for Profit

THE VALUE OF CLEANLINESS.

[Written for Pacific Rural Press by Susan Swainsgood, Pomona.]

The lesson of cleanliness is barely understood by even good poultrymen, and poor ones have not an idea on the subject. You can write about cleaning up and spraying until doom's day for all the effect it has on some people, who really think that a chicken and a hog are filthy by nature and just revel and grow fat in filth. Now, there never was a greater mistake made nor one that has cost the farmer more money. Both poultry and hogs do the best they can under the conditions thrust upon them by unthinking people.

It is this accumulated filth that people think chickens like that brings on all the diseases we have. If chickens were kept clean—that is everybody's chickens—there would absolutely be no lice, no mites, no roup, and no chicken pox. Bowel troubles might be with us on account of wrong feeding, but even diseases of this kind would be easily corrected and gotten rid of because the chickens would have more stamina and vigor. I know a person who has raised chickens for twenty years on the same ground; true, he divides it into two plots, and while his chickens are running on one piece of ground he has some kind of a crop coming to maturity on the other, and in that way he keeps his ground clean and wholesome. I know another party who, to save labor and time, takes a long chance and never either spades, plows or harrows the ground his poultry run on, and for over seven years he has let filth accumulate, and laughed at the old "women" who talk about cleaning and spraying. A few days ago I heard he had at least 1000 hens with chicken pox. It has been quite a while in coming home, but it is there and unless he sets about cleaning up in real earnest now he will be laughing on the wrong side of his mouth.

Chicken pox, roup, and canker will decimate a flock more quickly than anything else under the sun, and they nearly always come together. The dry weather is favorable, and this is the time to clean up well, for after the rains set in wherever there is a weakling in the flock it is almost sure to get some or all of these troubles. These things become epidemic; the wind carries the germs great distances, sometimes for miles, before they fall into ground that is fertile for them by reason of filth. Birds, too, carry germs, but if your grounds are clean and your chickens healthy and vigorous they may fall but they will not harm your flock. There must be a breeding ground or germs are harmless, then we can laugh at them.

Just at present the fad is to vaccinate for chicken pox, but a man with a thousand affected will find that a pretty big job. I prefer to take a fine spray and a bucket of good strong dip and go along after they take to the roosts and spray them. Some will get the dip on the head and some on the body feathers,

but in all cases there will be enough of the liquid get in the eyes to cause the birds to wipe their heads on the feathers and in doing so they get more of the dip instead of getting rid of any. This is the easiest and surest way out of such a mess. The birds must be well fed and have a little tonic; not a stimulant, but an iron that will build them up and make them eat. Don't be sparing of the feed, neither in quantity nor quality, if you want fowls to get better quick from chicken pox.

What ails my ducks? Their eyes are sore and all the feathers have come off the head and bill. Is it roup?—Mrs. H. A.

Answering the last question first—no, it is not roup; ducks do not have roup. The loss of feathers and sore eyes are from the lack of depth in your drinking vessels. Ducks require deep drinking vessels in order that they may wash the feed off the head and eyes. If the dishes are shallow the feed bakes and eventually falls off giving the ducks a naked, sore appearance. If you will give them something like a candy pail and keep it filled with water every time they feed, the feathers will soon grow and the eyes be all right. In the meantime grease the bare spots and keep the ducks in a shady place for comfort.

H. V. Brooks purchased from L. Miles the last day of the Modesto fair the first cockerel, first, second and third pullets at the fancy price of \$50.

Two poultry shows will be held in Fresno during the coming winter. Both exhibits will be conducted under the auspices of the Fresno Poultry and Pet Stock Association, which is the fanciers' organization under the Tri-State Poultrymen's Co-operative Association. The first show will be for amateur raisers only and will be held in December. The main exhibit will be staged either in January or February.

Poultry Breeders' Directory

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The Disinfecting White Paint

A snow-white mineral paint combined with the world's most powerful germicide. Rids the premises of vermin, yet cannot harm the birds. Comes in powder form. Mix with water and it is ready to use. Can be put onto any surface with brush or sprayer.

Use It Instead of Whitewash

in poultry houses, dairies, barns, cellars and piggeries. Will not blister, flake or peel. Used and endorsed by experiment stations and many of the largest poultry and dairy farms.

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Your dealer will supply you. If not, send us his name and your order. Trial package, enough to cover 250 sq. ft. and booklet "The Disinfectant that Paints" for 25 cents.

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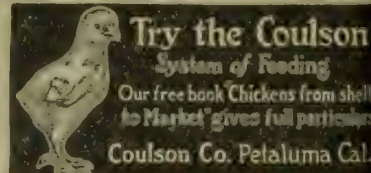
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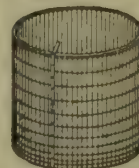
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Mrs. Best's Letter.

My Dear Friends: The shops continue to show new models and styles of all fall garments—the evening coats are quite the most luxurious looking models we have seen in some years. Many of them are made of brocaded silk or satin, others of plush lined with gaily flowered material and elaborately trimmed with fur or fringe. Gold colored silk trimmed in brown fur is one popular combination of color and peacock blue or rose, trimmed in gray or white fur, is another youthful combination. Black is popular for coats and also for evening dresses—not a plain black, but a black net embroidered in sequins or colored beads, made very frilly and having a vivid touch of color somewhere on the waist. Many of the evening dresses for girls have a tight little sleeve about three inches long finished with a frill, which is a very welcome change from the sleeveless dresses of last season.

There is a new rain coat on the market, a combination of silk and rubber, that is developed in all the light pastel shades and is equally attractive for a motor coat in good weather as for a raincoat in the winter.

Blouses continue to be sheer and dainty and are seen in all colors, but at one of the good stores, one of the salesladies confided in me that the really well-dressed women this winter were going to have blouses of crepe to match their suits for street wear. Whether you take up the fad of separate collars for suits, should depend upon their becomingness to you. Do not think you must wear them, for there are many well-dressed women who do not.

In hats, the only new model is the tam-o'-shanter, which is very becoming to youthful faces and can be made at home by a skillful needlewoman. The loose artist's model, I think, is just a fad, but the stiffened tam, either with or without a brim, will probably be good style all winter.

Those of you who have jersey cloth sport suits left over from summer are much in luck, for they are equally good style now—the new models that are coming in for fall wear are almost identical in cloth and cut.

Angora Shetlands are the newest thing in sweaters seen in gay colors, both machine and handmade. The slip-on is also shown but it is a trying style; one must be neither too stout nor too thin to wear it well.

Rosabella Best.

HOUSEHOLD RECIPES.

Frying Doughnuts.—When frying doughnuts, put a teaspoonful of vinegar into the fat and the doughnuts will soak less grease and be light and fluffy.

A Substitute Butter.—Turkey fat, after it has been tried out, is a splendid substitute for butter in making cookies or biscuits.

National Apple Day.—The need for well-varied meals ever confronts the housekeeper and one of the most effective and economical ways of accomplishing that end is to vary the forms of serving a staple food. For

this purpose, apples are an ideal fruit, for they can be sewed in many ways, are easy of digestion and appetizing to all members of the family. Try some of the following recipes, not only on apple day, which is the third Tuesday of October, but other days as well:

New England Apple Sauce.—Pare, core and quarter twelve tart apples of medium size. Put into an earthen jar or deep casserole; add one and one-half cups of sugar and one cup of water. Cover and bake slowly in moderate oven, until a deep red, from two to three hours.

Fresh Apple Custard Pie.—To one pint of apple sauce add one quart of milk, four eggs, one tablespoon cornstarch, pinch of salt, one-fourth grated nutmeg, one tablespoon melted butter, juice and grated rind of one lemon and one cup of sugar and bake with under crust only.

Apple and Quince Preserves.—Pare, core and quarter apples; add a third as many quinces that have been pared, cored and cut into small pieces and boiled until tender. Make a syrup of the water in which the quinces were boiled and as much sugar as there are apples and quinces. Let boil, skim and drop the quinces and apples in and let boil for fifteen minutes; dip out carefully and put into jelly glasses; boil the syrup until it will jelly and pour over the fruit.

Baked Apple Dumplings.—Cut rich pie crust into six-inch squares. In the center of each place a small apple, pared and cored. Fill the apples with sugar, cinnamon and a whole clove. Wet the edges of the pastry with white of egg, fold it over the apple, pinch and flute to look well; bake about forty minutes; toward the last brush the top with white of egg and sprinkle with sugar. Serve with hard sauce.

Persimmon Relish.—Take five pounds large Japanese persimmons ripe enough to eat. Wash and pack in fruit jars, being careful not to bruise. Take two quarts good cider vinegar and boil with three pounds of sugar and a few pieces of stick cinnamon. Let cool and fill jars, seal and set away. In a short time they will be delicious. Serve with roast pork and mutton.

Honey Fruit Cake.—Four eggs, five cups of flour, two cups of honey, one cup of sweet milk, two teaspoonfuls of cream of tartar, one teaspoonful of soda, one pound of raisins, one pound of currants, half a pound of citron, one teaspoonful each of cloves, cinnamon and nutmeg. Bake in a slow oven. This cake will keep a long time.

Cretonne costumes to be used freely for draperies, sofa pillows, shirtwaist box covers, bolsters and scarfs for dressers.

BROWN BETTY.

Butter a deep pudding dish and place a layer of finely chopped apples in the bottom; then add a layer of very fine bread crumbs, sprinkle with sugar and spice; add a little butter, then another layer of apples, and so on until the dish is filled. The top layer should be of crumbs seasoned to taste. Bake in a moderate oven until quite brown, and serve while hot, either with cream or hard sauce.

THE HOME CIRCLE

I JUST KEEP LIVIN' ALONG.

Some folks they keep huntin' for sorrow,
They sigh if they're right or they're wrong;
But this day's as good as tomorrow,
So I just keep livin' along.
I just keep livin' along,
I just keep singin' a song.
There's no use to sigh
While the sun's in the sky.
So I just keep livin' along.

When the Lord made the world, was I in it
To give him directions? He knowed
I wouldn't know how to begin it,
Bein' nothing but dust by the road.

So I just keep livin' along,
And I can't say the Lord's work is wrong.

I never will sigh
While he's running the sky.
I just keep livin' along.

I'm thankful for sun and for showers.

The Lord makes the winter and May,
And he'd hide all the graves with his flowers

If folks didn't weed 'em away.
So I just keep livin' along.
Still thankful for sunlight and song!
I know when it's snowin'
God's roses are growin'.

So I just keep livin' along.
—Frank L. Stanton.

NEW COOKING TERMS.

Here are a few of the best known and most frequently used terms met with in the average recipe:

A la creme—With cream sauce or white sauce.

Au gratin—A scalloped dish, in which cheese is generally used.

Au naturel—According to nature.

Blanc mange—White food, literally.

Blanquettes—A white fricassee.

Canape—A sandwich, small and highly flavored, and used as an appetizer. It is usually served with an under crust (slice of bread or toast or wafer) only.

Casserole—An earthen baking dish.

Croutons—Literally, crusts. Small squares of toast.

Espagnole—A Spanish sauce.

Farci—Stuffed.

Fondue—A dish made of cheese and eggs.

Fanchonettes—Small pies with meringue.

Hollandaise—Dutch white sauce with egg-yolks and lemon.

Knolff—Tiny dumplings of flour.

Krummel Torta—Crumb tart.

Lyonnaise—A sauted dish, seasoned with onions and parsley.

Maitre d'Hotel—Literally, master of the hotel. By the head steward.

Mayonnaise—A sauce originated in the French province of Mayonne.

Meringue—A frosting of beaten white of egg and sugar.

Mousse—A froth.

Parfait—Perfect. A frozen whipped cream mixture.

Pfeffer Neusse—Pepper nuts.

Puree—A soup thick with the mashed pulp of the article used.

Ragout—A highly seasoned meat stew.

Ramekins—Individual baking dishes.

Souffle—Lightened with air.

Tartare—Sharp.

Timbales—Cup-shaped.

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WANTED—Young men and women to attend the Western Normal Courses—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A." Western Normal, 524 E. Market St. Stockton, Cal.

YOUNG MAN thoroughly familiar with Holt Caterpillars, wants place Fall plowing with engine. Will stay as long as wanted. Shop and field experience. Total abstinence. C. S. Robinson, 137 No. San Joaquin St., Stockton.

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FOR SALE—55 acres choice sandy loam land, Modesto irrigation district, six miles east from Modesto. 35 acres in alfalfa, balance raw land. Want sell this piece as have more land than can handle. Price \$9000, half cash, balance long term loan at 7 per cent interest. Ed F. Hutchings, Modesto, Cal.

WANTED—Farms, large and small, in all parts of the State. Our system of placing owners in direct communication with buyers has brought us hundreds of applications for farms. What have you to offer? Write for our listing blanks. Western Farms Bureau, 660 Market St. San Francisco

FOR SALE—Dairy and stock ranch containing 285 acres—100 acres in rich bottom land. Well stocked, good buildings, etc. Income \$3000 per year. Write owner for particulars. J. Shank, Jenny Lind, Cal.

WANTED TO RENT an orchard on shares by experienced orchard superintendent. Box 270, this office

WANTED—Second-hand 6- or 8-horse-pull orchard tractor. R. F. D., No. 19, Orland, Cal.

Good Health.

(By H. E. Pastor, M. D.)

Country Babies and City Babies.

We are told by the New York Sun that babies born in the slums of New York City are healthier than babies reared in the country, and we presume the same rule holds good relatively in California. This should not be. Mothers should be healthier in the country, and therefore the baby's food supply better, and if cow's milk is used it should be fresher. There are oceans of fresh, sweet air in the country, uncontaminated by a city's smoke, sewers or garbage, and baby should have an abundance of it. It is soothingly quiet in the country, too, which conduces to restful slumber; and next to food nothing is more important to baby's welfare than plenty of undisturbed sleep. Then what is the matter? Wherefore the lower mortality in the city's slums than in the great outdoors of the country, which is Nature's unrivaled sanitarium? It can only be accounted for on the assumption of the city's superior sanitation—the outcome of collective intelligence and action. Let mothers in the rural districts, and fathers too, study the important matters of domestic hygiene and sanitation. Everything naturally favors greater healthfulness in the country, of the adult as well as of the baby. It is the hope of the Rural Press that this preponderance of favorable conditions in the country shall not be lost through ignorance or inattention.

A Few Words about Bones.

The writer of this column was handed a newspaper clipping the other day which bore the sensational caption, "Bowlegs from Baked Spuds," and was asked for an opinion on its merits. Like other specimens of "canned science" so lavishly dished up these days in the daily press, it makes interesting reading for the hoi polloi, but should not be taken too seriously. The article contains a dash of truth, inasmuch as potatoes are a fat-forming rather than a bone-forming food, and a child fed exclusively on potatoes might become physically rickety just as a person whose reading is confined exclusively to the daily press becomes mentally rickety. The simple facts are, as every well-educated person knows, that the bones consist of an animal (or organic) constituent and an earthy constituent, the two being very intimately associated. The organic part forms about one-third and the inorganic about two-thirds of the bony mass, though these proportions vary at the different periods of life, the organic matter preponderating in the infant and the inorganic in the aged. It is not uncommon for children of the poor and ignorant to become rickety through defects of nutrition, as an insufficiency of food, and especially of food containing the proper proportion of mineral salts; and the bones are liable to become bent or curved from the weight of the body. Bowlegs are a common example. The most important salt entering into the formation of bone is phosphate of lime, though carbonate of lime, phosphate of magnesia and common salt (chloride of sodium) are others. Oats, wheat, rye and other cereals

are rich in these salts, and should not be omitted from the dietary of the weaned child, or when the mother's breast is supplemented with artificial feeding. The human milk itself is a perfect food for the human infant. If you are in need of advice in the preparation of food for children or an infant, get it from a physician or an experienced nurse, and not from a penny-a-liner.

The Orange as a Breakfast Fruit.

Stewed prunes, figs, or apples are all in their way wholesome when eaten a half an hour or so before

breakfast. The orange, however, surpasses them all as a pre-breakfast fruit. It is palatable and refreshing, and is one of the best and safest intestinal antiseptics we have. Besides stimulating the appetite, it reduces to a minimum the putrefaction found in the alimentary tract of even healthy people careful of their diet. Grapefruit is an acceptable substitute, containing as it does a tonic bitter principle similar to quinine. Use sugar to taste.

He who loses wealth loses much; he who loses a friend loses more;

but he that loses his courage loses all.—Cervantes.

SUGGESTIONS FOR THE HOME.

Pedestal lamps of wood, enameled in two-tone stripes and surmounted with a large silk shade are very popular.

The newest thing in a piano bench has carved legs and is upholstered in tapestry.

Braided rag rugs almost room size, in oval form are very popular.

Upholstered furniture has brought back in use all the old-fashioned guimps for furnishing.

26 Extra Features
73 New Conceptions

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MID-YEAR
MODEL

20% Extra Value
Due to Factory Efficiency

20% Extra Value

Due to John W. Bate, the Efficiency Engineer

We intend that the Mitchell shall offer 20 per cent greater value than a like price can buy elsewhere.

We save at least that in this factory. It was built and equipped by John W. Bate to minimize every cost. It has reduced our making cost one-half. It has given us an advantage of 20 per cent, we believe, under any rival Six.

90% In the Chassis

About 90 per cent of this extra value goes into this Bate-built chassis. It goes largely into extra strength. There are 440 parts which are drop-forged or steel-stamped—three times as strong as castings.

The major strains are met by Chrome-Vanadium steel, costing up to 15 cents per pound. To every part is given at least 50 per cent over-strength. The rear springs are Bate cantilevers, not one of which has ever broken.

We include a power tire pump, an extra-cost carburetor, a ball-bearing steering gear, an easy type of control.

There are in this car 26 extra features which other cars omit. And those extras will cost us about \$2,000,000 on this season's output alone.

Aims at 200,000 Miles

Mr. Bate has aimed at a lifetime car. Two of his Mitchells have already run over 200,000 miles each.

That's forty years of ordinary service. Seven of them have averaged about 175,000 miles each.

See what Mr. Bate's genius has done for the Mitchell. His improvements number more than 700. See what his efficiency gives you in extra values. A half-hour spent with a Mitchell dealer will win you to Bate-built cars.

A Many-Year Decision

The decision you make on a fine car now will affect you for many years. If you get the right car, you may never need to buy another. If you buy the wrong car you are likely to change before long.

Don't judge by demonstrations only. All new cars run well. Go into the hidden facts. Get the records on endurance. Above all else, judge by the man who builds it.

Go deep enough, and you are bound to choose the Mitchell. Many noted engineers have done so in buying cars for themselves. Your Mitchell dealer will show you a list of them.

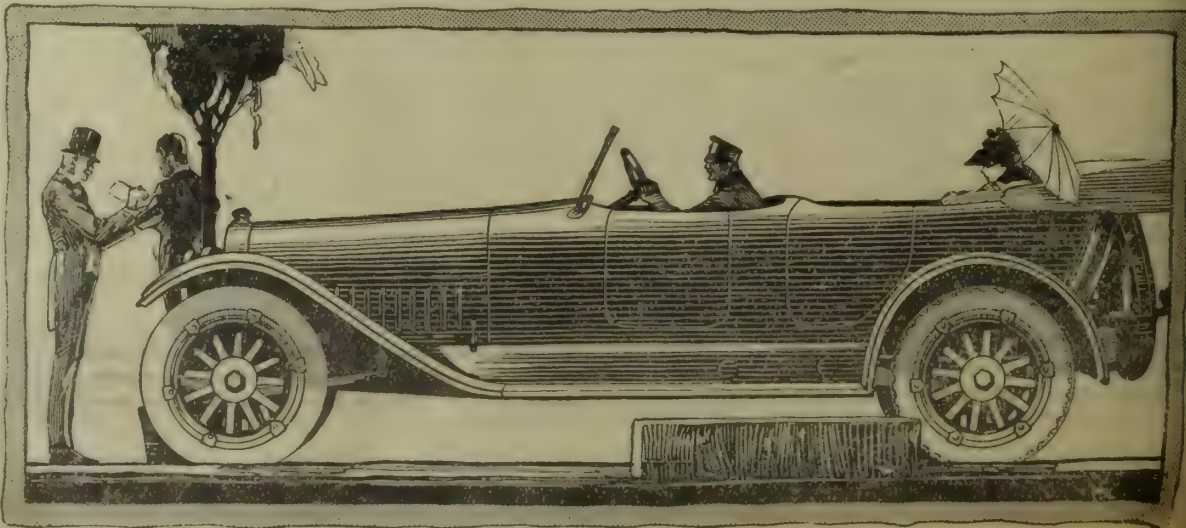
You will get in addition the most complete car that's built. In the Mid-Year Mitchell you will get 73 new conceptions. Our designers examined 257 of this year's models before completing this one.

Ask us the name of the nearest Mitchell dealer, if you do not know him. For your own sake, see the car he has.

(122)

Mitchell Motors Company, Inc.
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\$1325 F. o. b. Racine
For 5-Passenger Touring Car or 3-Passenger Roadster
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Equipped with Demountable Top Only \$300 Extra
High-speed economical Six—48 horsepower—127-inch wheelbase. Complete equipment, including 26 extra features.





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TOWER'S FISH BRAND

everything about a rainy day seems to say to keep dry, to work in comfort wear the **FISH BRAND REFLEX SLICKER \$3.**

A.J. Tower Co - BOSTON

Floral Department.

[By Geo. N. Tyler.]

Cyclamen.—About the first of October is the time to sow the seeds of cyclamen for next winter's blooming. Sow in boxes or pans of finely prepared compost, prepared as follows: One part loam, two parts leaf-mould and one part sharp sand or fine gravel. Press the soil firmly on top and sow the seeds one inch apart each way. Cover with a light layer of leaf-mould and sand in equal parts to the depth of one-eighth inch, put the boxes in the shade where the temperature is about fifty degrees, and water thoroughly, but be careful in watering not to wash the seed. Use a very fine spray. It takes about four weeks for cyclamen seed to germinate. Sow a good strain of seed, the best you can buy, if you want good results.

Pansies that were sown in August are now ready to be boxed off. Fill flats with three inches of finely prepared soil, and prick out the little seedlings and plant them two inches apart both ways. The correct way to plant them is to use a dibble or pointed stick about eight inches long and about the size of a lead pencil. Make a round hole with the dibble and prick out and plant one seedling at a time. If you prick out more the delicate roots will dry up if exposed to the air for any length of time. In planting the seedlings do not let the roots hang in a little cavity and firm the soil on top, but use the dibble and work the soil around the roots. Never mind the top—when you water with a fine spray the top will level off all right, and be sure and water as soon as you fill up the flat with plants.

After watering put the flat away in the shade for about five days, and then give full sun—but never let them dry out at the root.

Tuberous Rooted Begonias that were started early should now be put outside in the shade, in a sheltered place, and gradually dried off. After the foliage turns yellow put them out in the sun and dry them off entirely. After the stems drop from the pots, put the pots, bulbs and all away in the cellar, or where they won't freeze for the winter.

Cuttings.—You can put in all kinds of cuttings now; geraniums of all kinds root very easily. Sow all the seeds you can for next spring's blooming—those that are hardy.

HOUSEHOLD HINTS.

When your stocking feet are past mending, cut off the legs for bags to put over the broom when wiping walls or cut in strips and fasten to a mop handle for a dry mop.

If corks are too large for the mouth of the bottles for which they are intended, soak them in boiling water for a short time and they will soften so they can be pressed into the bottles.

It cannot be said too often that sand or flour sprinkled over burning grease or oil will put out the fire.

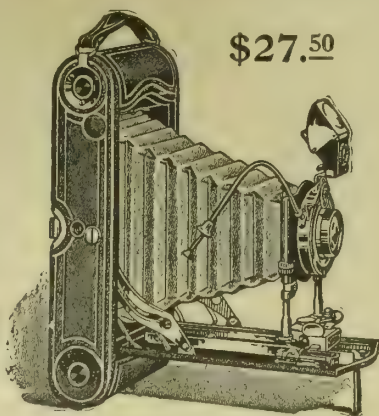
To prevent white silk handkerchiefs from turning yellow in washing, do not boil nor rub soap directly upon them. Use a lather of good white soap and then rinse thoroughly and iron while they are still damp.

For sink shelves and the kitchen

table, nothing is better for a bleach than lemons.

Anastigmatic and Autographic

\$27.50



The 3A KODAK

Has the autographic feature whereby you can date and title your films at the time of exposure, is fitted with the new Kodak Anastigmat f.7.7 lens—a lens that leaves nothing to be desired in definition (sharpness) and flatness of field and has more speed than even the best of the Rapid Rectilinear lenses.

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Ant Destroyer—is slow acting—does not kill instantly, but gets the nest as well as the parent. Does not lose strength. Positively non-poisonous—no danger to children, house pets, or foodstuffs. Send 6c for trial can. Ask your neighbor. She uses it. At your dealer. Accept no substitute.
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Racine Horse Shoe Tires are making sensational records of actual mileage service, although they sell for less than other good tires. This is due to the many distinctive features of the tires. Drastic road and factory tests have proved absolutely that they survive the most abusive wear and tear, withstanding the ceaseless attacks of the worst roads long after tires of lower quality have been ruined by the same conditions. Our special tire folder gives interesting facts. Write for it.

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PATENTS PATENT AGENCY

911 Crocker Bldg., S. F.

Circular containing 100 mechanical movements mailed free.

SAN FRANCISCO.

San Francisco, Oct. 4, 1915.

Wheat.

Reports of shortage in various parts of the world have caused further advances in Eastern and Northern markets, resulting in another sharp advance here, making prices the highest in long time. Local business is mostly of jobbing nature, trading has been fairly active.

[f. o. b. San Francisco.]

Sonora, wheat	.....\$2.20@2.25
Northern club	.....2.15@2.25
Calif. club, ctt.	.....2.20@2.25
Northern Bluestem	.....2.50@2.55
Northern Red	.....2.30@2.50

Barley.

Speculative buying continues at gradually advancing prices, the spot market has again been marked up, holders taking a firm stand.

[f. o. b. San Francisco.]

Shipping, ctt.	.....\$1.80@1.83
Choice feed, ctt.	.....1.70@1.75

Oats.

Feed is firm, in sympathy with other grains, the only advance is red seed.	
Red feed	.....\$1.80@1.85
Red seed	.....2.00@2.25
White	.....1.75@1.80
Black seed	.....3.00@3.25
Texas Red seed	.....2.25@2.35

Corn.

Old Egyptian is getting well cleaned up, except for off-grade stock that is not readily salable, new grain is held slightly higher, with no movement. Eastern Yellow, ctt.\$2.10@2.15
Milo Maize Nominal
Egyptian, new 1.80@1.85

Beans.

Weather is the determining factor in the bean market just now, recent rains have caused a much firmer feeling, especially as they have not been followed by drying weather. Damage has undoubtedly been extensive, but reports are too conflicting to warrant any conclusion as to real loss for several days. The outlook for large whites is not very encouraging at present, buyers are anxious to take on supplies, causing further advance; but not certain that the firmness will continue. Blackeyes have stiffened up a little, other varieties are easier.

[On wharf, San Francisco.]

Bayos, per ctt.	.....\$4.75@5.00
Blackeyes	.....3.60@3.70
Cranberry beans	.....4.75@4.90
Horse beans	.....3.25@3.50
Small Whites (south) new crop	..... 7.00
Large Whites, new crop	..... 6.50@6.75
Pinks	.....5.50@5.75
Limas (south)	.....5.30@5.40
Red Kidney	..... 6.50
Mexican Reds	.....4.90@5.00
Tepary beans	.....4.25@4.50

Seeds.

Demand for alfalfa is increasing, cover crop seeds in general in active demand since the rain. Canada field peas very scarce.

[Wholesale prices, S. F.]

Alfalfa, per lb.	.....20@22 c
Oregon Vetch	.....4½@5 c
Mellilotus Indica	..... 7½ c
Mellilotus Alba	..... 20 c
Bur clover, re-cleaned	..... 10½ c

Hay.

Some hay still in the fields has undoubtedly been lost, or at least made unmarketable by the rain; according to some reports the amount was considerable, though it is too early to know definitely. Difficulty of getting cars has tended to keep a great deal of hay in the fields, but storage facilities have been provided for much of it. The stiffening tendency of such losses will be partly nullified by the early supply of green feed; though better grades of hay will no doubt be quite firm. Locally supplies continue light, except for alfalfa, which is offered freely, though the outlook for another cutting is poor. Values are pretty well maintained on alfalfa as well as grain hay.

[Wholesale prices per ton, carload lots, San Francisco.]

Wheat, No. 1	.....\$13.00@14.50
No. 2	.....10.00@12.00
Tame oats	.....11.50@15.50
Wild oats	.....10.50@13.00
Barley	.....10.50@13.00
Alfalfa	.....10.00@14.50
Stock hay	..... 8.50@ 9.50
Straw, per bale	..... 35@ 50

Feedstuffs.

Demand continues fairly active, values generally firm, with advance on rolled barley.

[Wholesale prices, per ton, carload lots, San Francisco.]

Beet pulp, per ton	..... Nominal
Alfalfa meal, per ton	.....\$18.00@19.00
Bran, per ton	.....26.00@27.00
Oil Cake	..... Nominal
Cocunut cake or meal	.....23.00@25.00
Cracked corn	.....44.00@45.00
Middlings	.....35.00@38.00
Rollod barley	.....35.00@36.00
Tankage	..... 45.00
Rollod oats	.....34.00@35.00
Rice middlings	.....30.00@32.00

Vegetables.

Rain has curtailed supplies, market in general is firmer. Cucumbers much less plentiful, with corresponding advance, tomatoes also are doing better at the moment, though lower prices are likely to follow.

Celery, Alameda, bunch	..... 12c
Cucumbers, lug	.....30@50c
String Beans	.....2@3c
Lima Beans	.....2@3c
Summer Squash, lugs	.....25@30c
Eggplant, lugs	.....30@40c
Peas, lb	..... 5@ 6c
Tomatoes, lugs	.....35@50c

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

Green Corn, sack	.....50@1.50
Okra, box	.....40@60c

Potatoes and Onions.

Potatoes are easy, the shipping demand is being filled from mountain States and more river stock is coming this way; prices are no lower. Sweet steady. Onions have been marked up sharply, as the stock on hand is closely held by speculators who look for shortage later on.

[On wharf.]

Potatoes, ctt., Delta	.....\$1.35@1.60
Salinas	.....2.25@2.35
No. 2	......75@1.00
Sweet Potatoes, per ctt.	.....1.50@1.75
Onions, yellow	..... 2.30
Garlic, new crop, per lb	..... 4@ 5c

Poultry.

The special demand is over, with stock coming in more freely from nearby points, market shows an easier tone. Prices are not quotably lower. Turkeys are getting more attention, with large young stock higher.

[Wholesale prices, S. F.]

Turkeys, live, lb. young, large	.....26@28c
Old, large	.....24@25c
Broilers, 18 lbs. to doz. and less, lb.	.....23@30c
do, over 18 lbs. to doz.	.....24@26c
Fryers	..... 25c
Hens, extra, per lb., colored	..... 20c
Small leghorn	.....15@17c
Smooth Young Roosters, per lb. (3 lbs. and over)	..... 25c
Squabs, per lb	.....33@35c
Geese, per pair	.....2.50@3.00
Ducks	.....15@16c
Old	.....13@14c
Belgian Hares	..... 11c

Butter.

Arrivals fairly large, though Los Angeles is taking some shipments from the Valley country, prices continue to advance. Notwithstanding the prices, which are about 6c above last year's, there is still a demand for shipment to England, about 5 cars leaving last week; there is also some export business to Pacific ports.

Extra	.....31½	31½	32	32½	32½
Prime 1st	.....30	30	30	30½	31
Firsts	.....29	29	29	29½	29½

Eggs.

Prices showed little change until Wednesday of this week, though arrivals have been decreasing and the local trade becoming more anxious to buy. This has resulted in a 2c jump, which is expected to hold.

Extras	.....39½	40	40	40½	42½
Sel. Pul.	.....34	34½	34½	35½	38

Cheese.

Fancy flats have been marked up 1c, with moderate receipts and quite lively local demand. Other grades unchanged.

[S. F. Dairy Exchange prices.]

Y. A. s, fancy	.....17 c
Fancy Calif. Flats, per lb	.....16½ c
Monterey Cheese	.....15@16c

Deciduous Fruits.

The market is narrowing down a little, plums being cleaned up, peaches and figs will soon be out. Pomegranates are offered in considerable quantity around \$1 per lug box, persimmons are lower on larger receipts. Oregon cranberries easier, some Cape Cod stock is offered at the appearing figures, with good demand. Apples steady here, but shipping business is slow, owing to lack of export facilities, speculators are not taking hold. Accordingly many carloads are being stored by packers. A few winter Nellis pears are appearing. Figs higher, with little good stock appearing. The market has been swamped with Turlock cantaloupes, but shipments have been shut off. Watermelons higher. Good grapes scarce and very firm, with buyers much in evidence. The rain has so curtailed the supply that shippers are having difficulty in meeting their contracts, the amount stored in barrels is likely to be limited.

[Wholesale prices, San Francisco.]

Huckleberries, lb., fancy	..... 8@10c
off grade	..... 5@ 6c
Strawberries, chest	.....\$4.50@5.00
Cranberries, Oregon, box	..... 3.50
Cape Cod, bbl.	..... 8.50@9.00
Apples:	
Bellflower, box	......60@75c
Jonathans	......85@1.00
Newtown	......85@1.00

Pears, Bartlett, bx, No. 1	.....1.75@2.00
No. 2	......75@1.00
Persimmons, box, dbl layer	......75@1.00
Pomegranates, lug	..... 1.00
Peaches, lugs	......60@.75
Carriers	......70@.90
Quinces, lugs	......40@.50
Figs, Cal. black, box, double layer	......75@.90
White, single layer	......50@.60
Cantaloupes, lug	......60@.75
Casabas, crate	......63@.80
Watermelons, doz.	.....1.25@2.50
Grapes, Malaga, small crate	......60@.75
Muscat, lug	.....1.25@1.50
Thompson, lug	.....1.25@1.50
Tokay, crate	......60@.75
Black, lug	.....1.00@1.25

Dried Fruits.

No further price changes noted, but local packers describe the market as firm and active, with lively demand for practically all kinds of fruit from all large consuming markets. Buyers are making liberal provision for their holiday requirements, in many cases covering for entire season, feeling that prices are likely to go up rather than down, and that a large consuming demand is assured. Prices now offered appear satisfactory to most of growers, many of whom are cleaning up their crops. Apples are moving fairly well at recent advance. Apricots are practically out of first hands, most of the figs also under contract. Growers are now generally admitted to be in control of the prune situation, heavy purchases are being made at present range. Small sizes are very scarce, and are getting a premium over large, some sellers having offered to buy back contracts for such goods at an advance. Packers who sold short are said to have lost heavily.

[Net to growers, bulk basis, f. o. b. shipping point.]

Apples, new crop	.....5½@5½c
Apricots, per lb. 1916	.....13 @14 c
Figs, white, 1916	..... 5 @ 5½ c
Figs, blk, 1916	..... 4½ c
Callimyrna, 1916	..... 9 @10 c
Prunes, 4-size basis, '16	..... 5½ @ 5½ c
Pears	..... 6½ @ 7 c

Honey.

There is no shipping demand worth mentioning at present, the local trade has ample stock for immediate needs, and no disposition to accumulate larger supplies until later on. Water white extracted is very scarce and a considerable amount could be used here to advantage. Other grades are only steady, it is doubtful if much could be sold at full quotations.

[Wholesale prices, San Francisco.]

Water white, comb	.....13@15c
Light Amber	.....10@12c
Amber	..... 8@10c
Water white, extracted	..... 8 @ 9c
Light amber	..... 6 @ 7c
Dark	.....4@4½c

Almonds.

Values practically nominal, as the crop of almonds has nearly all been disposed of.

[Exchange prices.]

Nonpareils, lb	.....20½ c
I. X. L.	.....18 c
Ne Plus	.....17 c
Drakes	.....16 c
Languedoc	.....16 c

Horses.

Local market dull, nothing worth mentioning having appeared here this week, though a fair activity is reported at some points in the country. [Approximate values in San Francisco, based on auction sales.]

Drafters, 1700 lbs. and up	.....\$ 250
Drafters, 1550 to 1650 lbs	.....150@200
Chunks, 1350 to 1500 lbs	.....150@175
Wagon horses, 1050 to 1350 lbs	.....110@150
Green Mountain range horses, 950 to 1200 lbs	..... 20@ 75

Hides.

The market is active and somewhat firmer than last month, with slight advance in several lines.

Wet Salted:	
Steers	.....19@19½c
Cows	.....19@19½c
Light hides, 25 to 48 lbs.	.....19@19½c
Kip	.....21@22 c
Calf and veal	.....27@28 c
Dry Hides	.....31@32 c
Dry Kip	.....34@35 c
Dry Veal and Calf	.....36@40 c
Pelts, long wool	.....\$1.75@1.90
Short wool	......85@1.10
Horse hides, wet, large, ea.	.....5.00@5.50
dry, large	.....3.00@3.50

Special Deciduous Market Report.

By J. L. Nagle.

Sacramento, Cal., October 3, 1916.

The rain that started Saturday has wet down the grape districts to such an extent that picking and packing are temporarily delayed. Some damage has already been done but to what extent cannot at the present time be estimated. If the unfavorable weather continues, the packing of grapes in drums will be affected considerably.

About 70 per cent of the first crop of Tokays has been harvested and the second crop which has developed into fair quality and size, will be ready for harvesting in about a week.

Malagas are getting soft account of being over ripe and shipments of this latter variety will probably be very

light from now on and the season will probably close within the next two weeks. All markets on good stock show an active demand at profitable prices. The following prices have ruled for the week:

New York.—Tokay grapes averaged \$1.31; Malaga, \$1.15; Cornichon, \$1.25; E. Hardy pears, \$2.38; Levi peaches, 95c.

Boston.—Tokay grapes, \$1.50; Malaga 97c; Cornichon \$1.27.

Chicago.—Malaga grapes, \$1.10; Tokay \$1.20; Muscat 88c; Cornichon \$1.47.

Total shipments to Oct. 3, 1916 5 cars; total shipments same date 1915, 11805 cars.

LOS ANGELES.

Los Angeles, Oct. 3, 1916.

Butter.

Receipts California by rail for week ending Tuesday, October 3:

1916	.....289,900 lbs.
1915	.....289,120 lbs.

Firmness continues to characterize this market. In sympathy with strong markets east, moderate receipts and a steady and fair consumptive demand prices held up well throughout the week and the arrivals were well taken care of. Following the rain the market Tuesday showed weakness, though was not quotably lower:

California extra creamery	.....32c
California prime first	.....31c
California first	.....30c

Daily quotation on 'Change:

	1916	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
1916	.....32	33	32	32	32	32	32
1915	.....26	26	26	26	26	26	26

Eggs.

Receipts by rail as reported to the Produce Exchange for week ending Tuesday, October 3:

1916	.....1088 cases
1915	..... 870 cases

There was an absence of speculative life in this market the past week—light receipts caused trading to hold back and go slow. The consumptive demand, however, was sufficiently strong to take care of the arrivals and uphold prices under the influence of strong markets east and light production.

Fresh ranch case count

Pullets36
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Daily quotations on 'change:

	1916	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
191636	37	37	37	37	37	37
1915	.....40	41	41	41	41	41	41

Poultry.

Receipts past week purely local and only moderate. Broilers, fryers and heavy hens in good demand. Light hens very dull. Turkeys slow sale and lower. Ducks and geese draggy but unchanged. We quote from growers:

Broilers, 1½ to 2 lbs	.....20@21c
Fryers, 2½ to 3 lbs.	..... 18c
Hens under 4 lbs	.....14@15c
Ducks	.....14@15c
Geese	..... 12c
Roosters, 3 lbs. up (soft bones)	.....16c
Old Roosters	..... 10c
Turkeys, heavy, 12 lbs and up	.....19@20c
Turkeys, light	.....16@19c
Squabs, live, per doz	.....\$1.50@3.00
Dressed	.....3.75@4.85

Walnuts.

Demand continues active and a big per cent of the crop has already been placed. About 18 to 20 cars moving a day until the rain struck here. The rain did no especial damage, but will delay gathering and marketing about a week. The associated prices this year and last are:

	1916	1915
No. 1	.....\$15.50	\$13.60
No. 2	.....12.50	10.60
Budded	.....19.00	17.00
Jumbos	.....17.50	16.60

Orchard run 3c per pound less.

Hay.

Market very dull. Only choice lots are being taken and such as needed for immediate use. No buying ahead and each day some being put into store, as salesmen are unable to make clearances. We quote per ton f. o. b. Los Angeles:

Barley hay	.....\$14.00@16.00
Oat	.....16.00@18.00
Alfalfa, Northern	.....13.00@14.00
Alfalfa, local	.....15.00@16.00
Straw	..... 7.00@ 7.50

Citrus Market Report

Los Angeles, Oct. 2, 1916.

Shipments of oranges from November 1, 1915, to October 1, 1916, 30,530 cars of oranges and 6,669 cars of lemons. Same time last season 32,279 cars of oranges and 6,535 cars lemons. These figures show a falling off in the shipment of oranges this season of 1779 cars of oranges, but an increase in the shipment of lemons of 134 cars.

It is getting late in the season and the markets in the Central West and East are being crowded with late peaches and pears and this is the height of the apple season and all are selling cheap. Hence a slow and weak market for oranges, and the first part of our review week both oranges and lemons were lower. For the past few days there has been a better tone to the orange market. The weather, however, is against lemons, which are both draggy and sharply lower. Local packers are only bidding 1½ to 2c or 88c to \$1.20 per box in the grove, against 2 to 4c per pound or \$1.10 to \$2.40 per box in the grove a week ago. Oranges were bid for at 2 to 3½c per pound or \$1.00 to \$1.95 per box in the grove. Grapefruit was bid for at 2 to 4c per pound or \$1.00 to \$2.20 per box in the grove. Reports from Tulare county say that the outlook for the early orange crop is very encouraging. The fruit is fine and yield promises 25 per cent larger than last year.

New York, Sept. 26.—Sold 14 cars Valencia, 2 cars mixed and 2 cars lemons. Valencia steady in 200s and easier on 176s and larger. Lemons decidedly lower. Weather fair. Valencia sold from \$2.00 to \$5.20. Lemons sold from \$3.25 to \$4.35. Grapefruit, \$1.40 to \$2.50.

Boston, Sept. 26.—Four cars sold. Market doing better on oranges; unchanged on lemons. Valencia \$3.80 to \$5.00. Lemons \$4.00 to \$4.70. Philadelphia, Sept. 26.—Seven cars sold. Market lower on oranges but

unchanged on lemons. Valencias \$2.20 to \$4.90; lemons \$3.65 to \$4.80.
New York, Sept. 28.—Seven cars Valencias sold and 1 car lemons. Valencias \$1.75 to \$5.75; lemons \$1.30 to \$3.15.
Boston, Sept. 28.—Five cars sold. Oranges unchanged. Lemons doing better. Valencias \$3.50 to \$4.30; lemons \$4.25 to \$4.80.

Philadelphia, Sept. 28.—Three cars sold. Oranges lower. Valencias \$3.20 to \$4.00.
New York, Oct. 2.—Sold 17 cars Valencias, 2 cars lemons, car of grapefruit and 1 car mixed. Oranges doing better, especially on small sizes. Lemons higher. Weather fair. Valencias \$2.55 to \$6.00. Grapefruit \$1.80 to \$2.15. Lemons \$2.80 to \$4.30.

Special Livestock Market Report.

San Francisco, Oct. 4.

CATTLE in Nevada and Northern California are about 80 per cent feeders this year, only 20 per cent being ready to turn in for beef, on account of poor grass conditions. This large number of feeders will be fat in 60 to 90 days. Generally about 60 per cent of Nevada cattle are good for beef at roundup time.

HOGS in the east have been dropping 10 to 30 cents per day from their recent high price. This marks down the local price slightly, because the East takes our surplus cuts.

LAMBS and sheep are coming to the Western Meat Co. from their feed yards at Galt, except for a shipment of 1200 from the Klamath Lake region. Wethers dropped slightly this week.

WOOL remains the same, no signs of lifting the embargo on Australian pelts or wool.

Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.]

Steers, No. 1	.....6 3/4 @ 7 c
No. 2	.....6 1/4 @ 6 1/2 c
Cows and Heifers	.....5 1/2 @ 6 c
No. 2	.....5 @ 5 1/2 c
Bulls and Stags	.....4 @ 4 1/2 c
Calves, light	.....8 @ 8 1/2 c
Medium	.....7 @ 7 1/2 c
Heavy	.....6 @ 6 1/2 c
Hogs, grain-fed:	
100 to 150 lbs.	.....7 1/2 c
150 to 250 lbs.	.....8 3/4 c
250 to 325 lbs.	.....8 1/2 c
Prime Wethers	.....6 3/4 @ 7 c
Spring Lambs, f. o. b.	
country points	.....\$5.25 @ 5.75

North Portland, Ore., Oct. 2, 1916.

CATTLE.—Cattle supplies for Monday were rather liberal, over 1600 head were received. The market was steady in most cases. Steers sold at \$7.00 for tops and cows at \$5.50. Feeder demand was excellent, buyers from Oregon, Idaho, Washington and Montana being here in numbers. Butcher stock went steady at last week's prices.

HOGS.—Hog receipts were again light, only 1600 being in sight for the early trading Monday. Prices were steady to weaker. Ten-ten was the top sale with bulk around \$9.00. Demand was fair.

SHEEP.—Sheep prices were strong in all lines and lambs showed an advance to \$8.75. Receipts were not heavy.

Los Angeles, Oct. 3, 1916.

CATTLE.—There was no especial life to this market the past week. The offerings were not heavy and killers took good steers coming in at steady prices. Fat cows also met with fair demand. California and Nevada furnished most of the supply and were fair grass cattle for this time of year. Quotations are f. o. b. Los Angeles:

Beef steers, prime, 1000 to 1100 lbs.	.....\$7.00@7.75
Stockers and feeders	.....5.50@6.00
Prime cows and heifers	.....6.25@6.50
Good cows and heifers	.....6.00@6.25
SHEEP.—No change to note in this market since last week. Heavy sheep continue scarce and in good demand. Yearlings and lambs are being had in fair numbers from Arizona and Utah and selling in a fair way at quotations. We quote per head f. o. b. Los Angeles:	
Prime wethers	.....\$7.00@7.25
Prime ewes	.....6.50@6.75
Yearlings	.....6.50@7.00
Lambs	.....6.50@7.00
CALVES.—Not many coming in and demand good and market firm. Selling at \$8.50@9.50 per cwt.	
HOGS.—A steady and firm market was had the past week at the recent advance. There was no urgent demand, however, as the fresh meat trade is quick. California gave most of the supply and some very good hogs. Idaho hogs are still being drawn east by the high markets there. Heavy, averaging 250@300 lbs.	
	.....\$8.50@9.00
Mixed, 200@250	.....9.00@9.25
Light, 175@200	.....9.00@9.25
Roughdocked 20 lbs., piggy sows 40 lbs. and stags 800 lbs.	

"	24....25.41	28.20	25.50	28.00
"	31....25.80	28.50	25.80	28.00
August 7	....30.50	31.00	28.00	29.16
"	14....31.16	33.08	28.66	31.00
"	21....31.25	33.09	30.16	31.83
"	28....30.58	33.50	29.16	32.03
Sept. 4	....30.08	36.12	30.16	32.00
"	11....34.33	37.90	31.66	36.00
"	18....37.98	38.83	33.37	37.00
"	25....38.66	39.75	34.66	38.66
Oct. 2	....40.08	39.75	37.33	40.50

Publisher's Department.

To several hundred of our subscribers—just a few words: We don't like to write "dunning" articles in this department, and won't, but we wish to explain our position, which we believe will be all that is necessary. The large part of our subscription list is in a very satisfactory paid-in-advance condition, but a comparatively few are nearly a year in arrears and from these we must collect or remove from our list. The postal authorities say that we can not extend credit on subscriptions over one year, the Audit Bureau of Circulations says it will not count a name on our list over one year in arrears and lastly the price of paper is so high that we can not afford to send the Rural Press to anyone who is not a paying subscriber. Before January 1st next every name on our list who is delinquent will be cut off—we want very much to send your paper to you the coming year. Send us your dollar as quickly as you sell your crop.

"The Sept. 23d edition of the Rural Press failed to come. Will you kindly send a copy. I would like it particularly to get the first article on 'Live Stock Facts and Fancies.' No. II alone was worth a year's subscription, in encouragement. Hoping that you will be spared to write another 46 years for the P. R. P. and that I shall be in the ring to read and act, is the sincere wish of—Geo. F. Warren."

From the comments we have received upon the series of live stock articles he is writing, Prof. Wickson has struck a popular chord, or in stock parlance, a "bull's eye."

Fruit growers who can should attend the annual meeting of the California Nurserymen's Association, to be held at Santa Barbara, Oct. 26 to 28, inclusive.

Two hundred and twenty-six new subscribers were added to our list the past week.

If the Rural Press is a little late this week in reaching our subscribers, lay it to the lateness of the arrival of the white paper from the mill. Not only are Coast papers hard pressed to secure stock, but the East is likewise short. Here is a paragraph taken from a letter written by a farm paper publisher in Wisconsin: "The paper manufacturers are not anxious to make new contracts. All sorts of paper is up from 50 to 100 per cent, with sometimes none in the market."

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WEEKLY BUTTER AVERAGES.				
Cents per pound for Extras.				
Week Ending	San Francisco	Los Angeles	San Francisco	Los Angeles
Jan. 2	28.60	28.00	28.80	28.80
" 9	25.33	26.65	26.00	28.16
" 16	27.50	27.83	26.83	28.10
" 23	30.66	28.25	30.66	28.50
" 30	28.66	36.33	28.00	36.66
Feb. 6	26.88	30.25	26.80	32.33
" 13	26.74	31.40	27.00	33.25
" 20	29.00	32.00	27.16	32.00
" 27	29.10	30.90	27.00	35.25
March 6	27.00	24.08	25.25	24.16
" 13	24.66	29.91	24.00	28.83
" 20	23.00	28.33	22.50	27.16
" 27	22.91	28.50	23.00	28.08
Apr. 3	23.00	28.50	22.23	28.83
" 10	23.08	29.31	32.00	28.00
" 17	23.00	27.33	22.00	27.50
" 24	23.00	25.25	22.00	25.00
May 1	23.08	24.33	22.00	25.33
" 8	23.00	24.10	23.08	25.00
" 15	23.16	24.58	23.00	25.66
" 22	23.75	25.00	23.25	25.00
" 29	23.08	26.50	23.00	26.50
June 5	23.90	25.50	23.00	27.00
" 12	24.08	25.83	23.83	27.00
" 19	25.16	24.50	26.00	25.91
" 26	25.50	24.50	26.16	25.91
July 3	25.83	24.60	26.16	26.00
" 10	26.21	26.40	26.00	26.60
" 17	26.58	25.83	26.00	26.00
" 24	25.41	26.00	25.50	26.00
" 31	27.00	26.00	26.00	25.91
August 7	27.00	26.16	26.00	26.00
" 14	27.00	26.50	26.00	26.00
" 21	27.50	26.50	26.00	27.95
" 28	28.00	27.25	26.00	28.50
Sept. 4	28.00	30.00	26.00	30.50
" 11	28.00	30.20	26.00	32.00
" 18	27.00	30.41	26.00	31.09
" 25	26.50	30.41	26.00	30.50
Oct. 2	25.91	31.66	26.00	32.16

WEEKLY EGG AVERAGES.				
Cents per dozen for Extras.				
Week Ending	San Francisco	Los Angeles	San Francisco	Los Angeles
Jan. 2	38.50	35.60	42.00	35.00
" 9	32.66	31.41	35.16	32.00
" 16	31.00	30.33	30.33	30.75
" 23	30.50	34.83	30.00	34.33
" 30	28.16	36.33	26.66	36.66
Feb. 6	23.33	35.66	23.75	35.50
" 13	23.00	28.90	25.10	28.00
" 20	23.60	23.66	23.58	20.33
" 27	21.40	20.30	20.80	18.50
March 6	20.50	18.33	19.00	18.00
" 13	20.66	19.50	19.00	18.91
" 20	21.00	20.00	19.66	19.08
" 27	20.83	21.41	18.50	20.83
Apr. 3	21.75	21.00	21.00	21.00
" 10	22.00	22.00	22.00	21.00
" 17	22.00	21.16	23.08	20.91
" 24	21.80	21.83	22.25	22.58
May 1	26.16	21.00	22.00	22.58
" 8	23.33	21.20	22.00	21.41
" 15	23.58	24.58	22.00	20.83
" 22	23.58	25.46	21.91	22.50
" 29	23.50	25.33	21.83	22.50
June 5	22.50	25.00	20.70	24.51
" 12	22.00	25.00	21.00	24.16
" 19	22.00	24.83	20.00	23.75
" 26	23.33	24.66	23.83	24.58
July 3	23.83	24.60	22.50	24.00
" 10	25.50	26.30	25.00	24.00
" 17	24.83	27.16	24.66	27.00

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- ❑ Comfort—conveniences.
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THE PACIFIC RURAL PRESS

SAN FRANCISCO

OCTOBER 14, 1916.

LOS ANGELES

Fitting Potatoes to Raw Land.

Healthier potatoes and more that are marketable per acre, are much needed in California. Pacific Rural Press hopes to encourage this, not only by printing such cultural experiences as Mr. Peters', but also by noting the success of those who grow seed potatoes certified under the State law.

[Written for Pacific Rural Press.]



POTATO with George Peters, of Kern county, is a good deal like a trick horse—you can teach it to do all kinds of stunts if you study its disposition. But with potatoes, as with the horse, you can spoil a lot of good work by some foolish misstep.

Few potato growers have had to watch each step closer than Mr. Peters; for he has had to pioneer the way on raw land in a country where potato culture on a commercial scale was uncommon. Even now with four years' experience, problems continue to present themselves in which no one has had experience, thus necessitating slow and careful experimenting.

The high, dry, sandy loam soil on which the Peters farm is situated presented a mass of seemingly insurmountable obstacles. Its agricultural possibilities were unknown, because it had been uncultivated. Experience since has shown that its chief requirement is water; and this is furnished in abundance by electrically driven pumps.

Soil and moisture are without question fundamental in potato raising; but so also are seed and culture; and in this case both of the latter have had to be fitted to the soil and moisture conditions.

Good Crops Always.—To simply grow a fair crop, or for that matter a large crop, this year is not a constructive way to grow potatoes in Mr. Peters' mind. The more important consideration is, how to grow a larger crop next year?

The answer to the last question is crop rotation and seed selection. And particular emphasis is placed on seed selection, for not only should each succeeding year's crop be bigger, but it should also contain a smaller percentage of unmarketable potatoes.

American Wonder is the variety grown as best suited to Kern county conditions; and the object from the beginning has been to grow a uniform type rather than an extremely large one.

Perfect Seed.—A potato to score perfection on this ranch should be smooth, shallow-eyed, of good average size and square sides and ends; also it must come from a hill which has yielded five or more good-sized tubers of proper shape.

The process of securing such seed is slow, and especially is this true in the early stages of tuber improvement, on account of the relatively small percentage of hills in a field that yield the required quantity and quality of seed.

The selection naturally commences in the field at digging time. Here the potatoes that are true to type and from vines that have yielded the required amount, are put into separate sacks. With the fall-grown crop, this digging is sometimes done as late as January; for the tubers im-

prove in brittleness when left in the ground.

Rests Seed.—Early in March this seed is put into cold storage to keep it from undue rotting or sprouting; also because experience has shown that giving seed a rest is beneficial. March-stored seed is taken out in August for fall planting.

In this manner seed harvested in fall or winter is never used for the following spring planting, neither is spring grown seed ever used for following fall planting.

What the actual results have been from this system of seed selection and storing is shown by a field entirely planted with such seed last year. From a total yield of 600 sacks but 20 were of unmarketable size. Not only in quality but in quantity has the result been apparent, the yield

from a field where 160 sacks of purchased seed was planted producing on the average 90 sacks of marketable tubers, while a field directly adjacent, planted with home selected seed, produced 150 marketable sacks to the acre.

There is still the opportunity for closer selection and that is what will be done. Then, instead of field selection alone being done, another selection will be made before storing. This time the field selected tubers will be carefully graded at the packing shed and only the best selected for seed.

Small Seed.—All of this leads one to ask, are small potatoes never planted? In the past they have been and where the grower knows their history it seems perfectly practicable to use them, provided they were grown from good seed.

This is on the theory that a small potato grown from good seed and out of a hill containing five or more properly shaped tubers, is inferior because of lack of moisture or some other physical condition of the soil and not because of inferior parentage. Thus it has been found that the first crop from the small seed is usually satisfactory, but the continued planting of the small seed would gradually run both the yield and the percentage of marketable potatoes down.

Rotation Benefits.—So much for the seed and its selection. Culturally speaking, the work on this ranch is almost continuous, for as before stated there are two crops a year to prepare, care for and market.

Just here it is pertinent to record that potatoes are never grown longer than one year on the same soil. This is essential in order to safeguard against disease and maintain uniform yield. Barley and oats have been the rotation crops used after spuds, barley the first year and oats the second. A

bean crop of some kind would be better the second year because it leaves the ground in finer tilth and fertility for potato planting.

The best crop of spring potatoes that has ever been harvested on the ranch followed a planting of rye in August, which was plowed under in December and then disked lengthwise and crosswise of the field and allowed to stand till February.

Spring Crop.—The spring crop has always been planted as near February 10 as possible, after thorough plowing and harrowing of the soil; but in the future earlier planting will be practiced, as frost danger does not seem to be a factor in this location.

(Continued on page 402.)



American Wonder Potatoes Grown by H. A. Hyde near Watsonville, Certified under State Inspection.

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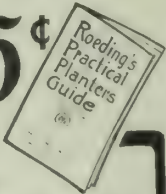
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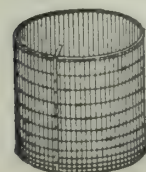
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Carson Valley a Land of Plenty

[Written for Pacific Rural Press by Bert S. Wolf.]

Beautiful and rich is Carson Valley, Nevada. Beautiful because it is rich in grain and hay; rich because it has the soil, and above all, because it is full of the most progressive and energetic farmers.

Sixty-five years ago Mormon settlers camped in Carson Valley; and the first house built in Nevada was in this Valley at Genoa, which was the first territorial capital of the State, then belonging to the territory of Utah. Land was soon appropriated around the river and foothills, as it abounded with natural grasses for hay and afforded feed for stock. In those days irrigation was unknown; but in 1858 H. H. Springmeyer demonstrated that where sage brush then stood, good crops could be grown, if water was used. After 1860, irrigation was started from small mountain streams and from the east fork of the Carson river. At this time this was mostly used for garden patches. The original water rights are still being held by the children of the early settlers and some of the pioneers are still living. Some years ago a reservoir was built in the mountain. This, however, only supplies a portion of the valley, which is over 20 miles long and more than six miles wide.

This year you will find crops of

grain and alfalfa that makes one long to own some of this land. Alfalfa hay, wheat, and barley are the principal crops. Lots of cattle and hogs are owned by these farmers, and a great deal of dairying is done. The valley is being populated fast and is probably the richest community in the State. Almost every farmer has his automobile and some of the early settlers that started with almost nothing are wealthy men today. Very few farmers own less than 140 acres and from that on up to thousands of acres. Carson Valley has two flour mills, one of these is owned by the farmers themselves. These mills take all the select wheat grown in this valley. Until eight years ago, no railroad came within 18 miles of this valley, and farmers were compelled to haul to Carson City, but that is a thing of the past. Gardnerville is the principal town in this valley, with Minden the county seat one mile distant. There are still thousands of acres undeveloped in Carson Valley, thriving with sagebrush. There has been talk for some time of the government building a large reservoir in the Alpine range and farmers of this valley are looking forward to a wonderful development if this project goes through. It is to be hoped that they will not have to wait long.

Fitting Potatoes to Raw Land.

(Continued from first page.)

Deep planting is the rule, both in spring and fall, seven to eight inches being the preferred distance. This overcomes the tuber moth and keeps the seed in moist soil while sprouting. As a further protection against tuber moth all vines are raked and burned directly after digging and the ground again gone over for possible tubers that the diggers have left buried.

Before planting the seed is immersed in a solution of corrosive sublimate, four ounces to 35 gallons of water, for an hour and a half as a protection against scab and Rhizoctonia, a fungus which would otherwise do great damage to the market qualifications of the main crop.

Irrigation of the spring-planted crop is not necessary till April 1, after which time they are usually irrigated three times before digging, which comes between June 1 and 15.

Fall Crop. — After thoroughly cleaning the field of vines and other debris from the spring crop, the land is irrigated, plowed, and harrowed, and again irrigated just before the fall planting is done August 1. Planting this time follows directly after the seed is cut, otherwise it quickly dries and does not sprout so readily. In cutting both the fall and spring-sown seed, the pieces are cut down to two eyes.

The late crop is not irrigated till the plants are above ground, but after that they are irrigated regularly whenever moisture conditions seem to warrant. On the average four irrigations are given before the tubers are fully matured, a large enough stream being used in each

instance to rush the water through the rows quickly.

Always the spring crop has been the larger of the two, a fair average of the early crop being 125 sacks, while the later one is usually a third less. Not a large crop, compared with those grown in districts with more favorable soil and moisture conditions, it is true, but the most profitable yield that has so far been raised in Kern county.

MANURE OR COMMERCIAL FERTILIZER?

To the Editor: I have a chance to buy some manure. How much is it worth as compared with commercial fertilizers?—W. E. B., Morganhill.

In addition to its fertilizer elements, manure is of value to add humus to all soils where there is water enough to allow it to decay; and to loosen heavy soils with its fiber. The Ohio Experiment Station reports tests which show that, at prices of fertilizers before the European war, \$2 worth of nitrate of soda, superphosphate, and muriate of potash, mixed in such proportions as to contain less ammonia and potash and more of phosphoric acid than are found in manure, would produce considerably better effect than a ton of manure. This depends largely on deficiencies of the particular soil and needs of particular crops. Barnyard manure averages approximately 10 pounds each of ammonia and potash, and 5 or 6 pounds of phosphoric acid per ton.

Practically all the beans in the Goleta valley are cut.

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Growing Limas in Ventura County.

[Written for Pacific Rural Press.]

To Californians, Ventura county and lima beans are synonyms. Not because all of Ventura county is a riotous patch of bean vines but because no other one county in the State grows them in such quantities, both in acreage and in yield per acre.

Nor is this yield and acreage liable to be reduced by future bean culture if the experience of Edmund W. Geary, a pioneer grower and the authority for the statements in this article, is any criterion.

The Geary farm of 60 acres has been continuously cropped to limas for 32 years, first by Mr. Geary's father and in later years by himself, and during that time the yield has almost doubled, largely due, he thinks, to improved methods of cultivation, but at least showing no damage from overcropping as would grain or other summer grown crops.

As is so often the case in recording farm operations, one is compelled to begin the story of Mr. Geary's bean crop at harvesting time in the fall. Not because of seed selection, although that is practiced to some extent by setting aside the beans from those patches in the field which have yielded best, as they come from the threshing machine, but because of the value of dry plowing the land as soon as possible after threshing is completed.

Tractors Help.—Until the advent of the tractor, fall plowing of bean land was by no means general owing to the comparatively short time between harvesting and early rains. Horse power could not successfully cope with the race against time, but the tractor with its steady plodding solves the problem if intelligently managed.

This to Mr. Geary's mind is one of the most important improvements that has developed in bean growing in recent years, as it allows the land to lie in fallow during the entire winter and makes seed bed preparation in the spring less of a problem. Anything that tends to improve the physical condition of the soil at planting time is a big step forward.

Garden seed condition is Mr. Geary's manner of describing the ideal seed bed for spring planting which is done between April 1 and June 1, according to seasonal and soil conditions, but generally nearer May 1 than either of the other dates.

If the land has been dry plowed spring plowing is not necessary, but thorough working with clod masher, cyclone, chisel and spring-toothed harrow and crosskill cultivators is done. The clod masher is almost continuously used on adobe soils, directly behind each tool, in order to retard moisture evaporation.

Bag selection of seed is generally practiced, but field selection would be an improvement and will come in the future. The object in picking seed is not to select the largest beans but the most perfect. Seed grown on irrigated land is not so desirable as that grown on dry land, and it is generally considered good practice to buy seed grown in other districts once in a while.

Planting is done with a special bean planter that plants four rows at a time. The seed should be planted

in at least an inch of moist soil, four or five inches being the preferred depth.

Unless spring showers come before the plants are above the ground cultivation is not started till the plants form a well-defined row. If showers do occur the field is run over with a harrow.

The cultivators are made especially for bean work, running through two rows at a time. Unless he irrigates during the growing season, Mr. Geary only has to cultivate once, but on land infested with morning glory the cultivators are kept continuously at work as long as the vine growth will permit. Hoeing is also necessary in order to kill the weeds missed by the cultivator. As an indication of the difference in cost of culture per acre on morning glory land and on that which is clean, Mr. Geary has found that seed, cultivation and harvesting on his ranch averages \$25 an acre, while a friend who farms adobe infested with morning glory, averages \$40 an acre for the same work.

Irrigation in seasons of short rainfall is the rule with Mr. Geary, water in his case being supplied from a pumping plant, but often from artesian wells and gravity systems in other districts.

June 15 to July 15 is the usual time for applying water on this ranch, furrows carrying the water between the rows, often as long as 24 hours in order that the ground may be well saturated. On this matter of thorough irrigation Mr. Geary attaches much importance, for it is his observation that without thorough soaking of the soil at this time, the vines suffer from lack of moisture before maturity of the beans. To accomplish this the water is not run in every furrow at the same time but instead in every other row.

In harvesting the vines are cut when the beans have reached a marketable size, rather than when completely ripe. This safeguards excessive shelling out before harvesting time.

Vine cutting is done with a special bean-cutting sled, having knives attached which cut the vine underground. These knives are run on the cultivator pan, which has previously formed, when possible, as the vines are cut much more effectively in such cases than when they run through soft dirt. On this account several horses are usually used on the vine cutter.

These cutters pile the vines in windrows from which they are later hand stacked into shocks and allowed to cure from 10 days to three weeks, according to the weather. Further away from the coast they are ready to thresh before that time as the weather is warmer.

The last operation on the Geary ranch with the harvested crop is the distributing of the threshed bean straw over the land before dry plowing. Two dollars a ton in the stack can be secured for this, to be used as livestock feed, but Mr. Geary has always considered it worth more than that to his soil, especially when it can be plowed under in the fall and rotted by the winter rains.

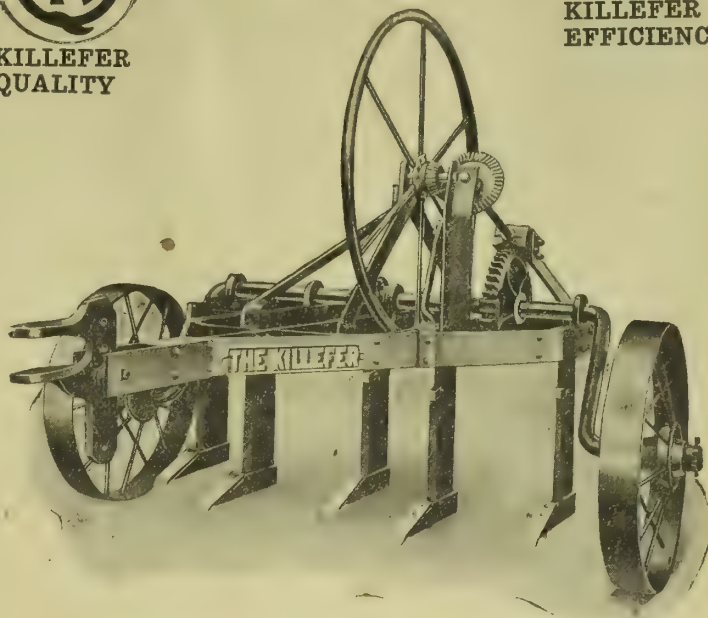
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EDITORIALS

WEATHER WONDERS.

LAST week we told how Lloyds lost \$25,000 in weather-insurance by a storm which caromed down from the north, unbeknownst to the observers. This week they could have lost it again by another storm which ricocheted up from the south against all rational expectation. The last word of wisdom in both these, and all other similar phenomena, must be that you cannot almost always tell. There have been considerable losses, by injuries to ungathered fall products, which call for sincere sympathy from those who had not anything to lose, and must be bravely met by the losers with the hopeful outcry: "We will strike it better next time." There may be a few who should chide themselves with the reflection that they might have hastened more to get their perishables under cover, but, as a rule, such losses could neither have been foreseen nor averted and must be charged to "farmer's luck"—a form of adversity which has had much to do with keeping our food producers from becoming too soft in their heads and hearts. A man who is beaten by his luck generally brings up in the penitentiary or the lunatic asylum, or becomes errand-boy for his wife's superior energy and industry. But, really, this autumn's embarkation in the weather business is a wonder—the south coast soaking wet when it is normally dry; the north coast but showery when it is normally soaked; the interior valley, both north and south, wet when there should be but slight breaks in continuous sunshine. It looks as though the coming year would be great and in which the exhortation to the California farmer should be: "Trust in God and keep your powder dry."

PROPHETS TRY TO HELP.

OUR brilliant contemporaries, the San Francisco dailies, have been keeping their "special leased wires" to the cabins of the weather-prophets very busy since the insurance men shook them into consciousness that there was something doing this fall in weather-wisdom. So far as we have noticed, they have had no reports from the weather-prophets of the longest renown—the omniscient wood-chuck and the sky-piercing wild goose. These time-honored seers have signified as little of coming weather as the diplomatic soothsayers have, recently, of the end of the war. And the wisdom of those half-baked prophets who do consent to instruct the public seems to consist in "knowing many things that aren't so." We have no time to follow all of them in their interesting speculations, but one of them invites attention by a colossal mistake he has made in mapping out the route along which he trudges to prophecy. No real prophet ever makes such a blunder as that. The old oracular boys at Delphi had more prophecies come true than any other bunch of futurists ever did, and they never entrapped themselves by telling how they did it. Even for twenty-five hundred years they have kept us guessing and that is the acme of prophecy. It is otherwise with Rehart I, "who for many years has prognosticated in the Chronicle the weather conditions facing the State." And Rehart gives

our neighbor this prophecy and the way of it:

"For the past forty-two years cold summers have been followed by more or less dry seasons, and for the same period of years, long, hot summers have been followed by seasons of more than normal precipitation. The last year the Pacific Coast has experienced an exceptionally cool spring, which extended to the month of July, indicating the following forecast:

"An exceptionally dry fall, extending to the month of January, followed by three short periods of normal precipitation in January, February and March, with a total precipitation of 75 per cent of normal."

BUT DO NOT HELP MUCH.

NOW Rehart may be a great cosmic prophet, for all we know, but to apply cosmic formulas to California always has been misleading, because California is different. For example, Rehart's doctrine seems to be that there will be an alternation of extremes; that if you have a cool summer you will have a warm winter; that if you have a sore toe it will be followed by a headache; that if you have a pain in the back it will be followed by an ache in the tummy—providing you are thick enough to differentiate the locations. This idea is, of course, a variation of the old idea of the "dualism in nature," which was probably written on the Assyrian tablets. Ever since then at least it has permeated the thinking of mankind in all relations of life. Good follows evil; light follows darkness; if your wife is beautiful she is likely to be bad; if she is homely she will probably be good; if it is cool in the summer it will be warm in the winter, and all that.

Now, as we have acknowledged, this may be a good cosmic theory, and may balance up all things natural and spiritual. We do not quarrel with it because we cannot claim to know anything in the cosmic connection. But even if perfectly true, in the way Rehart uses it for the world at large, it still does not fit California, and therefore, for us, is not edifying but misleading and deceptive. He prophesies for us that, as we have had a cool summer, we shall have a warm winter, but he evidently does not know that when we have a warm winter it is wet; that when we have our hardest freezing, with injuries to citrus trees, it is dry; that when the rains fall the temperature rises and frost danger, for the time being, is over; that the ideal California winter is one of warmth, with rains at short intervals and growing conditions all winter. Therefore, we claim that Rehart makes, from the point of view of his prophetic soul, a sad blunder, when he tells how he prophesies. If he had simply proclaimed his forecast we could only have dissented and doubted. As he tells his reason, based upon the old law of opposites, and says we shall have a warm winter and a dry one, we protest the fact that our warm winters are wet—therefore, we shall have what we most desire."

SAUL JOINS THE PROPHETS.

BUT while we are complimenting the terrestrial prophets, like the wood chuck, the wild goose and Rehart, we are not doing the fair thing this year by that other bunch of prophets, the sun-spotters. We are sorry for them; they are not in it; the clouds have been so thick and continuous that they could not get a squint at the mottled orb of day. They may come later when they are nearer to the event; it is safer to prophesy when you can see what is coming. And that is the reason why we are inclined to take a prophetic hand and play the game as we see it. If we can remember correctly all the monkeying we formerly did with rainfall records, they told that the seasons of greatest rainfall began early in the autumn, with just such moist, clinging storms as we have had during the last two weeks, and rains kept coming each month all through the winter. Such was the winter of 1889-90, and there have been many others. We remember that year best because we began building a house in September with particular specifications for a water-tight cellar of concrete. We got it all right; the water could not get out of it; it rained in and ran in from the surrounding country until it became plumb full, and we had to hire a fire company from the village to pump it out, so we could punch a hole in the bottom for drainage. And it rained on that house all winter until the floors bulged and the plaster sloughed off, and we learned that if rains begin in a businesslike way

early in the fall, it is the first step toward a season of most generous rainfall. But Rehart says we are to have an exceptionally dry fall and a season's rainfall of a quarter less than normal—and Rehart is an honorable man!

DEATH OF DR. A. J. COOK.

IT WAS a great disappointment to all Californians who knew him to be encouraged by reports, a few weeks ago, that Dr. Cook was mending, and would soon return to his place in this State, and then to hear of his death in Michigan on September 29. Dr. Cook had been a brave sufferer for several months, and before that was carrying the shadow about with him while still cheery and active in his accustomed work. He was brave, diligent, and devoted to his work, which, ever since he came to California in 1893, has been under the public eye, as it was previously at the East. He was born in Michigan in 1842, graduated from the Michigan Agricultural College in 1862, studied at Harvard in 1867-8, and the following year began his instructional work at the Michigan Agricultural College, and continued until he was called to Pomona College in this State in 1893. Coming to California was, however, in a way, a home-coming, for he had lived for a time, in the latter '60's, near Sacramento, where his sister, the late Mrs. Gammon, was a pioneer resident. Dr. Cook did notable work in entomology and bee-keeping in Michigan, where in 1877 he first made the type of kerosene emulsion which bears his name, and in 1880 was first to demonstrate the efficiency and safety of arsenites in fighting the codlin moth. Aside from his successful work at Pomona college, which did much to popularize that institution during the latter '90's, he was very active in farmers' institutes, farmers' clubs, etc., and was very forceful in promoting the organizations of citrus growers, which have proved so efficient and influential. Such useful educational and promotive work was continued for a decade later, and was finally recognized by his appointment as State Horticultural Commissioner of California in 1911. After that date he gave his time fully to that office, and resided in Sacramento until he went East, seeking relief from his physical infirmity, near the close of 1915. His resignation from his State office, submitted at that date, was not accepted by the governor, and he "died in the harness" as a fitting reward for a long life of exceptionally useful and distinguished public service.

APPOINTMENT OF MR. HECKE.

IT HAS long been expected that George H. Hecke of Woodland would be appointed State Horticultural Commissioner when a vacancy should occur, and Governor Johnson realized that popular belief by placing Mr. Hecke in charge of the executive horticulture of the State at the close of last week. We are pleased with the appointment, not only for what Mr. Hecke is, but for what we believe he is minded to do for the reorganization and rationalization of the executive horticulture of the State. As for what he is, any one can tell who sees him, for he is one of the most open-faced and open-hearted fruit-growers of California. To the very few in fruit-growing circles who may not have seen and known him, we are willing to say that we have been looking at him for quite a long time. It is probably nearly three decades since we first saw him at fruit-growers' conventions—a young man, cordial and companionable, but alert and serious always; with a brightness in his eye which would not dull and a smile on his cheek which could not be rubbed off, but always thinking and looking, lest any half-fact or light-weight idea should elude his scrutiny. Of course, such a youth must become a man of parts; of course he did practical things for himself, which succeeded because carefully thought out and energetically pursued; of course he did things for the community because his horizon lies far beyond his own personal interests. He knows fruit-growers' problems because he has met and successfully answered them in his own experience. And it is such attitudes of mind and such teachings of experience which he brings to the problems of his fellow fruit-growers as they now constitute a fundamental phase of California's greatest industry. His practical achievements in

this State rested upon thorough training in academic horticulture abroad and have been attended for many years with public service as county horticultural commissioner, and for some time, as county farm adviser. He therefore has many many points of view, and is rich in correlated experiences. His genuineness of sympathy and understanding are unquestioned. Why should he, having done so much, assume a public task the legal compensation for which he needs not at all? We answer it for ourselves in this way; he still feels the force of youth, though it now carries the wisdom of middle life; he is loyal to the State and wishes to serve it in recognition of the opportunity it has given him; he loves his fellow Californians and longs to advance the industry which he shares with them. Mr. Hecke's assumption of the office appeals to us as an obedience to a prompting to patriotic service which is quite characteristic of him.

WHAT CAN MR. HECKE DO?

Mr. HECKE can do just what we believe he is already intending to do, and therefore, what we say can have no aspect of offensive instructions. Let him make his department of the State government exactly what it ought to be—an executive branch charged with the enforcement of laws and policies for the protection and promotion of the horticultural industries in a straightforward and businesslike way. Let him organize the inspection and quarantine service so that there shall be reasonableness, uniformity, and certainty in it, which all in the State and out of it can clearly understand. Let him seek legislation which will bring to his department all the police duty which

is required in the promotion of industries with horticultural affiliations. Some of this is now associated with academic functions in the University, in a way they should not be, and let him cut from his schedule academic functions which the University should discharge. Let him strive to build up the county horticultural service so that county commissioners shall render more and better service in the executive work of the State department and arrange their work, in pest inspection and quarantine, statistical and fruit inspection, in co-operation with the State Market Commissioner, so that their year shall be full, their compensation adequate and their position self-respecting, and influential. Let him reconstitute those unique California assemblies, the State Fruit Growers' Conventions, so that there shall be a return to their original type—a forum for the conference of fruit growers on matters which belong to executive horticultural work in production, protection, promotion, commerce, transportation, etc., and not imitate the extension exercises of the University. Probably not less than half the time of a fruit-growers' convention should be devoted to reports of standing committees of growers charged with investigation of practical problems and discussion of such reports.

We are not claiming that this is all that should be done. We have only cited a few instances of the kind of things that should be done. Fortunately, a large and acute committee is now at work on this very subject, and will report at the Napa convention next month on the duties and relations of the State executive work for fruit growing. The outlook is hopeful.

are trimmed up high.—E. W., San Francisco.
If the trees are high-trimmed enough to give the ground a good deal of light, with good touches of sunshine at times during the day, we should sow Kentucky blue grass and white clover because nothing else fills up so well into a close turf if well watered and manured. If you wish to give less water and care, Australian rye grass and white clover will give you a fair cover. If the light is less, sow orchard grass and white clover. In either case dig in deeply not less than four inches thickness of good stable manure and sow as soon as you can get the ground into good condition so as to start the plants before the ground gets full of cold water. Afterwards you must use water and manure freely enough so that the tree roots and grass roots need not try to rob each other.

Lime Plaster and Cement Plaster.

To the Editor: I have lately demolished a house and have an accumulation of lime plaster which was in the inside, and of cement plaster which was on the outside. I have been thinking of having it ground so as to pass rather a fine screen and then distributed over my orchard and plowed under. How does it strike you?—Reader, San Jose.

It would not pay for the hauling and grinding. If you have the two separate, scatter and plow in the lime-plaster just as it is. It will disintegrate by natural agencies and return you lime value. You can use the cement-plaster as the foundation for a garden walk. If they are mixed, you can put them both in the orchard or under the walk as you think best. In the latter disposition they will give you a walk free from weeds for some time, probably.

Rye Grass at Elevations.

To the Editor: You recently commended rye grasses for wet lands. Does your answer to that apply to this part of California? We have land subject to overflow in the winter and early spring while at this time of the year it is very dry and hard. We have zero weather in the winter sometimes for two months. The altitude is about 4000 feet. Do you think those rye grasses will do in this climate and altitude?—W. A. D., Lassen county.

We do not exactly know for we have never seen it tried under exactly those conditions. English rye grass is the one to try as it is hardier than Italian. It succeeds in the Eastern States and other wintry regions. How it will act under your combination of freezing and overflow has to be found out by trial. We would sow at your elevation as the water goes off the land in the spring. The young plant goes through light frost all right.

Rye or Barley for Winter Pasture.

To the Editor: Which would you advise sowing for winter feed—rye or barley? I can irrigate the ground now and want to plant the best for pasture and to produce the most milk.—H. S., Goshen.

Rye is counted generally better: more active during frosts and more busy with too much or too little cold water, stands up better and is all around more hardy. It also has a wider reputation as a milk-feed. Wet down the land and get it in as soon as you can.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., October 10, 1916.

STATIONS	Rainfall Data		Temperature Data		
	Past Week	To Date	Normal	To Date	Max'm Min'm
Eureka .....	.00	1.90	2.16	64	38
Red Bluff	1.53	3.35	1.24	74	44
Sacramento .....	.66	1.00	.65	72	46
San Francisco .....	.36	2.04	.55	70	50
San Jose .....	.70	1.59	.59	70	40
Fresno .....	.76	1.58	.63	68	46
Independence .....	.66	1.01	.49	62	28
San Luis Obispo	1.38	3.72	.69	68	42
Los Angeles	1.42	3.33	.18	68	50
San Diego .....	.42	0.94	.18	70	50

By the Editor QUERIES AND REPLIES

Inquirers Must Give Full Name and Address.

Perpetual Motion with Johnson Grass.

To the Editor: What do you think of Johnson grass for filling a silo? Has it food value enough for milk cows? I have a piece of land with an average stand of salt grass, used for pasturage for perhaps 30 years. I am thinking of breaking it up and planting the roots of Johnson grass in the furrows, say every other one and one or two feet apart. You know it will soon thicken and have a good thick stand. I will cut it as often as it grows, to fill a silo, during the summer. Then, in winter, plow the ground deep and allow hogs to root and cultivate it, and eat all they can get: they won't spoil the stand. This would almost be like harvesting a crop all the year round. The soil is a light sediment with some alkali and I think it would not need irrigating. Kings county will afford plenty of roots for planting, so I would not have to buy them like a few farmers did, some 30 years ago from a man from Texas. Kings county is now looking for this man.—Reader, Lemoore.

Johnson grass is fairly nutritious. Johnson grass hay is shown to be about as good as Timothy hay. It also makes silage which the Louisiana station says is as good as corn or sorghum silage and works best for the silo when cut with a self-binder—for convenience in cutting, probably. It must be cut finely and packed well, as other grasses are for the silo. The question would be whether you can get enough growth on salt grass land to make it worth while. Johnson grass does not like alkali much better than Kings county likes Johnson. The last we heard of the man who introduced Johnson grass to this State he was in State's prison.

New Zealand Flax.

To the Editor: Referring to the article in your issue of September 23 I wish to ask what month of the year do we have to sow the flax and how much to sow to an acre? How much does it pro-

duce to an acre on fairly good ground and could we expect a full crop this year? From what firm could we buy the seed?—A. J., Oakdale.

We apprehended that some misapprehension might arise concerning the character of this plant, though if the article referred to is read carefully the nature of the growth might be understood. It is nothing like flax nor any other seed plant which can be handled like a grain crop and nothing more than the establishment of the plant could be secured the first year. It is now only known in California as an ornamental plant and is to be seen only in parks and gardens and in nurseries where ornamental plants are propagated. When old enough, the plant seeds freely in California but the few plants required now are more easily had by dividing old clumps. Correspondence with nurserymen and seedsmen who advertise in our columns is the best way to find out in what form a start is now available. When plants are secured from seed in a seedbed or nursery row, or by dividing roots, they are to be set out say four feet apart in rows eight feet apart—for each plant makes a large clump of fleshy, sword-shaped leaves, five or six feet long—the clump being several feet in diameter. The leaves can be cut with a strong corn-hook and must probably be handled singly. The plant is a vine of very strong fiber but we do not advise any one to take it up except in a small way to find out how best to grow it and who will pay a profitable price for it when grown.

Lawn under High Pines.

To the Editor: What kind of grass can I sow under yellow pines that will grow the most successfully? The soil is a kind of red clay. What is necessary for treatment of such soil? The trees

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University Fruit Growers Co-operate.

[Written for Pacific Rural Press.]

An earnest young citrus grower near Redlands has been carrying on expensive experiments in pruning, mulching, cover crops, irrigation, etc., about two years. His name is Harry Cook. He hasn't turned out many results yet that can be definitely determined, but has this season begun records of individual tree production.

Many of the trees look as if the right treatment had not been applied—at least not long enough to show profitable results. Some of them are as thrifty and bore as heavy a load of pomelos or oranges as may be desired.

"But I don't know how to experiment, and it's mighty expensive doing it in the dark," he says. "What we need is for the Riverside Citrus Experiment Station to find out here, for this district, the best methods of pruning, cultivation, irrigation, handling cover crops, etc. We have different soil here than at Riverside. We private growers might at least be saved the waste due to unnecessary experiments, and ought to be helped in making records and interpreting results rightly."

"Such men," says Director H. J. Webber of the Citrus Experiment Station at Riverside, "we long to get in touch with, throughout the fruit sections. That is one of the most economical and satisfactory ways to get practical conclusions. We are very glad to consult with growers in all parts who wish to carry out careful experiments, and will co-operate with them in observing and interpreting results."

Prof. Webber notes that certain fundamental problems, such as the real cause of mottle leaf, or the movement of nitrates among or away from the roots where they are needed, if once solved at one place, can be easily controlled under other conditions by use of judgment in

adapting methods. The relation of sap flow, bud formation, etc., to pruning cuts, once determined at Riverside, would be the basis for the different methods of pruning which that knowledge would enable Orange county growers, for instance, to adapt to their moister conditions. The fundamental principles of fertilization, once definitely shown for citrus trees, could be applied, with easily learned variations in method, to walnuts, deciduous trees, etc. So it is with soil management and other fundamental problems.

The deep and long-continued, intricate work of solving these fundamental problems requires the most highly trained men provided with all the laboratory equipment necessary to interpret to the final solution, the results of field experiments.

Such high-grade apparatus cannot be obtainable by small institutions, and such highly trained capable men will not stay long or take such an active interest in their work unless there is a large number of other men there of about their own caliber to spur them on. They want to be connected with an institution of which they can be proud.

Thus, in solving the fundamental problems of a great industry such as fruit growing, it is necessary to have a fairly large institution such as the one at Riverside is becoming.

Co-operative Experiments.—When conclusions have been drawn here, it is necessary to test them out under all the general conditions of the fruit growing sections to determine the "generality of those conclusions."

To do this in the best way, most economical of time and money, the Station determines the general locations of such tests and tries to find a man there who will carry out the plan of an experiment designed "to give the best results and show to best advantage the points to be demonstrated."

There are several such local experiments widely scattered over the citrus sections, designed to prove or disprove for their localities the conclusions drawn from the Riverside fertilizer tests. Prof. R. S. Vaile, however, under whose supervision these are carried on, calls attention to the inability of the Station to comply with the numerous requests of people who wish to follow directions of Station men in managing their orchards and to pay all the expenses. On the other hand, Prof. Webber notes the experiment of one man who applied potash several years to five rows otherwise treated the same as the rest of the orchard, and failed to find any appreciable difference. This corroborated the results already shown with potash at the Station.

"If we could get such an experiment in each locality, the potash question would be settled," says the Director.

The Hillside Orange Association of Lindsay reports a satisfactory sale of a late shipment of Valencia's made early in September. This fruit sold as follows: Fancy, \$5.15 per box; second and third grades, \$4.40 and \$4.35 per box.

2 1/2 tons more to the acre than ordinary alfalfa is the record of Hairy Peruvian Alfalfa

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tested plant that will produce the greatest alfalfa tonnage known—and under all climatic conditions. Has been tried out and endorsed by Arizona State Experiment Station, and by growers in both hot and cold countries.

Supt. of Arizona Station says: "Hairy Peruvian produces heavily in all climates practically the year round. Gives farmer maximum yield from his land. Does equally well at 5000 feet or at sea level. The plant is heavily leaved, thus giving highest food value. We recommend it above all other types." W. B. Cloyd of Yuma says: "Hairy Peruvian is greatest producer. I now get one more cutting per year." David C. Aepli of Yuma says: "Hairy Peruvian outyields other varieties 15% to 20% per acre."

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Sprayed Peaches Blighted.

[Written for Pacific Rural Press.]

We found L. T. McKnight's five-acre orchard of bearing cling peaches in Fresno county disastrously blighted and gumming last spring. He had tried every treatment supposed to prevent blight. The trees were sprayed last November as soon as most of the leaves were off, with Bordeaux 5-6-50. The solution was made by hanging a sack of bluestone in a barrel of water, using no metal tanks. The fresh slaked lime was mixed in while still hot.

The spray dried white, but within two days after spraying, rain came and cloudy wet weather continued three days. A power sprayer was used at 120 to 200 pounds pressure, usually at 160; and a surplus of spray used. The aim was to spray a foot farther out on the limbs than he expected to cut in pruning.

The pruning was done practically all in February and each cut made just above a bud, so that there might be a little sap flow to heal the wound quickly.

Spring Spray.—Then on Mar. 11, he sprayed thoroughly with commercial lime-sulphur 12 to 1, when the blossoms on many of the trees were nearly all out and the most advanced leaves $\frac{1}{2}$ inch long. The trees were dry when sprayed and the weather good.

The blooms did not seem damaged; but when we saw the orchard Mar. 30, one end of it was badly filled with wilted dying twigs on which fruit buds had turned brown with small blackened areas around them. When the buds were pulled off, a gummy substance would come with them, stringing out from the twig until pulled apart. The worst infection was at the end where the trees were weakened by red spider last year. It had spread rapidly in the few days since Mr. McKnight visited the orchard previously. The trouble had appeared noticeably only a week before.

The McDevitt, McKevitt, and Orange clings were worst affected. Phillips and Tuscan seemed immune, though young unsprayed Tuscan in an adjoining orchard had the disease. Unsprayed Muirs and Lovells nearby were also badly affected.

Was the trouble blight, little leaf, Bordeaux too strong, or something else, and how was his procedure defective?

[Comments by Prof. R. E. Smith.]

Replying to the above communication regarding peach blight, I would say that ordinarily this disease is prevented with almost perfect success by spraying in November with Bordeaux mixture. The spraying in spring with lime sulphur is supposed to prevent any late blight infection and also to control curl leaf and peach worm. It is of course impossible to say at this time just how Mr. McKnight's failure came about and I can only make a few surmises upon this point. His lime sulphur spraying was decidedly too late, as this should be applied just as the buds are swelling. I would expect considerable burning from such a late application as that mentioned. The condition of the trees, however, as described sounds like blight and it is also mentioned that unsprayed trees appeared to be

in the same condition.

Regarding the spraying with Bordeaux mixture, it is stated that the lime was mixed with the bluestone while still hot. This is a mistake, as an entirely different combination is likely to result under such conditions and the two ingredients should be cold when mixed.

The only errors in the treatment, therefore, which I can deduct from this description are that the lime was too hot when mixed with the bluestone and the lime sulphur spray was applied too late. If the trouble was not due to either of these faults, I cannot tell what it might have been. Certainly when

properly applied nothing is more effective than these two sprayings for control of peach blight.

University of California.

DEMAND FOR NUT TREES.

[Written for Pacific Rural Press.]

Of three representative nurserymen of Southern California and San Joaquin Valley who were asked what demand has already shown up for next season's planting, one said almonds lead, while a big demand for walnuts is expected. Another said that walnuts were leading with almonds second. The other said that almonds were most generally demanded.

The Munger Vineyard of 80 acres in Barstow Colony was bought by Geo. Snyder of Sanger for \$30,000.

MORNING GLORY IN PRUNE ORCHARD.

To the Editor: I note you advise the use of "Nonpareil" as a morning glory exterminator. I have morning glory in both a three and five year old prune orchard. Do you believe the prune roots of either size trees to be far enough beneath the plow surface to not be injured by the use of such an exterminator?—R. W. S., Calistoga.

[An ounce of the liquid is applied with an oil can to the morning glory root after exposing it two or three inches deep with a short-handled hoe. This quantity at that depth in ordinary soil will not noticeably injure the trees. If the morning glory is thick, it might be well to play safe by treating that under only half of the tree at once.]

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Tell us your plans---write us today

Our many years of experience in planting, pruning, packing, etc., are at your service. Being in very close touch with conditions and knowing what will likely be the most profitable and desirable varieties for you to set out, our advice may be worth a great deal to you. It will cost you nothing to send us your list of what you figure on planting—or tell us your plans and ask us for suggestions. To do so will not obligate you in any way.

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Cows and Productive Grapes.

[Written for Pacific Rural Press.]

Alfalfa, cows, and raisins are bringing H. W. Wilson of Kerman to prosperity. From 3500 three-year Thompson vines, he and his wife picked 2500 trays averaging 25 pounds each. From 15 acres Mr. Wilson cut enough alfalfa to feed their dairy herd, seven of which were milking when raisins were picked.

Starting with limited capital and less experience three or four years ago, the vineyard was set out, an orchard planted, alfalfa sown, buildings put up, and cattle bought. Not all the cows were good producers, and a dozen or so have been discarded, being replaced by better ones. A grade Guernsey now owned produces over 5 gallons per milking when fresh and averages 6 gallons daily for 7 months. Nothing is fed but alfalfa, though better results might be obtained if capital were available to buy a balancing feed. The irrigation ditch running through the vineyard is the only cow pasture. Manure of course is applied to orchard and vineyard.

Last year the whole vineyard produced 32 trays. Then the Wilsons began following the Henry system with results indicated above.

Irrigation was applied when the vines needed it, not early in spring, for that is a cause of coulure. A second irrigation came July 15, flooding by long contour checks. On a certain knoll, not enough water was applied, and the leaves dried up so they crackled. So about Sept. 7, this knoll was irrigated again in spite of prophecies of waterberries. The waterberries didn't come, the

vines recovered, the leaves a week later were juicy and green, and the fruit big, plump, and hard.

To get an early maturing second crop, the end buds of the vines were pinched off as soon as forms of bunches appeared in spring. Mrs. Wilson did most of this; and it made her fingers sore. They were not yet healed when the lateral shoots started which were to bear the second crop. A little later, the whole vineyard was pinched again to get the later-opening buds, and at the same time, all non-producing shoots were thinned off to throw all sap into grapes and fruit canes. The two pinchings, including the thinning out of sterile shoots, took about a week of full working time, though it was done at spare time from the housework.

SPRAYING POINTERS.

An ordinary cyclone nozzle makes a hollow cone of spray so if you aim at a certain part, you don't hit it, but spray all around it.

The best use for a cyclone nozzle is where you keep well away from the object sprayed so the fog will distribute itself.

Scale sprays should be applied with force.

Increase of pressure finally reaches a point where the spray becomes so fine that it loses its speed and force.

To find the pressure at which your nozzle will spray with greatest force, spray against a mild breeze with constantly rising pressure. Have another person observe the front edge of the spray. At its maximum distance, read the pressure gauge and spray at that pressure whenever greatest force is desired.

The amount of spray used does not increase in the same ratio as the pressure, but does vary directly as the size of the nozzle hole is greater or less.

Hand pumped spraying is usually underspraying.

Flour paste improves efficiency of any spray that must adhere, but the spray must not be thickened enough with it to flake when dry. The flour should be boiled in water to a paste rather than mixing dry flour into the spray liquid.

Lime-sulphur is supposed to kill insects mostly by the chemical withdrawal of oxygen from the insects' bodies to combine with the lime-sulphur compound.

Repeated annual sprayings with lime-sulphur or Bordeaux tend to harden the bark of trees so that it cracks. An oil emulsion spray should be used once in a while for this reason.

Soap sprays act by clogging the breathing pores of insects and also by helping spread other spray ingredients.

Many trees have been killed by accumulation of oil sprays around their bases, the oil penetrating the bark.

The new manager for the Fruit Growers' Supply Co., which operates in connection with the California Fruit Growers' Exchange, is A. M. Mortensen, who has been traffic manager for both the Exchange and the Panama-Pacific Exposition.



GIANT
Lifted this one

—Six feet through at base, 4 feet 6 inches through at top, five feet above ground.

Giant Stumping Powder did a clean job, taking out roots and all without tearing a big hole in the ground. Farmers who have used them know that

GIANT FARM POWDERS
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always save them money, time and work. They save money because they lift and heave as well as shatter, and go further than high explosives that merely split the stumps. They save time and work because they get out the stumps—big or little, green or dead, in a condition easy to handle. "I get better results from Giant Powders than from any other powder I have used," says A. E. Adkins, Woodburn, Ore.

There are two Giant Farm Powders, both made especially for Pacific Coast farmers. Eureka Stumping Powder is most economical for dry work and Giant Stumping Powder saves money in stump blasting in wet soil. Try these two. Compare them with the powder you have been using, and you will always use Giant in future. Write us and we will have our nearest distributor supply a trial case at the lowest market price.

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Better ways of removing stumps and boulders, making ditches, planting trees, and breaking up the subsoil are described in our five illustrated books. They were written for western farmers, to meet the conditions that you have. Choose the books that you prefer and mark and mail the coupon today—before you forget it.

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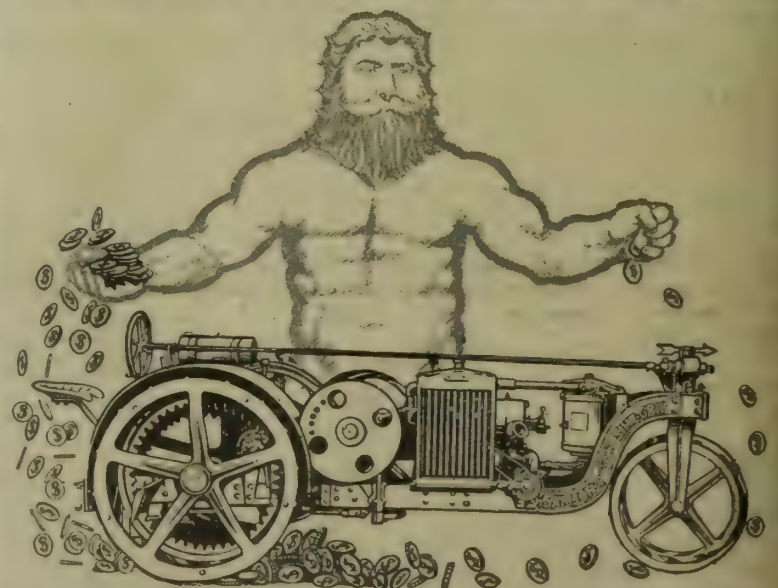
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Pear Blight Winters Over in Cankers.

[Written for Pacific Rural Press.]

Pear blight cankers which live over winter are the sole source of the disease next year. If allowed to remain, they exude infected milky gum next spring. This is carried abroad by myriads of insects, and those visiting blossoms leave the infection to kill the fruit a-borning and spread down the twig or spur. Flies and ants have been proved to carry the disease from gummy spots to other parts and to other trees. Thrips and bees are active spreaders of the germs.

A healthy pear orchard produces good money, but if any blight in it carries over, and the spring weather is favorable for its spread, the attack may be sudden and disastrous, as it has been in unnumbered surprise attacks.

Before the ground is muddy, while blighted leaves still hang, and the healthy bark has perhaps not settled into its winter dormancy, the twigs can be more easily found and cut out, and the cankers more easily distinguished on trunks where the bark is thick. Even so, it will be better to gouge narrow incisions through the bark from crown to the smooth bark above, if there is reason to suspect diseased trunks, for not always is the disease visible. It has girdled large numbers of trees underground with no signs above.

Special study and care with disinfectants is absolutely necessary to avoid spreading pear blight with tools. The disinfectant rapidly deteriorates in metal or even wooden vessels and with rags or sponges to apply it to the tools. Rags and sponges, too, usually do not wet

every point on the tools that may harbor germs, and the disease is thus spread. The time is likely to come when tools will be dipped into the solution which will be carried in glass or earthenware vessels.

Burning of all diseased prunings is necessary; for the germs are likely to live in them all winter and ride jubilantly on some insect's bill to the scene of its next season's destruction.

MELILOTUS LEADS.

[Written for Pacific Rural Press.]

A Sacramento Valley seed company answers our inquiry concerning the demand for different varieties of cover crop seed, in the following way; but suggesting that we should not give the impression that the Sacramento Valley is the source of supply.

"Last year the principal demand for cover-crop seed with us was for Melilotus Indica, although we also sold considerable bur clover and vetch for the same purpose. However, for cover-crops we believe that in this section and all of California south of us where seed is used for this purpose, that the Melilotus Indica will have the demand. It is so very much cheaper for cover-crop, and as it appears to have given such general satisfaction, we believe this seed will very largely supersede all other varieties of legumes.

"We will, no doubt, use a couple of hundred tons of this seed during the fall and while it is not so difficult to procure the seed in the rough, there is a great deal of trouble in dressing it down so that

it will germinate well and make an attractive article."

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Schmeiser Olive Grader

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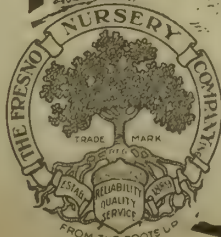
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DAIRY DUE TO PUMPS.

[Written for Pacific Rural Press.]

Nine years ago V. J. Lanini purchased 220 acres in what was considered an arid district of Monterey county, intending to make dairying his chief occupation.

Others scoffed at the idea; but after boring a well 120 feet deep, and securing a good flow of water with a 38-foot lift to the highest part of the land, which was to be seeded to alfalfa, the feasibility of his plan became apparent.

The expense of pumping this water was naturally more than on ranches where gravity water was available; and for that reason, together with the fact that the soil took water freely, all of the ditches were cement lined, thus overcoming all loss by seepage. Now there are 60 acres of good alfalfa on the place and another 60 acres will be planted the coming year; also 75 milking cows are maintained that are producing 220 gallons of four per cent milk a day, the product averaging better than \$1.50 a hundred pounds the year round when sold to the local condensary.

Breedings.—The breeding of his cows is mostly mixed, with Durhams predominating; but a purebred Holstein bull is being used at this time. Two reasons are given for keeping a mixed herd: (1) it increases the per cent of fat in the milk, the buyer preferring a four per cent milk; (2) it makes no inconsiderable difference in the price received for bull calves. These, because of their beef charac-

teristics, are sold to the range men at \$8 or \$9 when born.

Heifer calves are never sold, even in spite of the fact that they are raised on whole milk substitutes. In fact Mr. Lanini raised 40 heifers last year with a very small quantity of milk and never lost a one. His heifers are fully as well developed as one sees anywhere.

Prepared calf meal has solved this question, a handful, mixed with a small amount of whole milk and a larger amount of warm water, having been found most satisfactory. Alfalfa pasture is also provided and coarser roughage, such as straw, has been found good to have stacked in the calf paddocks.

Sanitation.—As the market demands sweet, clean milk on delivery, the chief factor in sanitation is a well-ventilated, concrete-floored milk room, equipped with a coil milk cooler and a two burner oil stove for hot-water heating. The latter is particularly well liked by Mr. Lanini as it is cheaply operated and furnishes plenty of heat for the sterilizing of utensils, without being dirty.

A galvanized iron pipe frame, 5½ feet high furnishes support for the cooler and receiving vat, the milk being poured through the outside wall of the building into a tank whence it is drawn and run over the cooler, into another vat, also supported by the iron pipe frame.

Iron pipe has also been used to good advantage in constructing milk

can racks along one wall, allowing free drainage of cans when set upside down as well as ventilation.

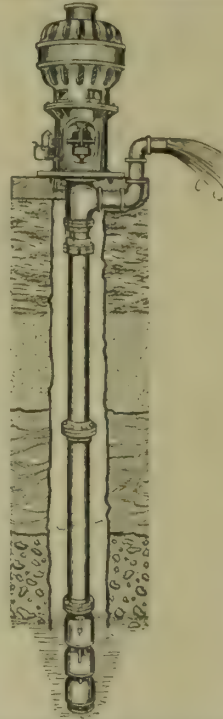
Good clean drinking water is pumped for the cows at all times into concrete watering troughs, of which there are two with 1,000 gallons capacity and three with 2,000 gallons capacity at various parts of the corrals and fields.

Both in permanency and cost these troughs are superior to wooden ones, the thousand gallon ones being 16 feet long, 30 inches wide and four feet high and costing \$16 for material. The larger kind cost more, but serve two fields as they are placed along and extend on either side of the division fences.

THE GAS-ACTION OF FARM EXPLOSIVES.

Of late years there has come on the market, in response to a growing demand from farmers, explosives particularly suited to their work. The coal miner has his particular kind and grade of dynamites and powder, and the rock and quarry man his kinds. Too often the mine and rock powders and dynamites have been sold for farm purposes, and the result is that the stump blasting, or subsoiling, or ditching, is not done as it should be, either in cost or effectiveness.

For removing stumps, and most particularly for soil tillage with explosives, a certain comparatively

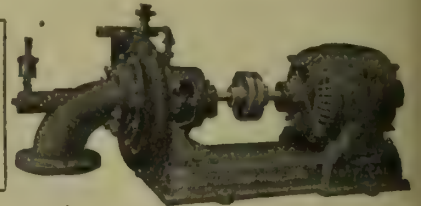


DEEP WELL TURBINES

No valves to pack or plunger rods to get out of order. For use in any well ten inches in diameter or over.

A complete line of irrigating pumps of all descriptions, horizontal and vertical for belt drive or direct connection to electric motor.

Prices as low as are consistent with good quality and workmanship.



WRITE FOR CATALOGUE NO. 47.

BYRON JACKSON IRON WORKS, Inc.

SAN FRANCISCO. LOS ANGELES, STOCKTON, VISALIA

New Model YUBA 20-35 Successor to the Model 18

Over 60% of the developed power is converted into actual work—that's tractor efficiency.

The transmission is completely enclosed—it is built as carefully as a watch.

Completely equipped with Hyatt high duty roller bearings. The BALL TREAD has all the frictionless qualities of the ball bearing. The minimum amount of power is used to move the tractor itself.

The renewable ball race is now made in two parts, and will permit of greater wear. There is room for larger oversize balls.

The new track is boltless, needing no attention. The treads are of high carbon cast steel. Wearing points are thickened. The tread has greater traction.

The air cleaner is more efficient and requires next to no attention. The radiator also is much improved. A heavy-duty long stroke motor is employed. It is ideal for a stationary power plant. The crank shaft is larger.

The oiling system is of the force feed type. The distillate tank is larger—holds 38 gallons.

A request from you will bring by mail a thoroughly detailed description of this new model—the most perfect application of farm power ever produced.

Hundreds of farmers and other users of the Yuba Ball Tread Tractor have, for three years, been helping us build the new model 20-35. Through our Service and Engineering departments an intimate touch has been kept with nearly every machine sold. The behavior of every part of each machine in the most exacting service has been under observation. Wherever an improvement in material or construction was suggested, it was carefully noted. Opportunities for minor changes were noted.

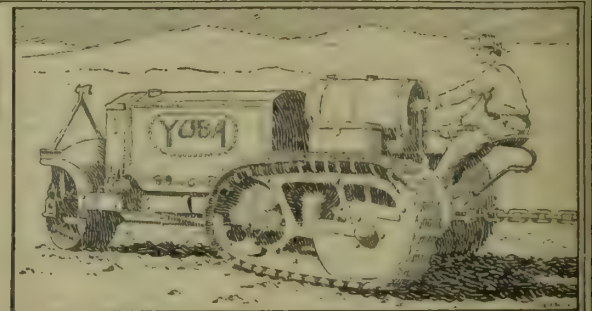
One by one these suggestions were tried out. Engineering skill of the highest

THE YUBA CONSTRUCTION COMPANY

SAN FRANCISCO

Works at Marysville, California

MANUFACTURERS OF THE YUBA FLOW, THE YUBA PUMP



Replaces 20 horses at the drawbar and gives 35 H.P. on the Belt
More power. Less upkeep

quality has been constantly experimenting and proving up the suggested changes during these three years. The result is the new model 20-35; replacing 20 horses at the drawbar, and giving 35 H.P. on the belt.

The new model replaces the model 18, the most popular tractor in the west. It has more power, and less upkeep. But note this important fact: the improvements are minor, and each of them can be made at a reasonable cost on the old model 18. These three years of persistent search for defects have proved the original design to have been in the main correct in principle. YUBA owners now have assurance that their tractors never become obsolete.

THE YUBA CONSTRUCTION CO.
Department A-103

433 California Street, San Francisco, California

Gentlemen: Kindly send me a copy of your booklet, "The Yuba Ball Tread Tractor."

P. O. Box	CHECK MAIN CROP RAISED
Name	Fruit..... Rice.....
Size of Farm..... acres	Grapes..... Alfalfa.....
Town.....	Grain..... Hay.....
State	Hops.....

slow, lifting, heaving and cracking gas action is wanted. This is totally different from the quick, sharp, shattering and cutting action of most mine and quarry explosives. The proper farm powder will produce an entirely different condition in the soil than will an explosive which is best to use for breaking up stone. The blasting of earth, particularly dry earth, and the removing of roots from the earth, is an entirely different proposition from the blasting of stone. In fact, the stone explosive can not be used with satisfaction in soil work. You cannot get the effect desired.

Another thing that should be more generally known is that the right kind of farm powder costs less than the stone or mine explosive. It is made with an ammonia base instead of a nitroglycerine base, and in these days of war nitroglycerine is a mighty expensive commodity. The average 40 per cent dynamite is both expensive and inefficient for farm work, compared to the right kind of farm powder. The farm powder is somewhat safer than the dynamite, too, because it requires more of a shock to explode it.

CHAIN-TRACK TRACTOR.

[Written for Pacific Rural Press.]

An interesting little tractor was tried out for the first time at the Puente demonstration. It is the latest put out by Lambert Tractor folks. This one was made in Los Angeles county and handled by Wm. Gregory. Its feature is the track, on which almost the entire study has been put.

The machine pulls 8 h.p. on the drawbar, is not over 3½ or 4 feet high, guides by two wheels in front, and is run by a "chain tread" track. They expect to put out a machine without wheels but with two tracks.

The track is made of four heavy chains, to alternate links of which are fastened with U bolts, cross bars made by riveting two angle irons into a T form. The flat side of the T's is inside for six eight-inch roller wheels to roll on, supporting the weight of the machine. The track is revolved by a driver wheel the sides of whose rim are separated by roller bearings. These rollers engage teeth clamped to the centers of the T's, thus revolving the track.

The advantages sought and claimed for the track are simplicity, durability, easy to change any part that might need it, and cheapness. The chain and tread can be replaced entire for \$25. The links have only a very slight bend from a straight line when turning the ends of the track, and there is no chance for dirt to get between them or to stay there, for the chain is not oiled. A cold-shut link connected the ends of each chain and others could be quickly inserted in case of breakage. A link was shown us which had been used in plowing 60 acres, and it had scarcely been worn to a good bearing.

In the general demonstration, this tractor pulled two disk plows 6 to 8 inches deep in the hard soil at above the ordinary speed, with its engine sputtering along as if it could do lots more. In its private demonstrations a disk cultivator was often pulled about the field, three or four of the disks reaching beyond each side of the tractor.

It will be interesting to observe this "chain-tread" track proving itself in actual farm work.

POWER ON POULTRY FARM.

[Written for Pacific Rural Press.]

Fixing up a poultry farm with ingenious and economical conveniences, is C. H. Hosford's great pleasure. His establishment in Riverside county for hatching 6000 to 7000 chicks at once from eggs produced on the place is nearly a model of convenience in handling the business.

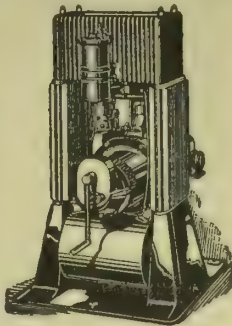
The chief factor in such work is the power outfit used in doing it. On this ranch, a special building is set aside for this purpose. A 3 h.p. electric motor was bought cheap, second hand. A smaller one would do their work now at less cost for electricity, but additional equipment may be added later.

The motor runs a lineshaft overhead. This runs a fine band saw rigged up to cut the circular holes in partitions for trapnests as de-

scribed in another article. Another belt runs a circular buzz saw by which Mr. Hosford cuts all lumber for henhouses, buildings, nests, boxes, etc., as he designs them. Another belt runs a grindstone. Another runs an 8-inch green-feed cutter, for green chopped alfalfa is especially desirable in the fall months. A great deal of dry mash and other feed is now mixed by hand

with an excess of labor which might possibly be put to better use. The motor would easily run such a feed mixer as those described in our columns heretofore.

The three days rain ending Monday of this week was the heaviest we had in Southern California for a number of years so early in the season.



Uni-Lectric
GASOLINE-ELECTRIC UNIT
LIGHTING SYSTEM

Electricity for Farm Homes

At one-third cost of juice from Power Company, (thus includes interest on cost of plant). It is the simplest and most economical plant on the market.

No Batteries - No Switchboard - No Rheostat.

Will operate 50 lights 7½ hours for 11c. Will also operate electric fans, irons, small motors, etc.

If your buildings are not wired, send us plans and we will give you full instructions so that you can wire them yourselves. Material furnished at lowest cost.

Karl A. Hedberg Co., Inc.

Electrical Engineers.

104 Clay St.,

San Francisco, Cal.

PULL



*— that's what
counts in plowing*

You need power in a tractor—dependable, steady power—and you get it in the Caterpillar. But you need something more—you need that power converted into pull at the drawbar with least possible loss. There are two reasons why the Caterpillar outpulls most tractors of the same rated horsepower

- there is no loss of power through slippage—the sure ground-grip of the long, wide tracks prevents that.
- Holt construction gets the power from motor to drawbar with minimum frictional loss.

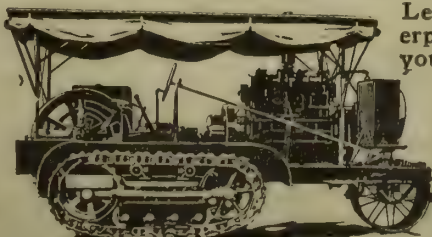
CATERPILLAR

Reg. U.S. Pat. Off.

You can depend upon the Caterpillar to give you service, day after day—day and night if necessary—with low operating cost and minimum upkeep expense. There's a reason why the Caterpillar was awarded the Grand Prize at both California expositions. There's a reason why it wins highest honors in

every competitive test. Study the Caterpillar and you'll find that reason—right design, right materials, right construction. Or, better still, investigate the records of Caterpillar owners. Their success and satisfaction is a sure guarantee that you, too, will find the Caterpillar the most profitable tractor investment.

Let us give you more facts and figures about the Caterpillar. A request for Catalog No. C 342 will bring you full information. Send for it today.



The Holt Mfg. Company, Inc.

Stockton, California

San Francisco, Calif.
Spokane, Wash.

Los Angeles, Calif.
Portland, Ore.

General Agricultural Review.

FIELD CROPS.

The ranchers around Wyandotte are engaged in sowing grain. The recent rains have put the ground in fine shape.

Continuous storms in the past week throughout Nevada have done considerable damage to grain and third-crop alfalfa.

E. G. Outland of Santa Paula reports on his ranch a lima bean stalk ten feet long and containing 657 well-filled pods.

Asparagus may become an important Turlock product, as packers are trying to interest farmers in the culture and growth of this vegetable.

J. H. Stephens, president of the Rice Growers' Association, plans to go to Louisiana and Texas for graders to handle the California crop.

The present value of the small bean crop around Salinas has been estimated at \$360,000. As high as seven cents a pound has been obtained.

California leads all states in average yield of cotton per acre and in condition. Condition is rated at 93 and average yield per acre 484 pounds.

The Woodland rice mill will begin operations November 1. A warehouse in connection and for storage of the product is under construction, with a capacity of 200,000 bags.

The Oakdale pea cannery has resumed operations and is working with a big force on lima beans. The company has an extraordinarily fine crop of lima beans on the 85-acre tract of bottom land.

The Sacramento Valley Sugar Company has received two carloads of beet seed and is expecting more in the near future. The seed will be planted in territory which will make possible the opening of the sugar factory in Hamilton City.

The largest grain deal consummated in Northern California this year was the purchase of the crop of the Stovall-Wilcoxon Co. ranch near Williams—18,876 sacks of wheat, and 28,615 sacks of barley—for about \$96,500.

The proposal by the western railroads to charge \$1 and \$2 respectively for bedding single and double deck livestock cars, in traffic from the southwest, is suspended by the Interstate Commerce Commission until Jan. 20. It is now furnished without charge.

A man representing a Chicago food firm has been in Biggs lately looking over the product from four rice fields near here with the idea of establishing a western factory on the Pacific Coast, for a product known as "Cream of Rice." It is made from rice and powdered milk.

The State Railroad Commission, after a rehearing, has decided that the reduction ordered in rates on paddy rice, moving from points in the Sacramento and San Joaquin Valleys to San Francisco, Sacramento, Biggs and Gridley, will not affect the earnings of the river boat lines.

G. W. Hume Company's Turlock cannery closed the 1916 season completing the largest pack in the history of the establishment. The total pack of the season was somewhat in excess of 100,000 cases, comprising 80,000 cases of peaches, 15,000 of apricots, and 5,000 of pears. The pack exceeded that of 1915 by 30,000 cases.

W. Barnes recently harvested three hundred pounds of alfalfa seed from a planting made on his ranch near Blacks Station (Yolo county) thirty-eight years ago. During this interval there has been no replanting, no irrigation and no renovation of any kind except one cultivation some years ago. The plot (8 acres) has done noteworthy service as pasture and besides producing the

above harvest of seed it has yielded about eight tons of hay the present season.

DECIDUOUS FRUITS.

J. W. Roller of Pomona has a five-year-old peach tree that is bearing its second crop. It produced a crop in June. The tree was watered with some other trees, blossomed again and at last report had 500 well-developed peaches on it.

Following protests by fruit farmers that Sunday auto parties had been pilfering fruit from orchards alongside the highways, a special fruit-officer has been appointed in Contra Costa county. Twelve arrests were made last Sunday.

The California Prune Festival Association, San Jose, announces that the seven days preceding Christmas shall hereafter be known as Prune Festival Week and that the giving of prunes as Christmas presents shall become a custom in the land.

Because the rains kept many people away from the apple show at Yucaipa last week, it was continued Sunday, Monday and Tuesday. The crowds have been the greatest in the history of any of the five shows held, and the exhibits from the 5000 acres of apple orchards have been larger than ever before.

The Sixth Annual Apple Show of the Mendocino Farmers' and Apple Growers' Association will be held in Ukiah from Oct. 25 to 28, inclusive.

A good many pear-raisers in Biggs valley sold their pears green this year, getting \$36 to \$40 per ton. Heretofore nearly all the pears have been dried. Those who dried their pears this year still have them on hand.

Santa Cruz county apple growers estimate their losses on bellefleurs this season at between \$75,000 and \$100,000 due to a county ordinance preventing shipments of so-called "green fruit." Leading growers contend it is better to leave the time of apple shipments to the judgment of the shipper rather than to a law which may affect one orchard and let another go scot free.

CITRUS, NUTS, SEMI-TROPICAL.

Herbert D. Derwin, a prominent and wealthy orange grower of Up-lands, died recently at the age of 43 years.

Thirty pickers were put to work Saturday, October 7, on the lemon grove of Parr & Shippey in the Zante district north of Porterville.

The walnut season in Orange county is two or three weeks earlier than usual, and all crops are expected in before mid-November.

The cracking test on walnuts this year is 87, while last year only 85 per cent of the nuts were required to be good. In Orange county they are "cracking out" 90 to 96 per cent good.

The Ehmann Olive Co. has purchased the Fogg olive grove of 40 acres located on the bluff overlooking the Feather river opposite Oroville, for \$50,000.

The advertising appropriation of the Calif. Fruit Growers' Exchange this year will be about \$275,000 for oranges and \$105,000 for lemons, according to Assistant Manager E. G. Dezell.

Tribble Bros. Nurseries had a fine display of all kinds of nuts at the Fresno Fair on plates, labeled with variety names. It was a fine chance for comparison of the 13 varieties of almonds, and many walnuts, besides hickory nuts, pecans, butternuts, and other kinds.

The orange season will soon open in Tulare county. The oranges and grapefruit there are the first to ripen. The Board of Supervisors by unanimous vote passed an ordinance establishing an 8 to 1 standard, eight parts soluble solids to one part of acid, as the standard of

maturity and the shipments of all others prohibited. It further provides that each shipment shall be accompanied by a certificate issued on the authority of the Horticultural Commissioner setting forth that the oranges accompanying the certifi-

cate are up to standard required.

GRAPES.

A considerable amount of Zante currants is being grown in both Fresno and Placer counties.

Probably 30 per cent of the 1915



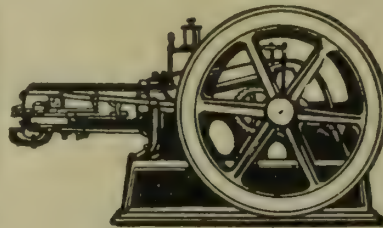
OUR FREE PUMP CATALOG
Contains a wealth of information.

We want you to have this amazing book. It is one of the most helpful booklets of its kind ever prepared. Contains volumes of information about irrigation, and also tells about the famous Layne & Bowler Pump.

Write at once and ask for Copy No. 25.

Layne & Bowler CORPORATION
900 Santa Fe Ave., Los Angeles

Satisfaction!



Says James Hughan, of Downey, Cal., under date of Dec. 16, 1915. Here is his letter: "Eight years ago I bought a 25 H. P. Commercial Engine and have been using it ever since. Am pleased to say it has given entire satisfaction and is running as well as when it was installed. Repairs have cost so little that it is not worth mentioning. "Last summer I replaced my batteries with one of your Plugoscillator Magnetos, and am more than pleased with it. No trouble to start and no trouble while running. "Will say that I have had more satisfaction from the money spent with your company, than any money I ever spent in my life."

That's what a practical man says of the

Commercial Engine

San Joaquin Valley
Ranchers
are invited to visit our
Fresno salesroom freely, and
without obligation

What more is needed? Our catalog shows details of construction and explains why the Commercial will do the work required most efficiently with least supervision and expense, week after week and year after year. It is free—why not send for it now?

COMMERCIAL ENGINE CO.

2424 Porter St., Los Angeles, Cal.
Branch: - 1228 "H" St., Fresno, Cal.

ALFALFA VETCH Melilotus Indica

Write for Prices

CALIFORNIA SEED COMPANY
151 Market St. - - - San Francisco

PLOW NOW, WITH A GROUND HOG

By a system of weighing it works in Hard Ground, where other plows fail.
—OUR NEW—

Orchard and Farm Plow

for small tractors, has no levers to interfere with limbs—no slow, cumbersome Worm Gear.

Write for Circular R.

SPALDING-ROBBINS DISC PLOW CO.

625 Market St., San Francisco



seeded raisins handled by the Associated Raisin Co. were packed under their own brand.

A group of wine grape growers in the San Joaquin valley pooled grapes and sold to independent wineries and through the California Associated Raisin Company. They got \$15 per ton.

From three acres of eight-year Thompsons and Sultanas, A. B. Cate of Clovis never picked over 900 trays. This year he picked 2500 trays. He has followed Frank Henry's weekly instructions.

The Associated Raisin Co. is already working on new contracts for the five years to follow 1917 in which present contracts expire. Some of the objectionable features will be changed and the plan will be submitted about New Year's.

The East has developed a taste for Escalon's famous grapes, Ladyfingers. Last week a mixed car of Tokays and Ladyfingers reached Cleveland, O., and that city readily paid \$1.60 per crate for the Ladyfinger grapes, while the Tokays sold for about \$1.20.

H. F. Stoll, member of the viticultural commission, has just returned from a trip over the State. He says: "The wine grape growers are well pleased over the present outlook. The prices that are being offered for grapes are better than they have been for several years. The dry wine districts growers are getting from \$20 to \$25 a ton for their grapes, according to varieties, while those in the sweet-wine districts are getting from \$12 to \$15 a ton."

MISCELLANEOUS.

The Vine Hill school district, near Martinez, ordered school closed for two weeks while the students picked grapes.

Kerman booth won first prize for general agricultural and horticultural exhibit at Fresno Fair; Clovis 2nd, and Sanger 3rd.

Poultry Breeders' Directory.

BARRED PLYMOUTH ROCKS—"The kind that Win and Lay." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for catalog showing winnings at California's leading shows. Chas. H. Voden, Box 396, Los Gatos, Cal.

INCUBATOR CHICKS—Thoroughbred White Plymouth Rock, \$25.00 per hundred; White Leghorn, \$12.50 per hundred. Highest class of stock bred to standard and to lay. Awarded all first prizes at California State Fair 1916. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

BABY CHICKS NOW READY—Hatches every week. Write for special "Fall Chick" circular. See why Fall chicks pay. R. I. Reds, Barred Rocks, Black Minorcas, White and Brown Leghorns. Campbell Poultry Ranch, Campbell, Cal.

CROLEY'S DRY MIXED INFANT CHICK FEEDS for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by GEO. H. CROLEY CO., Inc., Poultry Supplies, San Francisco.

THE SANTA CLARA VALLEY HATCHERY solicits your orders for Fall and Spring delivery in 8 breeds of baby chicks. Order early and get the best. Jos. A. Bihn, Lincoln Ave., San Jose, Cal.

DANISH S. C. W. LEGHORNS—If you want to increase the size or vigor of your stock or the size and number of your eggs, use one of our cockerels. River Bend Farm, St. Helena, Cal.

SICILIAN BUTTERCUP hens and pullets, fancy and utility, for sale. Fine stock at reasonable prices. M. S. Woodhams, San Mateo, Cal.

EASTMAN'S REED TO LAY Barred Plymouth Rocks, Chicks, Eggs, Cockerels. Fairmead Poultry Farm, Fairmead, Cal.

DAY-OLD CHICKS—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

WHITE WYANDOTTES—Blue-ribbon winners. Eggs \$2 to \$5. Chicks, pullets, cockerels R. W. Strawetski, Route 2, San Jose, Cal.

HIGH GRADE ANCONAS—Fancy and utility. Settings, \$3.50. Fertility guaranteed. J. R. Bell, Livermore, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS Pea Fowl, Pigeons. Wm. A. French, 546 W Park St. Stockton, Cal.

ONE PAIR Plumaged Golden Pheasants. T. D. Morris, Agua Caliente, Cal.

TURKEYS, DUCKS AND GEESE.

HART'S BRONZE TURKEYS AND EGGS—Large reduction in price of stock. Order now for fall delivery. Free Circulars. Albert M. Hart, Clements, Cal.

TRAPS AND GUNS

We pay highest prices for Furs, and sell you Traps, Guns, Supplies, etc., at **FACTORY PRICES**. Write for **FREE CATALOG, TRAPPERS' GUIDE**, and Fur Price List. E. A. STEPHENS & CO., 243 Stephens Building, DENVER, COLO.

Homestead entries in Shasta, Siskiyou and Tehama counties are to be enlarged to 320 acres after October 10. These entries are for arid or "designated" land.

RAIN DAMAGE.

Bean harvest was on, and the rain made fields so wet that work in many cases had to cease, leaving beans to stain and rot in the field.

Prices on lima beans and raisins to the trade have been withdrawn until more accurate damage estimates can be made than are possible at this writing.

Alfalfa that had been cut for seed was nearly all ruined. Considerable damage was done to the different varieties of corn, especially gyp, as a great deal of it had been cut and thrown in piles. A large part of the last cutting of alfalfa was badly damaged, as most of it was either in the windrow or shock.

Rains since Sept. 30 all over the producing parts of the State have done heavy damage to raisin and bean crops wherever grown commercially, except that most of the Thompson and Sultana grapes were already in stacks or sweatboxes. Walnuts were mostly gathered, and will not be much affected. Figs are considerably damaged. Some of the raisins are being saved by artificial driers; others, dry enough to stack, have been sulphured to kill molds. Raisins left stacked in the vineyards are likely to mold or sour unless wind and sun save them.

SHAKING SAND OUT OF RAISINS.

[Written for Pacific Rural Press.]

The recent rains will result in lots of sand in the raisins. If you don't take it out, the company will. If you want to deliver clean raisins, tack a quarter-inch-mesh wire screen over a bottomless lug box, set it on

a light sawhorse, dump raisins in, and shake the sand out. If a sweat box is used to get a big job done more quickly, the wire must be braced by strips nailed across under it. Then the sweat box may be hung by wires to make shaking easier.

BEEKEEPERS' SUPPLIES

Everything for the Honey-Bee. Catalogue sent free on request.

THE A. I. ROOT CO.,

245 Mission Street, San Francisco, Calif.

"HEADQUARTERS" FOR WOOD PIPE AND TANKS

TANKS

WINE TANKS

FERMENTING TANKS

WATER TANKS

OIL TANKS

PIPE

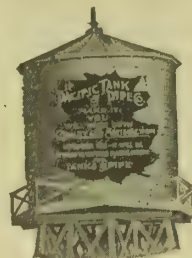
WOOD STAVE PIPE

IRRIGATION PIPE

MACHINE BANDED PIPE

SEWER PIPE

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WRITE FOR ILLUSTRATED CATALOG

Pacific

PACIFIC TANK and PIPE CO.

Factories and Offices:

15 Pine Street,
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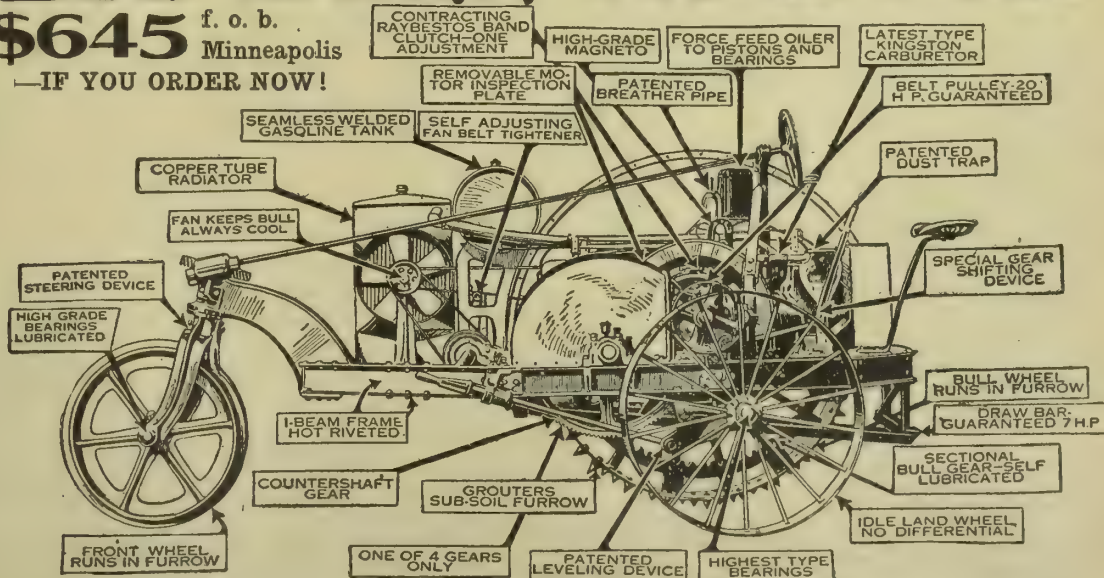
19 Trust and Savings Bldg.,
LOS ANGELES, CAL.

IMPORTANT NOTICE---To intending Tractor Purchasers, regarding the

BIG BULL TRACTOR

\$645 f. o. b.
Minneapolis

—IF YOU ORDER NOW!



NEW IMPROVED MODEL—STUDY THESE FEATURES CAREFULLY.

WE HAVE BEEN ADVISED by the factory that the price of the Big Bull will increase at least \$150 as soon as their present stock is disposed of, owing to the high cost of the new improvements and the continued advance of materials, which have gone up 300 to 400 per cent.

OUR ALLOTMENT OF THIS STOCK IS LIMITED. We expect it to be closed out in the next 30 days. So we earnestly urge all intending tractor purchasers to take advantage of the present price—which is, as we advertise, \$500 to \$700 lower than the price of any other tractor of equal capacity.

REMEMBER YOU ARE GETTING ALL THE NEW IMPROVEMENTS—including Kingston High Tension Magneto with impulse starter—which eliminates batteries—Hyatt Roller Bearings, Patented Dust Trap and Distillate Burner—which cuts out dust troubles and allows you to use cheap fuel—new improved radiator, covered counter-shaft gear, etc.

HUGHSON & MERTON, Inc. 530 Golden Gate Ave., S. F.
1229 So. Olive St., L. A.
329 Ankeny St., Portland.

FILL OUT THIS COUPON.

R. P.

HUGHSON & MERTON, INC.,
530 Golden Gate Ave., S. F.

Please send me literature on new improvements in Bull Tractor.

Name

Address

Livestock Facts and Fancies---IV.

[By the Editor.]

If one reads and listens, observes and thinks about the purebred animal, as we suggested it desirable to do in last week's issue, he will soon find dawning in his mind new perceptions of specific differences between the purebred individual animal and the scrub, or common animal, and new conceptions of what the differences signify in the superior capacity of the purebred to be and to do desirable things. This is an attitude of mind which should be seized upon and encouraged by the beginner. It is the very same thought which the primeval man who did the first bit of breeding had: it is the thought which the founders of the now well-known breeds started with. It is the foundation of preference and selection. Without it all the broader conceptions of advantages of breeding, either could not have arisen or would have been frittered away before realization. Therefore encourage yourself to study the differences of individuals. Study the score card, which is simply a record of differences which you must see and understand or you cannot estimate them aright. Score everything you see of the kind you elect to follow—whether it be an Irish bull or a saw-horse.

Of course it is not our function to explain what you must see and how you must judge it. That you can get from the books or from your instructor, from discussions with breeders of experience, from close watching at the ring-side, from study in your own corral, etc. If you should ever think you are getting wise quickly, kick yourself. You will learn as long as you can see and when your sight gets dim you can feel, but you will never know it all. Methuselah lived 969 years herding stock on the plains of Canaan and probably worked off many culls on the cattle buyers of several short-lived, prehistoric Pharaohs, but he did not know enough to teach his grandson Noah to select both beef and dairy types for his shipment to Mt. Ararat. You can now learn from a dollar and a quarter book more than Methuselah learned in a thousand years, but even with that start you will not land much nearer to encompassing the infinitude of wisdom which the Creator has locked up in the domesticated animal, than he did. But remember that you can still get a little nearer to living a fruitful and understanding life than any man ever did before you, if you do not get too cock-sure and conceited over the first things you learn about purebred stock.

Perhaps we can suggest something about the proper attitude of mind, with which a beginner should view a purebred animal by reference to our own experience. There is nothing new about it. It is common experience, but by citation of personal reference we may perhaps visualize it for you, as the movie men say. It was our good fortune in 1873 to stand close in when the English Earl Bective paid \$40,600 for the 8th Duchess of Geneva at the New York Mills sale of Shorthorns—bidding against the Alexan-

ders of Kentucky. It was the highest price ever paid for a horned animal. As we remember, the cow was a good looking roan, but no better, so far as we could see, than others which sold for a fraction of the amount. And so we asked the next man why they paid so much. He replied: "It is her breeding: the English have sold short on her blood and must get it back again at any price." Then it dawned on us that it was not only the cow which the Earl Bective bought: it was the men in the cow! And from that day to this we have never seen a famous purebred without seeing also the men in it. And that, it seems to us, is the proper attitude of mind for every beginner to conceive and for every experienced man to remember. And when one thinks that he is not merely buying purebred bulls or cows, horses, hogs, sheep, goats or poultry, but is really buying men, he can understand why in some cases long figures are reasonable. But no one is justified in buying or selling men at any price unless he has worthy motives. To sell men, in the form of their achievements with purebred animals, in such a way that their sale shall help other men to reasonable and dependable industry, embodies a noble motive: all forms of jockeying are otherwise.

And if you can rightly see the men in the purebred animal what can you see in the scrub? It is a fanciful notion, we admit, but the contrast of ideas always causes us to see the bear or the wolf in the scrub. It may be the "call of the wild," perhaps, but it is always a real emotion with us. And yet the scrub is not even a decent wild animal, for wild animals are "purebred" in their way. They have forms and characters which are the result of "natural selection." They can live and rear their young and, to meet nature's requirements, they are par excellence. If they do not reach this standard they die on the way and inefficiency is thus selected out of being. The man-made purebred is the result of "intelligent selection" and evil dies out of them by the operation. The wild type and the purebred type are, in a way, the same in creative process and attained efficiency, but they are at opposite ends of the line. Between the two ends is the whole multitude of scrubs and grades—working one way or the other according to the "wisdom and skill of the man who makes them—but worse than both, if judged by the standards of both. They are bundles of conflicting heredities. Left to themselves and bred among themselves without selection they follow the alleged tendency of earthly things and go to the devil. Turned loose, under proper environment, nature will work them over into decent wild things. Protected from each other and kept under the formative influence of purebreds they have in some cases become eligible to registry. Unless their owner does this with them, working always with selection and the best regenerating agency, they will rob him of his substance like a bear or a wolf, and this is probably why we always

think of these animals when we see a scrub. The wildling is the work of nature: the purebred is the work of man: the undisturbed, inbred scrub is an offense both to nature and man. There is nothing new about all this. Jacob knew it when he misled the cattle of Laban. The sad thing about it is that, not trying to know it and act upon it, or scoffing at it, retains, even to the present day, the power to keep men poor.

According to J. Leroy Nickel, President of the Miller & Lux Corporation, the big 90,000 and 100,000 acre cattle ranches in the heart of the San Joaquin valley are to be broken up and sold in small

tracts to actual settlers.



Purebred Registered HOLSTEIN CATTLE

One of the greatest investigations among dairy breeds was made by experts of the Wisconsin Experiment Station. Prof. F. W. Woll states that the "Holstein cows produced considerably more milk solids and fat than the cows of other breeds (19.5 per cent more butterfat than the Guernseys and 38 per cent more than the Jerseys), and they also give larger net returns for feed consumed." In all dairy breed competitions where Holsteins entered have been representative, they have produced a greater net profit for butter than any other breed entered. There's big money in the big "Black and White" Holsteins.

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at the

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ANOAKIA BREEDING FARM

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85 HOLSTEINS OF SUPERIOR MERIT 85

Monday, Oct. 23, 1916

There has never been a sale held in the State that has included as many high-class 2-year-old heifers as this one.

THINK OF—

Daughters of Sir Canary Belle De Kol, a 37-lb. sire.

Heifers bred to Sir Canary Belle De Kol.

Daughters of King Segis Pontiac.

Daughters of Johanna McKinley Segis.

Granddaughters of Queen Juliana Dirkje.

and a number of high-class bulls, such as has never been offered before in the West.

They include a son of—

Mossetta Mutual Paul Johanna

World's Milk and Butter Champion

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California State Record Cow.

34-lbs. butter in 7 days.

Miss Valley Mead De Kol Walker

California State Record 2-year-old.

and sons by such great sires as—

Prince Gelsche Walker

King Korndyke Pontiac

Aralia De Kol Pontiac Segis

King Mead of Riverside

Segis Pontiac De Kol Burke

All our of A. R. O. Dams.

Every animal Tuberculin Tested and Individual Certificates furnished.

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CHOICE BOARS AND GILTS FOR SALE.

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More calves have been raised on Blatchford's Calf Meal than on all other milk substitutes combined.

100 lbs. makes 100 gallons of milk substitute, costing only one-third as much as milk.

Prevents scouring and insures the early maturity of sleek, handsome calves.

It is steam-cooked and no trouble to prepare or use.

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AT HANFORD, KING'S COUNTY.
Some of the Best of Our Herd means
Some of the Best of the Breed.

See Our Consignment in Catalog.

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KING'S COUNTY, CALIFORNIA

UNDER THE HAMMER! At Public Auction.

Tuesday, 10 a. m.,
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The **BURBY BROS HERD** of registered and high grade Holstein cattle will be sold, separately, or as a whole, together with all other personal property. 44-acre alfalfa ranch for rent. Sale takes place, as above, at ranch, better known as "Henry Krehe Ranch," 10 miles south of Gridley, 10 miles N. W. of Yuba City, and 3 miles south of Live Oak, Cal.

Further particulars from

Anton Burry,
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OPEN AND BRED GILTS
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Breeding and Individuality
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Tagus Ranch

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TULARE, CAL., via TAGUS.

DUROC JERSEYS

LARGEST HERD IN THE STATE. Headquarters or the best in Golden Model and Colonel breeding. Stock of all ages always for sale. Start with the best. Ranches at Holtville and Devore, San Bernardino Co.

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PETERS, LAMSON & WALKER

Tamworths and Duroc-Jerseys

We can fill orders for mature stock and weanling pigs of both sexes. This is the largest herd of TAMWORTHS in the State. Our Stock is sure to please.

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In Carload Lots a Specialty.

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SILAGE FROM SUGAR BEET TOPS.

To the Editor: Do you consider sugar beet tops good material to make silage out of, or would it be best to mix it with green alfalfa or corn? I mean to cut it with a feed cutter and put it in the silo for feed for dairy cows.—J. H. Co., San Jose.

[Answered by Prof. F. W. Woll, Univ. Farm, Davis, Cal.]

Sugar beet tops are siloed regularly in European beet-growing sections, and the silage is fed to dairy cows and fattening cattle during the winter months. The tops make a slimy, rank-smelling silage, which is, however, greatly relished by cattle. Besides furnishing succulence to the ration, it apparently acts as an appetizer, something like limburger to people who are fond of this cheese. As beet tops contain nearly 80 per cent of water, they cannot be mixed with other watery feeds and make good silage. It was found, however, in an experiment conducted some years ago at the Wisconsin Station, that beet tops and dry corn stalks, run through a feed cutter and placed in a silo, will make a fair quality of silage. But it is not likely that a similar result would be obtained with green alfalfa or green corn and beet tops. Either of these crops may be all right for silage purposes with beet tops if cut at an advanced stage of maturity or if left to wilt before being put into the silo, but I know of no one who has made silage from a mixture of these crops, nor has beet tops alone been siloed in tall American silos to my knowledge. In Europe, the tops are put in long shallow trenches in the field and covered with straw and dirt, a method that involves large losses of feed materials through fermentations and decay, but the resulting silage, as suggested, is a valuable dairy feed, even though it might not meet the approval of our sanitary inspectors.

FEEDING FROSTED SUDAN GRASS.

To the Editor: Is there any danger at all in pasturing a heavy growth of Sudan grass after it has been killed by frost? Is it a sorghum and does it ever sprout from its old root?—W. I. K. F., Ripon.

[Answered by Prof. F. W. Woll, Univ. Farm, Davis, Cal.]

Sudan grass has only recently been introduced into this country, and we have no information as to whether or not the green grass is likely to be poisonous under similar conditions and to the same extent as other varieties of the sorghum family. It is, therefore, better to be on the safe side and not feed it under conditions when green sorghums should not be fed, i. e., when the growth of the crop has been stunted either through frost or periods of severe drouth. It is the new shoots that grow up in such cases that may contain prussic acid and therefore be poisonous to stock. This does not always happen under the conditions stated, but in case of doubt the safer method is either to pasture only one or two animals on the grass for a short time and to watch them carefully, or to cut the crop for hay or for the silo. So far as I know, there is no evidence that hay or silage made from any of the plants of the sorghum family cannot always be fed to stock with safety.



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Catalogs and Barn Plan Books Free.

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DAVIS, CAL.

Shropshire and Merino Sheep
and
Shorthorn Cattle

Shropshires sired by rams imported by me from England.

HILLCREST LAD,

Imported 1911.

SHENSTONE CAVENDISH,

Imported 1913.

Individuals and Carload Lots.

A Few Shorthorn Bulls for Sale.

HILLCREST LAD,
1st Prize State Fair, 1911.



SANTA ANITA RANCHO

ANOAKIA BREEDING FARM



FIRST ANNUAL SALE, OCTOBER 23rd and 24th.

ARABIAN THOROUGHBREDS: Two-year-olds, sired by Imported Stallion Ibn Mah-russ, head of our Arabian Stud. Dams are the choicest thoroughbred mares of Santa Anita Rancho.

SADDLE HORSES: Fourteen of them, some of which are sired by Ibn Mah-russ, world renowned imported desert saddle stallion, and Don Costano, a five-gaited Kentucky saddle stallion. These horses are mostly three-year-olds.

POLAND CHINA AND BERKSHIRE BOARS: Four to nine months old. Sired by famous Poland China herd boars—Banker's Boy and Glenview Wonder. And Berkshire Boars—Kintyre Laird, Grandson's Duke and Fashion's Longfellow 5th. The dams are from the very best blood lines. Most all these animals have winnings at World's Fair.

Write for catalogue.

HOLSTEINS: We will sell a number of young bulls. Some sires and grandsons of the noted Prince Gelsche Walker, and bulls from one World-Record cow and two California State-Record cows.

Sixty females of the highest class will be consigned.

Write for catalogue.

WORK HORSES AND MULES will also be offered for sale.

WRITE FOR PARTICULARS.

Anita M. Baldwin,

W. H. TAYLOR, Superintendent.
Santa Anita, Cal.



RIVERINA LADDIE 5th,
Grand Champion Boar, Sacramento, 1916.

Riverina Yorkshires

CHAMPIONSHIP HERD AT
P. P. I. E. WINS AGAIN AT
SACRAMENTO.

Grand Champion Boar,

Grand Champion Sow,

Champion Boar and Sow bred by

Exhibitor,

10 Firsts, 7 Seconds.

SERVICE BOARS.

SPRING BOARS AND GILTS.

Special Offer

On gilts bred to farrow in October

and November.

RIVERINA FARMS

Paradise Road, Modesto, Cal.

I Offer for Sale the

REGISTERED GUERNSEY BULL

KITCHENER'S BEAUTY BOY, 35,049.

Dam: Imp. Beauty of the Hougue Fouque. Sire: Kitchener's Rose Farm Boy. Born March 2, 1915. This bull is not excelled by any young bull in the State, and if you are looking for something good, priced right, let me send you photo and price.

H. S. VAN VLEAR,

R. F. D. 2, LODI, CAL.

Live Stock and Dairy Notes.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

DAIRYING AND DAIRYMEN.

The Imperial Valley Creamery is shipping to New York butter in carload lots.

R. T. Walker of Fallon, Nev., has purchased the 2-year-old bull Napa King Segis Korndyke of Dr. Stetson, Napa, Cal.

Roland Hill of Bakersfield bought 500 cows in Nevada about Sept. 10. They are crossbred Herefords and Shorthorns.

The Henderson Company of Sacramento has recently sold to a Hawaiian Island company 10 head of grade Holstein cows.

Joe Scott has shipped his dairy cows to Lovelock, Nev. Winnemucca will be supplied with milk and cream from this dairy.

The great administration sale of Herefords, at Tarkio, Mo., to close out the partnership estate of Rankin and Lynn, took place October 9 and 10.

Of the 944 cows tested during September for members of the Stanislaus Cow Testing Ass'n, 61 won a place on the honor roll by reaching a production of 1.5 pounds of butterfat a day.

A co-operative cow testing association will be organized in Nevada to determine the profitability or unprofitability of every dairy animal in the association.

El Dorado county ranchers are preparing to test the new pasteurization law. They claim it works a hardship to the small dairy owners in such counties as El Dorado.

The workings of the new dairy law makes no appreciable difference to the many dairies in San Joaquin county. Most of the dairymen produce cream, and their product is cared for at the creamery.

Mr. Jorgensen of the Riverdale Co-operative Creamery informed us that they were doing twice the amount of business this year that they did last. He looks for good butterfat prices to continue all winter.

The Gridley district has just received a carload of thoroughbred Holstein cattle of the very highest breeding. Seven of the animals were for M. McBride of Los Molinos, 11 for S. A. Mealey, and one for D. G. Beale of Gridley.

The grand champion cow, Valet's Golden Biddie L., presented Mr. N. H. Locke with a beautiful heifer calf at the Fresno District Fair. Hundreds were attracted to the pen to see the calf and its proud blue-ribbon mother. The sire was Valet's King, owned by Mr. Locke.

Fern Silver Ray, a Jersey owned by Mr. Vanderpool of Imperial Valley, has just completed an official test for a year. Her production of 702.22 pounds of butterfat for the period equals the State record for butterfat production by Jerseys. Her total production of milk was 12,637.9 pounds, with an average test of 5.556.

SWINE AND SWINEMEN.

O. L. Linn, secretary of the Poland-China Breeders' Association of Northern San Joaquin, received recently by Wells Fargo Express a 650-pound Poland-China boar.

F. D. Campbell of Tulare shipped two carloads of hogs lately to the Los Angeles market, and W. R. Belknap of the same place shipped one carload of hogs to Anaheim.

The Pacific Acreage Co. of Caruthers have 1,000 hogs on the ranch. They are fattening a carload lot now to ship to market. With barley at \$2 a hundred they find it hard to fatten them at a profit, even with prices as they are.

Tagus Ranch, N. H. Locke Co. and J. E. Thorp are northern Cali-

fornia breeders who made the trip to the Riverside fair being held this week. Early in the week it was predicted that the hog show there would surpass all past attempts in southern California.

W. Hough of the Western Meat Co. stated at the annual meeting of the California State Swine Breeders' Association that his company had killed 85,000 head of hogs up to September 1 this year. In 1914 the total number killed by this company during the year was 42,000 while in 1915 they killed 85,000. This, he thinks, shows the way pork production is increasing in California.

SHEEP.

The number of sheep in Imperial Valley increased from 6,221 in 1913 to 35,843 in 1916.

John McGlinchey of Livermore purchased 1,000 head of breeding ewes from Hayes & Devaney recently.

D. O. Lively purchased two fine Rambouillet lamb rams from Chas. Kimble of Hanford last week. They were shipped to a customer in Oregon.

Overfeeding of barley followed by the drinking of a large quantity of water caused the death of 150 sheep and sickness of as many more at the W. A. Ash ranch near Colusa last week.

Bullard Bros. of Woodland have received reports from their shepherd, who is making the Texas fair circuit, that there is a heavy demand for Rambouillet sheep all through that State at present.

Chas. Kimble of Hanford has recently filled a six carload order of Rambouillet bucks from his large flock consisting of 581 head. The shipment was made to fill an out-of-State order, Mr. Kimble finding a good demand from both the southwest and the northwest this season.

Jones Bros. of Woodland have acquired the N. O. Brown, Turlock, herd of thoroughbred Shropshires purchased last year from the well-known Knowlin & Finch herds in Idaho. Fourteen of the herd of 114 are registered and include one imported buck and a second buck that took third prize in Shropshire entries at the Exposition a year ago.

HOLSTEIN ASSOCIATION TO CONDUCT SALE.

[Written for Pacific Rural Press.]

That the selling of purebred livestock under the auspices of a State-wide association is a thoroughly constructive and satisfactory method is indicated by the announcement of the California Holstein Breeders' Association that it will hold its third annual sale at Hanford, October 18.

As the original intention of the association in holding these annual sales was to afford beginners an opportunity of purchasing foundation stock at breeders' prices, extraordinary high prices are not expected at the coming sale, although included in the 100 head to be sold are some of the best Holsteins that will go through an auction ring this year.

Consignments have been made this year by eight of the older and larger Holstein breeders of the State, all of whom have taken great pains to see that their offering was fully up to the standard set by the two previous sales.

This year's sale is being conducted and managed by the breeders themselves, not so much with the hope of securing high averages as with the desire to perpetuate the association sale idea, and for that reason buyers will doubtless be well satisfied with the cattle sold and the prices they bring.

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2 1/2c per word.

SWINE.

Poland Chinas.

SMITH'S POLAND-CHINAS—Sows and gilts bred to Joker, First Prize Boar at the Wisconsin State Fair, 1915. These sows and gilts, sired by Iowa Wonder, who is a son of A Wonder, the most celebrated Poland-China boar, living or dead. Litters from this mating are the best I have ever seen anywhere. Prices low quality considered. Will sell one or a carload. As a special inducement each purchaser will be given a year's subscription to the American Swineherd, the best swine paper published and a copy of the Handbook on the Sow; also a copy of the Pig Feeders' Manual. Geo. A. Smith, Corcoran, Cal.

YOUNG POLAND CHINAS, LARGE TYPE—Boar IBA Wonder won first and Reserve Championship P. P. I. E., weighing 730 pounds under 2 years and in breeding condition. 60-day special—fine young sows bred to IBA Wonder at very low prices; also weanling pigs, either sex. Satisfaction, or money refunded. W. A. Young, Lodi, Cal.

SONS AND DAUGHTERS of Laurel Champion. Won three first prizes, two championships, and both grand championships at the 1916 Nevada State Fair. Winona Ranch, Route 1, A-Box 105, Grant's Pass, Ore. P. R. Steel.

GRAND CHAMPION SUPERBA POLANDS—A few choice spring Superba boars ready for service. Sows bred to Superba for fall litters. Prices reasonably low. Rough's Greenfields, Arlington Station, Riverside, Cal.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated, purchaser to return crates. E. A. Hall, Watsonville, Cal.

REGISTERED POLAND-CHINAS—Prolific, pabulous, profitable porkers. Choice boars now ready for service, \$25 each. Weanlings, \$15. Dr. J. A. Crawshaw, Hanford, Cal.

LAKEVIEW STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Linn, Linview, Route A, Modesto, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trehwhitt, Box 82A, Hanford, Cal.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

POLAND CHINA HOGS FOR SALE—Registration papers furnished free. C. A. Cooley, Durham, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 27A, Davis, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED POLAND-CHINAS and Duroc Jerseys. M. F. Harrold, Orland.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

Berkshires.

BERKSHIRE IMPORTATION—We want every prospective Berkshire buyer to see our new importation from the East before buying. A superior lot of sows are for sale. Many of them are bred to Iowa Champion Peer 2d, a boar that cost us \$750 at Iowa Fairs. He is a "big type" Berkshire of great quality. Iowa Fairs had him fitted to win at the San Francisco World's Fair, but were prevented from showing by the quarantine. We have sows of all ages, and boars for sale. One or a carload. Write to us. Butte City Ranch, Box F, Butte City, Glenn Co., Cal.

REGISTERED BERKSHIRES—World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Championships. Stock of all ages for sale. Grapeville Farms, A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

FOR SALE—One Berkshire sow two years old and four pigs six weeks old. Sow and pigs registered. Will be sold cheap. Also one bay team, 5 and 7 years old, weight about 1250 each. T. Maher, Mountain View, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

SPECIAL—Six good service boars and a few sows in pig to Premier Leader due to farrow in October. Geo. M. York & Son, Berkshire breeders, Modesto, Cal.

REGISTERED BERKSHIRES—For sale, bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

REGISTERED BERKSHIRES of prize-winning blood. Write for description and photos. Imperial Stock Farm, Morgan Hill, Cal.

ROSCROFT BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Perris, Cal.

BERKSHIRES—Four service boars, 30 Spring 1916 open gilts for sale. Oak Grove Farm, Box 1, Woodland, Cal.

REGISTERED BERKSHIRES—Weanling pigs, \$10 each. G. A. Casey, R. 7, San Jose.

CHAS. GOODMAN—Breeder of high-class Berkshire Swine. Williams, Cal.

30 REGISTERED BERKSHIRES—Bears and gilts for sale. J. H. Benedict, Lemoore, Kings county.

REGISTERED BERKSHIRES—Bred sows. Also a few gilts. G. E. Sheldford, Healdsburg, Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

BERKSHIRES—Carruthers Farms, Mayfield, Cal. Second annual sale, August 1, 1917.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

Duroc-Jerseys.

DUROC JERSEYS—My hogs were highest honors at State Fair, taking first prize herd, first prize sow, second prize boar. Were the largest of their age exhibited. Stock all ages for sale. Prices reasonable. Breeding and satisfaction guaranteed. Haden Smith, Route 1, Box 84D, Woodland.

DUROCS from River Bend Farm, St. Helena, Cal., are large type, smooth, rangy, with fine backs and deep cherry color. We sell only those we'd like to keep in our herd. Don't write us if you want cheap stock.

DUROCS and BERKSHIRES for sale, reasonable. First premium Berkshire boar and 3rd on Duroc, the only two hogs we entered State Fair, 1916. Perkins & Co., Perkins, Cal.

RANCHO RUBIUS DUROCS—A few choice gilts bred for October farrowing; also good service boars, tried sow and weaned pigs, priced right. Elmer Lamb, Ceres, Cal.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money makers. They grow faster. New England California Corporation, Ripon, Cal.

DUROC JERSEYS—Herd boars. E. N. Colonel and Tulare Boy. Sweetest stake winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

DUROC-JERSEY SWINE—Bred gilts, open gilts, one good service boar and a few young boars for sale. T. J. Walker, Perkins, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes, Big-boned type. B. F. Kendall, Hardwick.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. E. H. Boulder & Son, Napa.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High class pure-bred hogs, both sexes, any age.

REGISTERED DUROCS from best Eastern blood lines. S. S. Southworth, Napa.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROC JERSEY SWINE—Frederick M. Johnson Napa, Cal.

REGISTERED DUROCS—All ages. Either sex. W. A. Pack, Hollister, Cal.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

Other Breeds.

BILLIKEN HERD OF IMPROVED CHESTERS—Prize winners at the State Fair. The Farmer's Utility breed. Size combined with quality; producers of big uniform litters of growling pigs. 15 bred gilts due to farrow in Jan. boars and sows of spring farrows; first class and extra well developed; best blood lines obtainable; prices reasonable and every one cholera immune. Write for special prices and circulars. C. B. Cunningham, Mills, Cal.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co., Inc., 681-697 Brannan St., San Francisco.

LARGE YORKSHIRE SWINE—Gilts to farrow in September and October. Service boars and Spring pigs. Both sexes. Riverina Farms, Paradise Road, Modesto, Cal.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

REGISTERED IMPROVED CHESTER Whites—Grizzly Bear Ranch, East Auburn, Cal.

DAIRY CATTLE.

Holsteins.

FOR SALE—An extra fine lot of 12 Registered Holstein Heifers from 8 to 18 months old. Some are bred to Prince Jahama Walker, a First Prize son of Prince Galscho Walker. Also an extra well-bred Korndyke bull to go with them whose granddam was a former world's record cow. This stock is priced low for a quick sale. Write, or better, come and see them at once. Geo. A. Smith, Corcoran.

REGISTERED HOLSTEIN BULL CALVES—Sired by Lorena Korndyke Alcarra, whose dam made 29.75 pounds butter fat in seven days as a four-year-old. J. M. Campbell, McCalon, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

REGISTERED HOLSTEINS—Have a few Bulls from El Prado Wayne Celantha, whose dams and sire's dams average per cent fat 4.1 years is 6.01. See my stock at the State Fair. J. W. Benoit, Route C, Modesto, Cal.

REGISTERED HOLSTEINS—Sired by King Korndyke Hengerveld Ormsby 53822. Dam Pieterje Maid Ormsby 78061, world's record when made 35.50. Send for pedigrees. Geo. Koumas, Modesto, Cal.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Hixon, Tulare, Cal.

THE MCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

A SPLENDID 8-months-old Holstein bull with good A. R. O. breeding for \$135. K. W. Abbott, Milpitas, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS Corp., Importers and Breeders. Woodland, Cal.

CREAM CUP HEED—Registered Holsteins. Pontiac bull calves. M. Holdridge. Modesto. Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons. Chino. Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin. R. 3. Box 58. Visalia. Cal.

CHOICE HOLSTEIN BULLS for sale. No females. Millbrae Dairy. Millbrae. Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnyside Ranch. Willits. Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse. Route B. Modesto. Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson. Modesto. Cal.

HOLSTEIN COWS for sale with records. Dr. Stelson. Napa. Cal.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman. Route B. Modesto. Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley. Tulare. Calif.

Jerseys.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3 lbs. cows. None better. Cheap for quality. N. H. Locke. Lockeford. Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios. R. 2. Modesto.

VENADERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly record. Guy H. Miller. Route 1. Modesto. Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 300 lbs. butter as two-year-olds. A. A. Jenkins. Tulare.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett. Ceres. Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland. R. 2. Tulare.

YOUNG REGISTERED JERSEY BULL CALVES at reasonable prices. O. J. Ames. Oakdale.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine. Petaluma. Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth. Modesto. Cal.

FRESH JERSEY MILK COWS for sale. E. M. Locke. Lockeford. Cal.

Other Breeds.

GUERNSEY BULL CALVES from Grand Champion Bull. Also Hampshire Swine, both sexes from Grand Champion 700-lb. boar and Grand and Junior Champion Sow. Bella Vista Herd. J. W. Henderson. 1st National Bank Bldg. Berkeley. Cal.

EDGEWOOD FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgewood Farm. Santee. Cal.

BREEDERS OF REGISTERED SHORT-HORNS—Milk strain. Choice young stock for sale. John Lynch Ranch. Box 321. Petaluma. Cal.

WILLOWMOOR AYRSHIRES—Great records; economy. 300 head in herd. J. W. Glise. Redmond. Wash.

INNISFALL DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg. Suisun. Cal.

AYRSHIRES—Registered; all ages. E. B. McFarland. 412 Claus Spreckels Bldg., San Francisco.

REGISTERED AYRSHIRES—All ages for sale. W. J. Domea. McCov. Oregon.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Rambouillet and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

KAUPKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

BREEDER OF MERINO SHEEP—Rams for sale. J. Bidegaray. Fresno. Cal.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshire.

CHAS. KIMBLE—Breeder and Importer of Rambouillet. Hanford. Cal.

HORSES AND MULES.

STOCKTON PERCHERONS again winners at Sacramento. Get next, brother farmer. H. G. Learned. Producer Stockton.

REGISTERED SHIRES—Black Hawk Stock Farm. Importers and Breeders. Easton & Ward. Producers. Burlingame. Cal.

BEEF CATTLE.

FAIR OAKS RANCH WHITS, Cal.—Young registered Shorthorn bulls for sale. Sired by Landover 379318, grandson of Imported Villager 295884.

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Paidnes Ranch Co., 320 Sharon Bldg., San Francisco.

REGISTERED HEREFORDS—H. H. Gable. Diamond G Ranch. Escondido. Cal.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland. Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords. Newman. Cal.

GEORGE WATSON—Breeder registered Herefords. Bishop. Cal.

SHORTHORNS—Carruthers Farms. Mayfield. Cal.

MISCELLANEOUS.

D. O. LIVELY announces a trip East in January to buy pure-bred stock for his own account. Commissions for customers executed with faithful accuracy. A lifetime acquaintance with the leading breeders of the Middle States gives him a special advantage in making selections. Beef cattle, milch cattle, sheep and swine purchased. Write for terms. 216 Hobart Bldg., San Francisco.

CROLEY'S CALF FEED with skim milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

ANNUAL LIVE STOCK SHOW FOR LOS ANGELES.

A movement is on foot headed by Walter P. Story, president of the Sixth District Agricultural Association, looking toward the establishment in Los Angeles of an annual live stock show and fair. At the instigation of Mr. Story, a meeting of 100 leading citizens was held recently in Exposition Park; and after discussion, a resolution was adopted calling on all civic, commercial, and industrial organizations to co-operate with the association in this movement.

Frank Wiggins, secretary of the Chamber of Commerce, advocated the step. He said the wonderful development of the Imperial Valley as a livestock country is again turning attention to stock-raising as a profitable industry.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912.

Of Pacific Rural Press, published weekly at San Francisco for October 1, 1916, in the State of California, County of San Francisco, ss.

Before me, a notary public in and for the State and county aforesaid, personally appeared Frank Honeywell, who, having been duly sworn according to law, deposes and says that he is the Publisher of the Pacific Rural Press, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Frank Honeywell, San Francisco; Editor, E. J. Wickson, Berkeley; Business Manager, Frank Honeywell, San Francisco.

2. That the owners are (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock): Frank Honeywell, San Francisco.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security-holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also, that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

FRANK HONEYWELL.
(Signature of Publisher.)
Sworn to and subscribed before me this 29th day of September, 1916.
(Seal.) C. B. SESSIONS,
Notary Public, in and for the City and County of San Francisco, State of California.
(My commission expires May 26, 1916.)

SAN FRANCISCO LIVE-STOCK EXPORT Co., Eugene R. Croley, Manager, solicits foreign orders for purebred registered and merit breeding animals and fowls. California has great diversity of climatic and other conditions that enable us to select animals that have been raised under conditions similar to those of the location for which they are intended. We should be informed regarding these conditions and be allowed ample time to make selections. Nearly all disappointments in buying afar are the result of insufficient information as to conditions or to lack of time for proper selection. Our plan and terms for "raising animals to order" to fit into peculiar foreign conditions is worth investigating. References: Dun or Bradstreets, or San Francisco banks. Office 219 Underwood Building, 525 Market St., San Francisco.

DUROCS AND GUERNSEY BULL CALVES sired to 900-lb. boar. Ed. E. Johnson, Turlock. Cal.

DOGS.

THOROUGHbred SCOTCH COLLIES—All bred from our noted prize-winners. Have a few 3 months old puppies—very choice. Write us what you want. Browndale Kennels, Redwood City, Cal.

HERE IS YOUR LAST CHANCE

To Order an

Ideal Green Feed Silo

and get it up in time to fill with the last crop of alfalfa, which can be fed out in time to again fill in the spring with the first cutting, which as hay is hardly worth handling, but which makes excellent silage.

YOU CAN THEN FEED SILAGE through the summer and have the silo empty in time to fill with corn next fall.

MANY DAIRYMEN TRIED THIS PLAN last year and saved enough to pay for their silo. You can do as well.

DON'T DELAY BUT ORDER NOW.
If desired, terms can be arranged.

The Light Running

Acme Feed Cutter and Silo Filler

Built in Seven Sizes.

ALL STEEL FRAME
LOW FEED TABLE
MALLEABLE KNIFE HEAD
POSITIVE SAFETY DEVICE



TRIPLE FRAME CONSTRUCTION
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Independent Control of Blower & Cutter Head Speed.

THE ACME ALFALFA MEAL ATTACHMENT

can be fitted to all sizes of Acme Feed Cutters. This attachment will enable the making of an excellent grade of alfalfa meal from alfalfa hay at a cost not exceeding that for baling.

CUT OUT THE MILL FEED EXPENSE BILL

By feeding Silage and Alfalfa Meal made with an Acme Cutter.

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SAN FRANCISCO.

SEATTLE

EVERYTHING FOR THE DAIRY.

THIS IS THE LAST NOTICE

of the

HOLSTEIN BREEDERS BIG SALE

Fair Grounds, HANFORD, CAL.

Wed., Oct. 18, 1916

100 CAREFULLY SELECTED HOLSTEINS

Make your plans to attend this sale if you want **GOOD SOUND YOUNG COWS**, several with official records from 20 to 26 pounds butter in 7 days.

HEIFERS FROM A. R. O. DAMS, several from dams with 24 to 34 pounds, all bred to high record bulls.

YOUNG BULLS with the right type and breeding. Among the lot is a son of a 33-pound cow—a 31-pound cow—a 27-pound cow—a 26-pound cow. Many others from high record dams and all from choice sires.

SALES HEADQUARTERS, Hotel Kings, Hanford, Cal.

F. L. Morris, Sale Mgr.
Woodland, Cal.

Col. B. A. Rhoades, Auctioneer.
Los Angeles, Cal.

A Real Herd Sire

IN MY CONSIGNMENT OF

CALIFORNIA HOLSTEIN BREEDERS' THIRD SALE HANFORD, OCTOBER 18.

Creamcup Pontiac Burke 3rd, sired by Creamcup Pontiac Burke, who has a long list of A. R. O. daughters, and out of the 25.52-pound cow, Damisella Creamcup. A bull I have used as herd sire, of proven merit, a sure breeder and sire of some extra choice heifers I am consigning.

ALEX WHALEY,

Tulare, Cal.

Saves Expense in Modoc County Dairy.

[Written for Pacific Rural Press by W. D. Guthrie.]

It is a common sight to see on our western dairy farms, large milking barns, expensive to build and to keep clean and in repair. The Patterson Ranch at Cedarville, Modoc county, has solved the problem for itself.

They, like many others, put up first a barn that cost close to \$5000. At first, all the milking was done in the old way by hand, but soon it was decided to put in milking machines. The air pipes for milking machines in this barn would in themselves be no small item, so it was decided to build in one end of the big barn a place to milk 12 head at a time, thus eliminating several hundred feet of air pipe.

The following is the way their present system was built, although Mr. Patterson states that they expect later to put up a separate building and use the entire present barn for feeding.

The big barn contained four strings of cows, two strings on each side, facing each other. The new system is installed in the wide space in the middle of the barn.

The milking stalls are 9 feet long and about 3½ feet wide with a stanchion in one end. They were built end to end in two rows of six each, with a four-foot alleyway between. Along each outside edge is also an alleyway, through which each cow reaches her separate stall. The outside of each stall is a bar fixed so it will swing outward from either end. One end is opened to let the cow in; the other to let her out. The cows, as milked, are placed in a

different pen than those yet to be milked. Thus, the cows enter at one end of the alleyway and leave at the other.

The four-foot center alleyway is three feet lower than where the cows stand. This allows the milkers to put the machines on the cows without the usual stooping. Single unit machines are used. As soon as one cow is milked, the machine is put on the cow on the opposite side of the milking alleyway. An attendant then lets the first cow out, and places another in her stall. The machines are not carried. They hang all the time on scales. Thus, it is an easy matter to weigh the milk. A chart is conveniently placed on which the amount of milk may be jotted down. The milk weighing has heretofore been inconvenient with the heavy machine buckets.

Each cow has a number fastened to her neck by a heavy wire. No cow that does not come up to the standard is kept in the herd. An attendant places a ten-gallon milk can beside each milker, into which the buckets are emptied. When it is filled, he removes them. A block with string attached is provided as a signal system between milker and attendant.

The stalls are provided with feed boxes; and if fed grain at all, are fed by the attendant as he places the cow in her stall. A drain is provided for each stall.

The advantages of this method are as noted: inexpensive to build, easy to keep clean, more convenient for the milkers, and most important of all—handy to keep milk records.



Prince Gelse Walker, One of the Greatest and Best Bred Young Sires in the West. A Number of His Sons will be Sold at the First Annual Sale at the Santa Anita Rancho, October 23, 1916.

18-Year Grade Gives 635 Pounds Fat.

[Written for Pacific Rural Press.]

Gold Dust is the record cow in the John Hansen record herd of 80 grade Jerseys. They hold the State record for butterfat production by grade cows, having produced during 1915 an average of over 427 pounds of fat.

The records of the Ferndale Cow Testing Association show that Gold Dust headed the herd with 635 pounds of fat to her credit. Her milk averaged 6.3 per cent fat.

Now the fact that a grade cow would produce so heavily, is in itself an achievement worth recording; but it is still more interesting to know that this cow was 18 years old when she started the year's test.

Gold Dust, according to Mr. Hansen, is the result of a second or third cross of purebred Jersey sires on grade Durham cows. In color she resembles the Jersey. In size she apparently combines Durham characteristics, as she is larger than the other cows in the herd which carry close to 100 per cent Jersey blood. Needless to say heifers out of this cow and sired by purebred bulls are never sold from the Hansen herd.

S. S. Mitchell, whose ranch is on Upper Mill Creek near Healdsburg, has sold a carload of Angora goats to C. W. Burgess near Ione, Amador county.

Insure your feed supply against early frost and rain with

REMCO SILOS

The early cessation of the rains last spring and their unusually early opening this fall should be a warning to all feeders of livestock, especially dairymen, to no longer neglect the addition of silos to their equipment.

It is not yet too late to order a Remco silo to save your crop of corn from the frosts likely to follow the early rains, or to save your last cutting of alfalfa.

A Remco silo is your cheapest insurance against all such losses. Send in your order early and avoid delay.

Redwood Manufacturers' Co.

1608 Hobart Building,

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GRANDSONS OF TILLY ALCARTRA



Prince Alcartra Korndyke, Best bred son of Tilly Alcartra.

At prices within reach of every Breeder and Dairyman.

When you buy a son of our herd sire, Prince Alcartra Korndyke, you get more than a Holstein bull with registration papers—you get a grandson of the world's greatest milk cow out of a high-testing A. R. O. dam. Our herd of females has been developed into one of the best in the State.

Our supply of these young sires is always limited, but we have a few now which we are offering at very reasonable prices.

Write us at once, or call and see the herd.

J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

Get This Holstein Family

—at—
CALIFORNIA HOLSTEIN BREEDERS' 3rd ANNUAL SALE
Hanford, October 19.

Rose De Oro Sarcastic, Senior and Grand Champion Cow, 1916 Kings County Fair, her dam Copo De Oro Winfried Dalo, two of her sisters, one of which was first in junior yearling heifer class at Hanford and a half brother of sterling quality.

A FOUNDATION HERD

Of Winners in the Show Ring and at the Fair.

Consigned by

STRATFORD DAIRY FARM,

T. J. Gilkerson, Prop.

Lemoore, Cal.

HOPLAND STOCK FARM REGISTERED SHORTHORN BULLS

REGISTERED BERKSHIRES (Boars, Bred Sows and Gilts)
HERD BOAR, ROYAL POINTER 2nd, 197092, First Prize
Senior Yearling, P. F. I. E.
3 REGISTERED HOLSTEIN BULLS from High-Testing Cows.
SAN FRANCISCO OFFICE. 1210 FLOOD BLDG.

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Send for Sensible folder on feeding hogs

Western Meat Company

Animal Food Dept. 704 Townsend St., San Francisco

State Swine Breeders Meet.

[Written for Pacific Rural Press.]

Greeted by Kings county people in a manner that could not be excelled in cordiality and good fellowship, the California State Swine Breeders' Association held their fourth annual meeting at Hanford, October 9.

The night before an elaborate banquet, attended by close to 175 persons, was tendered by Kings county boosters to visiting members. Addresses were made principally along marketing lines by W. E. Hough of San Francisco, H. L. Kelley and Frank Hauser of Los Angeles, D. O. Lively and J. L. Thatcher.

At the day meeting following the banquet, the market situation was still further discussed, the packing house representatives maintaining that there is not as yet in California a sufficient number of farmers who breed good hogs and then feed them properly. As a result of this they say they are unable to pay as high prices as are paid by the Eastern packers.

This point was again made by

Frank Hauser in comparing a grade hog with a purebred that was on exhibition at the fair grounds. There he showed how the purebred had less waste and more high-priced meat than the grade, which naturally allows the packer to pay more money for him.

Despite these arguments, the feeling was prevalent among growers present that there is something radically wrong with present marketing facilities and this was strongly brought out by Chas. Kimble and others present. The meeting undoubtedly accomplished much good as it brought grower and buyer closer together than they have been in the past.

At the request of delegates from southern California it was voted to hold next year's convention at Los Angeles, where it is planned to hold a swine show in connection some time in January. The packers present promised to give their support to the convention and help in entertaining visiting delegates.

NEVADA GETTING GOOD PUREBRED COWS AND HOGS.

[Written for Pacific Rural Press.]

[Note.—One of the few purebred livestock breeders, and one to whom everyone refers as one of the most progressive breeders of Holsteins and Poland Chinas in Western Nevada, is Dr. E. H. Hawkins, of Gardnerville. We asked him to give us the breeding of his stock and we print most of it below in his own words.]

I started my present herd of purebred Holstein-Friesian cattle by purchasing a bull calf,—Prince Gem Pontiac de Kol—from A. Jensen, Gardnerville, Nevada, April 10, 1914. I then bought two bred heifers from Chas. L. Fulstone, Carson City, Nev., Jan. 7, 1915. Since that time, I have been gradually increasing my herd, and today have twenty-one purebred females and three bulls.

My foundation cows are, Maud F. 3rd, 13 years of age. She made in Jan. 1916, butterfat, 14.936 in seven days.

The three following cows are her daughters. All have seven-day records and are on semi-official test: Lena De Kol Maud made 14.784 lbs. butterfat in seven days; Queen Maud Pauline made 8.675 lbs. fat as a two-year-old; not fitted; Lady De Kol Maud made 11.749 lbs. in seven days without any preparation.

Gem Beauty De Kol made 12.554 lbs. in seven days, but if she had been handled right, should have made at least twenty pounds. Holland Cayvan De Kol made 19.29 lbs. butterfat in seven days, and is now on semi-official test. She will make a thirty-pound cow.

I have recently purchased Gem Pontiac Ruby Burke De Kol, Holland Pontiac Burke De Kol, and Holland Pontiac De Kol, from William Gray of this place. They will freshen in the spring.

The herd also includes 10 heifers and heifer calves of high pure breeding.

I have recently purchased the bull, King Pontiac Ruby Burke 2nd,

and will put him at the head of the herd. Pontiac Burke De Kol will be my junior sire. He is a very promising calf, with some great blood lines behind him.

The Poland Chinas include the Big Type herd sires Joe Model and Big Joe's A Wonder Look. Joe Model weighs 500 pounds now at 1½ years old; and some of the sows of the same age weigh about the same.

There are nine brood sows of Wonder, Joe, Blue Valley, and Timm blood and a couple of young boars sired by Blue Valley and Big Timm. Blue Valley is a 1000-pound hog and his Nebraska owners refused \$1000 for him. Big Timm was Champion of Nebraska last year and weighed 1125 pounds at the time.

W. E. Premo of Porterville is fattening a few baby beeves.

Second Semi-Annual Sale

KINGS COUNTY POLAND CHINA BREEDERS ASS'N.

Will Be Held at the County Fair Grounds, Hanford, Cal.

Thursday, October 19, 1916

On this date there will be 150 head of
REGISTERED POLAND-CHINAS SOLD,
consisting of

Bred Sows, Bred and Open Gilts and a number of High Class Boars

Some of the best animals from the leading herds of Kings County will be sold without regard to price or value. The sale will be absolute and without reserve. Sale under cover, and will be held, rain or shine.

CONSIGNORS:

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Hanford, Calif.

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Low-priced, fresh, reliable; preferred by western stockmen, because they protect where other vaccines fail.
Write for booklet and testimonials.
10-dose pkg. Blackleg Pills, \$1.00
50-dose pkg. Blackleg Pills, \$4.00
Use any injector, but Cutter's simplest and strongest.
The superiority of Cutter products is due to over 15 years of specializing in VACCINES AND SERUMS ONLY. INSIST ON CUTTER'S. If unobtainable, order direct.
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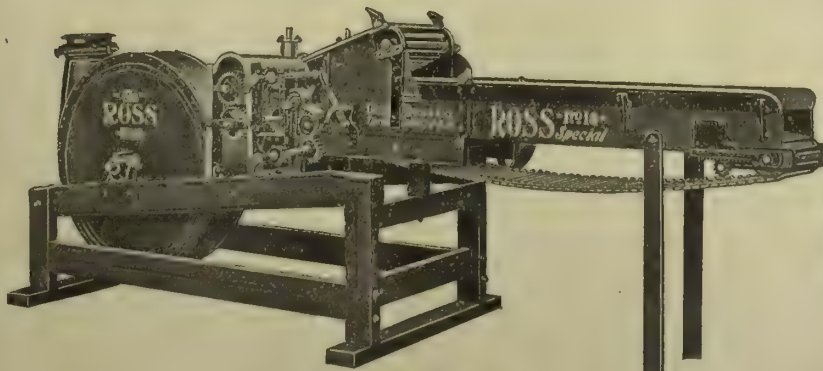
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will reduce inflamed, swollen Joints, Sprains, Bruises, Soft Bunches; Heals Boils, Pock, Evil, Quittor, Fistula and infected sores quickly as it is a positive antiseptic and germicide. Pleasant to use; does not blister or remove the hair, and you can work the horse. \$2.00 per bottle, delivered. Book 7 M free.

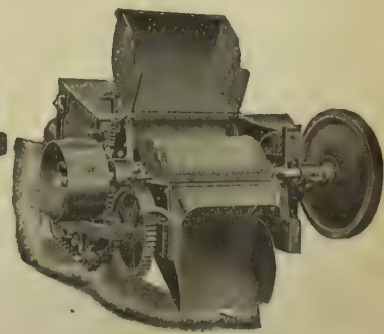


ABSORBINE, JR., the antiseptic liniment for mankind, reduces Painful, Swollen Veins, Wens, Strains, Bruises; stops pain and inflammation. Price \$1.00 per bottle at dealers or delivered. Will tell you more if you write. Liberal Trial Bottle for 10c in stamps.
W. F. YOUNG, P.D.F., 86 Temple St., Springfield, Mass.

ROSS SILO FILLERS With Alfalfa Grinding Attachment



No. 16 Ross Cutter with Compression Web.



The Humphreys Patent Alfalfa Grinding Attachment.

The Humphrey Patent Grinding attachment illustrated above is the latest addition to the Ross line. By its use a merchantable alfalfa meal can be produced at a minimum cost. Furnished with license plate releasing purchasers from all liability under patent infringement suits.

A minimum amount of power is required, and we guarantee greater capacity for the Ross line, either with or without the Grinding Attachment, than any other make of feed cutters.

The most complete line of all sizes and styles carried in the Pacific Coast.

WRITE FOR COMPLETE SILO FILLER CATALOG.

Parlin & Orendorff Co.
Portland, Ore.

Baker & Hamilton,
San Francisco, Cal.

Dixon & Griswold,
Los Angeles, Cal.

Good Stock Show at Hanford.

[Written for Pacific Rural Press.]

Hospitality, despite weather such as no California fair directorate has had to contend with, was the shining light at the Fourteenth Central California Fair held at Hanford last week.

Livestock was featured as has been the custom and previous to the opening of the gates on Tuesday the barns were full mostly with dairy cattle and swine many of which had become veteran winners at all of the 1916 shows, and these together with a strong showing from local herds combined in making a show of sterling quality.

The final lineup showed that Poland China hogs were in the commanding position largely due to the strength which that breed rightfully claims in Kings county. Surprises were frequent in the judging of this breed, the judge, A. L. Nelson of San Luis Obispo, placing the aged sow Silver Ruth, owned by Ross, in the Grand Championship class over a strong lot of females, and running the under year boar, Chief's Victor, shown by Bassett, into the Grand Champion boar honor after a combat with Long Nelson 2nd, first in the aged boar class shown by Trewhitt. Exhibitors were F. D. Ross, M. Bassett, W. D. Trewhitt, T. J. Gilkerson, H. I. Marsh, J. A. Crawshaw, Wm. Bernstein.

Durocs were shown by J. E. Thorp, Tagus Ranch, L. D. Collins, O. and C. Dimmick, J. K. Fraser. Repeating their previous performance all along the circuit, California's Defender shown by Fraser and Long Wonder's Queenie by Thorp, were outstanding winners of grand championship in boar and sow classes respectively.

Berkshires were shown by Normandy Farm and H. L. and E. H. Murphy, the Murphy herd carrying off grand championships in both male and female classes with Rival's Robinhood 2nd as the leader of the boars and Gay Princess 4th supreme among the females.

It was nip and tuck between the Holsteins and Jerseys as to which would lead in numbers in the dairy division with honors about even.

Of the two, Jerseys made a more consistent showing as their classes from top to bottom were more highly contested. From the start E. L. Westover of the Cal. Polytechnical College, who did the judging, showed a decided preference for the large rugged American type, picking the aged bull Borello Golden Laddie for first in class and later for grand championship. In the female cham-

pionship the heifer King's Carnation of L., also of the Locke herd, went above Valet's Foxy Blondy of L. in her class and finally above the aged cow Valet's Violet of L. for championship. Exhibitors were N. H. Locke Co., S. F. Williams, A. A. Jenkins, C. T. Star, R. E. Shore, J. E. Thorp, E. H. Church and Dr. Frank Griffith.

Holsteins were shown by T. J. Gilkerson, Tagus Ranch, F. D. Ross, Buena Vista Ranch, G. U. Clark and L. Y. Montgomery. Lack of fitting in this division held some nicely bred animals in the lower end of the line and some of the tops could have stood more bloom. Rose De Oro Sarcastic, an aged cow shown by Gilkerson, had an easy time of it in class, but was pushed for grand championship, which she finally won, by the junior champion heifer, Hazelwood Mercedes Ormsby Posch. The latter is of fine type but lacked somewhat in ruggedness for the purple ribbon. Her stable mate, River-view Bracelet Britt, was first in his class and later secured junior and grand champion ribbon for males.

A nice Ayrshire show was made by Steybrae Farm and Shorthorns were exhibited by Murphy Bros. A good jack and jennet show was staged by Jas. McCord and John Burrell, the former also exhibiting Shires without competition. The Tagus Ranch showed some of their newly acquired Percherons and Belgians, having to give way in the former division to Bassett, who showed the aged stallion Ithos with success.

BIG POLAND CHINA SALE AT HANFORD.

[Written for Pacific Rural Press.]

With consignments from all of the older and more important Poland China herds in Kings county at their disposal the managers of the second annual sale of the Kings County Poland China Breeders' Ass'n have catalogued what is undoubtedly the largest choice lot of Poland Chinas ever offered, for their sale October 19 at Hanford.

For several months preparations for this sale have been under way, breeders withdrawing from the market many outstanding animals in order that their consignment might be first class in every respect.

The tabulated pedigrees, which may be found in the catalog just issued, show a variety of breeding strong in the blood of show ring winners and this combined with the

good reputation of the breeders consigning insures the buying public a wonderful opportunity for the purchase of purebred hogs.

The association has made arrangements for a banquet to visitors, the night preceding the sale

and will do everything possible to insure visitors a joyous time.

Louis Hestorff of Salinas recently shipped from Rosewood, near Stockton, 176 head of fine horses to Denver, Colo.

AUCTION



750 Horses and Mules

OCTOBER 19-20, 1916

By order of the E. Clemens Horst Company, we will sell five hundred horses, weighing from 1000 to 1400 pounds, and from three to six years old. Many are broken to saddle and harness. Also two hundred and fifty mules, seventy-five being two-year-olds, the balance from three to five years old. A large percentage of this young stock was raised by the Horst Company on their ranches in California and Oregon, and must be sold on account of being overstocked. A part of both the horses and mules will be graded and sold in carload lots.

Sale takes place at the Horst Company's ranch, three miles from Wheatland, Cal., at 10 a. m. Thursday and Friday, Oct. 19th and 20th. Autos will meet all trains, and buyers from a distance will have stock loaded on cars free of expense.

W. H. Hord & Sons

AUCTIONEERS

703 MARKET STREET,

SAN FRANCISCO.

Grand Leader 2nd again shows Himself a Wonderful Breeder



at the 1916 California State Fair the following prize-winners were sired by the World's Fair Grand Champion Berkshire Boar:

GRAND CHAMPION SOW (which later sold in the Congress Sale for \$500—the highest price ever paid for a California bred Berkshire).
GET OR SIRE—(The most sought-for prize among breeders).
FIRST PRIZE AGED SOW—**FIRST PRIZE SENIOR YEARLING**—**FIRST PRIZE JUNIOR YEARLING**—**SECOND PRIZE UNDER-YEAR SOW**. He is also the sire of **PREMIER LEADER**—Champion at the Stanislaus Livestock Exposition 1916.

STOCK OF ALL AGES FOR SALE.

GRAPEWILD FARMS

ESCALON,

San Joaquin Co., Cal.

A. B. Humphrey,
Prop.

(Escalon is 22 miles east of Stockton on the Santa Fe; also on the Tidewater Southern Electric Railway. Autos take paved Mariposa road direct to Escalon.)

BASSETT'S POLAND CHINAS



GRAND CHAMPION SOW,
P. P. L. E. 1915; Sacramento 1916.

For many years, at widely separated show rings, under many different judges of varying type ideals, my Poland Chinas have been consistent prize-winners. My herd is large, and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished. Young Stock, \$30 Up.
M. BASSETT,
Rr. 1, Hanford, Cal.

Mrs. Best's Letter.

My Dear Friends: Now at the first rain, we all think of shoes, rubbers, coats and umbrellas that have been forgotten during the summer months. Shoes particularly present themselves, for a perfectly good pair except for a wee hole in the sole seem suddenly old. White shoes and low shoes too seem woefully out of place and the school girl thinks of her elkskins in the closet or a pair she has contemplated as a necessity.

High boots, lacing up securely around the calf of the leg, with heavy soles and flat heels, when well-oiled are a comfort to any woman who has to be out in all kinds of weather and who dislikes the very inconvenient rubber. These boots wear and wear, standing many resolings and hard usage. One can wear them for tramping boots in the summer and for all kinds of wear in the winter if well oiled.

If for any reason, you feel you must have rubbers, the toe rubber that snaps on with a rubber band is much the most comfortable to wear and except for wading in mud answers every purpose. They last better than the old type, for usually it is the heel of a rubber that breaks first.

For dress shoes, the colored tops, fancy stitchings and strapped toe are as popular as they were in the summer and more so for many people, for they are now shown in a comfortable low heel accompanied by no loss of style.

The dressy slipper for evening wear is still high heeled—the flat heeled satin and kid slipper so popular two winters ago seems to have been forgotten by Dame Fashion, perhaps because being sensible all day in Kozy Klogs has a reaction in the frivolous dressy pump of the evening.

The general style of the smart appearing button or lace boot, pumps or slippers is flat, long and narrow and the woman with a short, plump foot has hard work to be in style.

Rosabella Best.

HALLOWE'EN.

One of the easiest and most informal times to have a party for either grown-ups or children is Halloween. Decorations are so easy to acquire, corn stalks, pumpkins and autumn leaves being the popular ones. Refreshments are simple and all the time-honored games like apple bobbing, throwing apple peels, catching an apple in the teeth, nut burning and the like are still popular and never lose their delight and charm.

If there is an open fireplace, popping of corn, and roasting of apples and chestnuts is an interesting occupation. With these have a dish of home-made candy. The delight of a Halloween party is in its informality and good cheer.

Clocks for the home are much smaller and less ornate, many of them set in simple mahogany cases.

Mirrors are very good style—any shape is good if the frame is simple.

Scrim and marquisette have very largely superseded net for curtains in moderate homes.

THE HOME CIRCLE

HOUSEHOLD RECIPES.

Grape Ketchup.—Three quarts of grapes, stemmed; two pounds of brown sugar, two cups of vinegar, one teaspoonful of cayenne pepper, two tablespoonfuls each of ground cinnamon, cloves and allspice and one tablespoonful of salt. Cook grapes, run through colander to remove seeds, add sugar, vinegar and spices. Boil until it thickens and seal while hot.

Grape Conserve.—Stem and seed white Muscat grapes and cook slowly until thick. Then add three-quarters of a cup of sugar to each cup of pulp and cook until it glazes or is reasonably solid. After it is cold add the broken meats of walnuts and put away in glasses or jars. Seedless grapes can be used, but being a little more watery, require more cooking. This is delicious with hot muffins or biscuits.

A Hallowe'en Cake.—For your Hallowe'en cake use as large a pan as you can procure with the hole in the center as for fruit cake. Make a simple cake batter and fill it with all sorts of small favors, as many as you have guests. These, beside the conventional trinkets for birth-

day cakes, should be toys that predict the future, as tiny boy dolls for a husband; a miniature automobile or airship to show such luxuries are coming; a pair of handcuffs, meaning jail; a ship, a trip abroad. Each favor is wrapped in paraffine paper and should contain a printed fortune.

When the cake is cold, ice with a bright orange icing and on the top and sides make witches, cats, crescents and bats from a dark chocolate frosting. The figures can be cut from paper and the outline marked with chocolate, later filled in.

When on the table, put a thick candle, either black or orange, in the hole in the center of the cake with a witch shade on top. As the cake is cut and served each one must read his future aloud. A very clever fake cake can be made by frosting a round hat box and decorating it with yellow jack-o'-lanterns and witches. It can be filled with small decorated cakes or with favors suitable to the occasion.

An empty baking powder can, with the top bent to a sharp angle, is fine for melting and pouring paraffine.

A pint pitcher is a handy filler for fruit jars.



Hang Out A Line Of Holeless Hosiery

When you hang up the stockings on wash day and find them hole-worn and torn, you realize that instead of your well-earned rest, you have an evening's darning ahead of you. There's no need of so much darning. Buy Durable Durham Hosiery for the whole family, and on wash day you'll hang out a line of holeless hosiery.

DURABLE DURHAM HOSEIERY

FOR MEN, WOMEN AND CHILDREN

is made right in the heart of the cotton district from the best yarn we can make. It has heavily reinforced heels, toes and soles—always fits snug after every washing, and the tops can't be jerked from the bottoms. Every pair is made strongest where the wear comes hardest.

Our location, economical manufacturing conditions, and the fact that we are the largest manufacturers of this class of hosiery in the world, enable us to sell superior hosiery for the low price of 10, 15 and 25 cents.

For best wear, buy
Durable Durham
25-cent Mercerized
Hosiery.

Durham Hosiery Mills
Durham, N. C.



Floral Department.

[By Geo. N. Tyler.]

Pelargoniums that are in pots and were cut back severely, in late August and early September will have made breaks or new growth about an inch long by this time. Knock them out of the pots and shake off all the old soil, prune back the straggly roots, and repot in pots one or two sizes smaller than they have been growing in. If in six-inch, pot in four; if in four, pot in three-inch. For pelargoniums use a good fibrous loam, with no manure added. Manure makes a long jointed soft growth. If you use any fertilizer, try bone meal, a five-inch pot full to a barrow load of soil. If your loam is too heavy add one-fourth fine sand or fine gravel. In potting press them firm, giving thorough drainage.

Chrysanthemums are now showing color, these early rains have spoiled a great many blooms. You can save a great many by shaking the water out of the half-expanded flowers as soon as it clears off. Diabroticas are very destructive to the mums, dahlias, and most all of the fall flowers. They seem to be more plentiful this fall than I have ever seen them. About the only thing you can do is to go over your blossoms two or three times a day and hand-pick them, dropping them into a can in which there is an inch of coal oil. Diabroticas look like lady bugs, but they are green covered with black spots, and are very destructive.

Carnations.—If you have a warm window or small greenhouse you can pot up field-grown carnations for winter and early spring bloom. Pot them in six-inch pots, using a rich compost, with one-fifth sand added. After potting and watering put in a shady place, free from draughts, for a week or ten days. Spray the foliage once or twice a day for a short time to prevent wilting. After they have recovered from the transplanting give them full sun and never let them dry out at the root. You can also plant them in boxes six inches deep and eight inches wide and as long as you wish.

The best varieties for winter blooming are Enchantress, light pink; Enchantress supreme, light pink with a tinge of salmon which prevents it from bleaching in the sun. White Enchantress, White Wonder, rose pink Enchantress, Mrs. C. W. Ward, rose pink, Benora variegated. These are all florists' forcing varieties and are fine winter and spring bloomers. Use lime in your compost for carnations.

THE RURAL HOT LUNCH.

The North Dakota Agricultural College has issued a new bulletin on the Rural Hot Lunch. This discusses the preparation and serving of a hot lunch in a rural school and points out the physical benefit to the children as well as the Domestic Science Training. If the planning of one hot dish a day seems too much for the teacher to assume, it is suggested that the mothers of the district would organize and plan the work from two to four weeks in advance. This would mean not only deciding upon the dish to be prepared, but the ingredients necessary and the quantity required.

GREEN HILLS AND WINDY WAYS.

Give me green rafters and the quiet hills
Where peace will mix a philter for my ills—
Rafters of cedar and of sycamore,
Where I can stretch out on the fragrant floor.
And see them peer—the softly stepping shapes—
By the still pool where hang the tart wild grapes.

There on the hills of summer let me lie
On the cool grass in friendship with the sky,
Let me lie three in love with earth and sun,
And wonder up at the light-foot winds that run,
Stirring the delicate edges of the trees,
And shaking down a music of the seas.

—Edwin Markham.

THE JOKE ON ELLEN ANN.

"In a tin pail!"

Cicely's voice was so astonished and horrified that it made mamma laugh.

"A nice, shiny tin pail," she amended. "Come and see your face in it. And that isn't all there is in it, either!"

There were crinkled tarts and delicate sandwiches and a little golden cup-custard, with one of Cicely's little silver spoons to eat it with. There was a twisty doughnut that looked like a man, and a little, round pie with C pricked into the crust.

"The inside's nice," admitted Cicely, admiringly. "But must I take it in a tin pail, mamma? I'd rather come 'way home—yes, I would—every single step! Nobody else but Ellen Ann Tibbetts carries a tin pail, and the boys all laugh at Ellen Ann. And, oh, dear, that pail is 'actly like Ellen Ann's, mamma! Hers is shiny, too."

Mamma was fitting on the cover. She looked rather sober now.

"A little girl who loses her pretty lunch-basket must carry her dinner in a tin pail, or—go without," she said gravely. "And maybe it will be good for her to learn how little Ellen Ann feels to be laughed at."

"I never laughed at her,—honest, mamma—'cept up my sleeve."

"Well, maybe now you won't laugh even there, dear. Now kiss me, and off with you!"

It was a beautiful morning, with sunshine enough in it to make two days. The pail-cover jingled a jolly little tune as Cicely walked; and the sun caught the shiny surface of it, and made it look like a silver cover.

Half through the morning somebody came for Ellen Ann Tibbetts to go right home, as her mother was sick. So there was only one tin pail in the dressing-room at noon recess. That comforted Cicely a good deal; for it would have been dreadful to see Ellen Ann eating out of a tin pail just like hers!

She took her shiny pail, and went out into the sunshine with it, thinking how "delicious" mamma's custard would taste, and how—

"Why!"

Cicely almost dropped the pail, but it wouldn't have spilled much if she had. It was nearly empty! There wasn't any custard or any silver spoon to eat it with! There wasn't any little round pie, with C on the cover! There wasn't anything, except just two lonesome

biscuits sliding round in the bottom!

"Why!" Cicely cried over again.

Then she knew what it meant. This was Ellen Ann's shiny pail. Ellen Ann had carried hers home.

"Well, she's mean!" cried Cicely, hotly. "I hope my custard an' my 'initial pie'll choke her—'most! Yes, I do! I'm most starved to pieces, and she didn't even leave any butter on her old biscuits!"

She went off all by herself, to be cross and hungry. It was ever so long before she would be sensible and stop trying to believe Ellen Ann had done it just to play a mean joke on her. It was ever so long before she took out the poor little butterless biscuits and looked at them pityingly.

Was that what Ellen Ann ate for lunches? And not any butter on 'em at all? Didn't she ever have any custards or tarts or twisty doughnuts? And never any little thin slices of pink ham in between?

It made Cicely so hungry to think about little thin slices of pink ham that she took a nibble of Ellen Ann's biscuit. Then she slowly dropped it back into the tin pail. Cicely would rather go without any dinner than eat bread without a speck of butter on it.

Poor Ellen Ann! Cicely hoped she would like the custard and the crinkly tarts,—yes, and even the initial pie! She suddenly remembered that Ellen Ann's father was an invalid, and Ellen Ann's mother "took in" house-cleaning and things.

And the patched places in Ellen Ann's clothes,—Cicely remembered those, too.

On the way home from school, what should peep out at Cicely from the bushes beside the "Half-way Spring" but a dainty little red-and-white lunch basket! Just where she'd left it to hunt for water-cresses!

She carried it home to mamma.

"But I want the tin pail, too, tomorrow, mamma—this tin pail. I'm going to play a joke on Ellen Ann Tibbetts," she said. And then she whispered to mamma, and mamma nodded to her. And the next day two dainty lunches went to school with Cicely, and one of them was in Ellen Ann's shiny tin pail.—Young People's Weekly.

Dirt and disease have something more in common than an alliterative affinity.

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Before you buy any Engine—Read my Book, "How to Judge Engines." Tells how to distinguish a High Grade Engine by the difference in cylinders, pistons, valves, ignition, etc., with less cost for fuel, up-keep and repairs. Book Sent Free together with my LOW FACTORY PRICES and Easy Payment Plan. "Built by Experts" 90-day trial offer, etc. Address

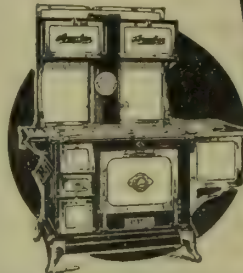
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A Watch-It-Get'-Em

Ant Destroyer—is slow acting—does not kill instantly, but gets the nest as well as the parent. Does not lose strength. Positively non-poisonous—no danger to children, house pets, or foodstuffs. Send 6c for trial can. Ask your neighbor. She uses it. At your dealer. Accept no substitute. DEPT. P. 19 to 25 MINNA ST., S. F.

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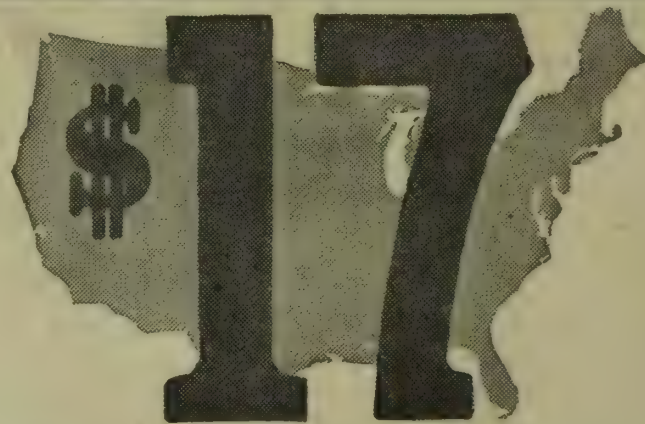
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No bolts to loosen in the Arcadian, or stove putty to crumble, both of which let in false drafts, and spoil baking ability. The Arcadian saves 1/3 your fuel bills, and stays a perfect baker always!

Arcadian
Malleable Charcoal
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It's the Flashing Beauty of Ranges Send for Free Book showing the inside secrets of range building. This book shows you how to judge range values, so you can select your range on true worth.

ARCADIAN MALLEABLE RANGE CO. Milwaukee, Wis. Dept. 19



This is Styleplus Week from Maine to California!

Styleplus Week from coast to coast, the country over! The week when the live-wire, hustling merchants are putting Styleplus suits and overcoats in their store windows for you to admire! The week when the up-and-doing men of the nation are buying their new winter clothes—Styleplus at the attractive and easy price—\$17. The price \$17 for such splendid fitting, splendid wearing clothes has always been remarkable. But right now it is an achievement without a parallel.

All wool or silk-and-wool fabrics in the latest attractive shades and patterns. The foundation (canvas and haircloth) is thoroughly shrunk in water for twenty-four hours. Fine substantial linings. Hand-tailoring in all the vital parts. Only silk thread is used throughout. A corps of famous designers fashion the models. Here are clothes of remarkable style and value, covered by a guarantee that makes you sure your money's safe! Visit the Styleplus Store today.

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HENRY SONNEBORN & CO., INC. Founded 1849 Baltimore, Md.

Good Health.

[By H. E. Pastor, M. D.]

Is Facial Expression Altered by Food?

The Daily Mirror of London declares that the human face is altered by the food we eat. If the writer had drawn on his observation instead of his imagination he might recall that children of the same family dining at the same table every meal for years, are not alike in facial expression. Of two sisters one may be sweet-faced the other sour-visaged; one a blonde, the other a decided brunette; one may be florid and robust, the other pale and anaemic; one will persist in remaining pudgy on a diet of stewed prunes and weak tea, and the other remain as thin as a tin shingle on a full diet of roast beef and plum pudding. The sheep and the hog graze in the same pasture; one grows wool and the other grows bristles. You can't make a black man white by feeding him skim milk, not a white man black by feeding him blackberry juice. Food is doubtless a modifying factor in altering physical expression, but a very small one compared with such determining factors as heredity, temperament, environment, etc. It is rank absurdity to talk of a "starch chin," "tea-drinker's teeth," "potato lip," etc. "Man is what he eats," the writer goes on to say. This claim is about as sensible as the claim made some years ago that music was capable of expressing every emotion, thought, and idea that language could. Ambrose Bierce, then writing for the San Francisco Examiner, said if that were true you might play the History of England on a piccolo. If these food faddists are correct, and a man aspires to be an Apollo, a Solomon, or a Michael Angelo, all he would need to do would be to pick out the right articles on the bill of fare. For science "as she is taught" the average daily newspaper contributor is in a class by himself—and herself. Some people become so hypnotized with a good idea that they let it run away with their good sense.

The Mineral Salts and Growing Children.

Last week a few words were said in this column on the value of certain mineral salts in bone-building in infants and young children. In this paragraph a few suggestions are offered as to the best way of obtaining these salts and of administering them where there is an obvious deficiency. It is said that the mother's milk is a perfect food for the suckling infant—and it is if the mother is in perfect health and is properly nourished. Unfortunately such is not always the case, and baby suffers in consequence. Or, perhaps, for one of several reasons, baby may have been brought up on cow's milk, which is not identical with the human secretion, and unless this substitute is properly modified, it fails to supply all the necessary elements of nutrition. Such a milk diet should be supplemented with one of the cereal foods, containing certain mineral salts which milk alone will not supply. Also, it should be noted, phosphate of lime, mentioned last week as being so im-

portant to bone formation, cannot be appropriated by the human system in its inorganic form, but must be organically bound up with food materials to be available for tissue-building in the child. The same may be said of the salts of iron, a natural constituent of the blood, for lack of which many babies and young children fed on a milk diet alone become pale and puny. Milk is deficient in iron. The best mode of administering these all-essential salts is in foods which chemists have shown us to be especially rich

in them. Foremost among these this writer would place the orange, about a teaspoonful of the juice for young children, either pure or diluted with a little water. Besides iron, the orange contains the salts of phosphorus, potassium, calcium (lime), and sodium, all of which serve a useful purpose in the human economy. Pears, apples, plums, cherries, apricots and figs also contain more or less of these salts, but none are so bland or so easily assimilated as the juice of the orange which, besides supplying these in-

dispensable salts, is antiseptic and antiscorbutic. Of the cereals, barley, oatmeal, or rice are to be preferred for growing children and in the order named. Of vegetables, rhubarb, celery carrots, onions, and potatoes fed in small amounts are all good, but the individual requirements and the idiosyncrasies of each child should be carefully studied and the dietary arranged accordingly. Study food values carefully and you will have less sickness in the family and fewer doctor bills.

We Must Add \$175 to the HUDSON SUPER-SIX

Here is an issue which we can't evade. So we meet it fairly and frankly, but give you a full month's warning. Every Super-Six will be sold at present prices while they last. If you can get one, get it.

The Super-Six of the present series is built from materials contracted last year. There are only 3500 more to go out, including open cars and enclosed. And part of them are sold.

The next production—starting December 1—will be like the present models. The changes, if any, will be only minor refinements. But materials for that series were contracted this year, and at prices enormously advanced.

So the cars now in process are the only Super-Sixes we can deliver at the present Hudson prices. The advance will be \$175 per car.

No Way Out

Most people know that Hudson profits are amazingly low for our output. Here is the top-place car—the largest-selling fine car in the world with a price above \$1100. Yet it sells way below some fine cars. Still our standards are so high that, despite our big output, profits are very small.

Now these high-grade materials, in one year, have enormously advanced. We must either adopt lower grades of materials, or add the advance to our price.

There is no other way out for fine-car makers whose profits have been fair. This enforced raise means no greater profit to us. So we frankly state the facts.

We shall continue the present-grade Hudson. Next year's models will be the same as this year's; save perhaps in some minor refinements. There will positively be no change in the Super-Six motor. So the added cost—and that alone—will be added to our price.

Good News for Owners

This will be good news for owners. About 25,000 have, or will get, Super-

Sixes at present prices. With this patented motor, where wear and friction are almost eliminated, depreciation is a trifle. And like cars, of the next production, will cost a great deal more. So a Super-Six can be bought now at a saving of \$175.

We have under way of the present production about 3500 cars. Part are open models, part enclosed. Many of them are sold.

But many Hudson dealers, suspecting the advance, have unsold Super-Sixes. If you get one now, you will save \$175. For all Hudson dealers will advance the Super-Six when we start production of the next series.

If you can get one now, go get it.

Next Year's Ruling Car

Next year, as this year, the Hudson Super-Six is certain to hold its supremacy. The Super-Six is controlled by our patents—the motor which added 80 per cent to efficiency. So other cars can't use it.

The Super-Six now holds all the worthwhile records. All the world's stock car records up to 100 miles. It holds the 24-hour record of 1819 miles. It won the Pike's Peak hill-climb—the world's greatest event of its kind.

In September it won the ocean-to-ocean record. It went from San Francisco to New York in 14 hours 59 minutes less time than the next best record.

It won all these records because of endurance. Because this invention has so nearly eliminated all friction, vibration and wear.

So every man who knows the facts must concede the Super-Six supremacy. Every test has proved it. If you want such a car—even for next year—now is the time to get it, if you can.

Phaeton, 7-passenger . . . \$1475
Roadster, 2-passenger . . . 1475
Cabriolet, 3-passenger . . . 1775

Touring Sedan \$2000
Limousine 2750
(Prices f. o. b. Detroit)

Town Car \$2750
Town Car Landaulet . . . 2850
Limousine Landaulet . . . 2850



HUDSON MOTOR CAR CO., DETROIT, MICHIGAN

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

SAN FRANCISCO.

San Francisco, Oct. 11, 1916.

Wheat.

An improving export outlook has further stiffened the Eastern market, and local values are extremely firm, though with limited trading no further advance is noted.

[f. o. b. San Francisco.]

Sonora wheat\$2.20@2.25
Northern club2.15@2.25
Calif. club, ctt.2.20@2.25
Northern Bluestem2.50@2.55
Northern Red2.30@2.50

Barley.

Several cargoes have gone for export, and the spot business is quite active, with prices firm. Feed slightly higher.

[f. o. b. San Francisco.]

Shipping, ctt.\$1.30@1.85
Choice feed, ctt.1.75@1.80

Oats.

No change in prices, but good demand, especially for seed grades.

Red feed\$1.80@1.85
Red seed2.00@2.25
White1.75@1.80
Black seed3.00@3.25
Texas Red seed2.25@2.35

Corn.

Old Egyptian well cleaned up, little new offered yet, and most offerings so far have been of unattractive quality, though prices are firm. Crop is said to have suffered great damage from rain, which makes the market uncertain.

Eastern Yellow, ctt.\$2.10@2.15
Milo MaizeNominal
Egyptian, new1.80@1.85

Beans.

Market completely upset by the rain, and prices largely nominal, except for large whites and limas, which have advanced sharply. Very heavy loss reported in most lines, but the extent of the damage is not yet known, and either buying or selling would be a jump in the dark which neither dealers nor growers care to take.

[On wharf, San Francisco.]

Bayos, per ctt.\$4.75@5.00
Blackeyes3.60@3.70
Cranberry beans4.75@4.90
Horse beans3.25@3.50
Small Whites (south) new crop7.00
Large Whites, new crop6.75@7.00
Pinks6.50@6.75

Limas (south)5.40@5.50
Red Kidney6.50
Mexican Reds4.90@5.00
Tepary beans4.25@4.50

Seeds.

[Wholesale prices, S. F.]

Alfalfa, per lb.19@21c
Oregon Vetch4½@5 c
Mellilotus Indica7½c
Mellilotus Alba20 c
Bur clover, recleaned12½c

Hay.

Cars are almost unobtainable. Shipments and arrivals continue light, with further curtailment likely, as crops within reach of water transportation are cleaned up fairly well. No shortage here so far, demand light, except in fancy grades. Comparatively little grain hay appears to have been caught by rain, though considerable late cutting alfalfa has been lost. Alfalfa now in ample supply, and no advance anticipated. The grass which is now coming up everywhere is expected to greatly ease the situation in the country as many stockmen had been preparing to feed hay during early winter, and this will now be unnecessary.

[Wholesale prices per ton, carload lots, San Francisco.]

Wheat, No. 1\$13.00@14.50
No. 210.00@12.00
Tame oats11.50@15.50
Wild oats10.50@13.00
Barley10.50@13.00
Alfalfa10.00@14.50
Stock hay8.50@9.50
Straw, per bale35@50

Feedstuffs.

Demand continues fairly active, values generally firm, with advance on rolled barley.

[Wholesale prices, per ton, carload lots, San Francisco.]

Beet pulp, per tonNominal
Alfalfa meal, per ton\$18.00@19.00
Bran, per ton26.00@27.00
Oil CakeNominal
Cocoanut cake or meal23.00@25.00
Cracked corn44.00@45.00
Middlings35.00@38.00
Rolled barley35.50@36.50
Tankage45.00
Rolled oats34.00@35.00
Rice middlings30.00@32.00

Vegetables.

Supplies have been further reduced by bad weather, causing greater firmness, and higher prices for cucumbers

and summer squash. Tomatoes in excessive supply.
Celery, Alameda, bunch19c
Cucumbers, lug50@75c
String Beans2@3c
Lima Beans2@3c
Summer Squash, lugs40@50c
Eggplant, lugs30@40c
Peas, lb5@6c
Tomatoes, lugs35@50c
Rhubarb, lug75@1.00

Potatoes and Onions.

Little stock coming from the river in either line, and Delta potatoes have advanced slightly. Most onions now in storage, and price has been marked up.

[On wharf.]

Potatoes, ctt, Delta\$1.40@1.75
Salinas2.25@2.35
No. 275@1.00

Sweet Potatoes, per ctt.1.50@1.75
Onions, yellow2.25
Garlic, new crop, per lb.3@5c

Poultry.

Demand moderate this week, with large shipments from nearby points and plenty of Eastern stock. Small broilers, fryers and roosters all easier; squabs are higher.

[Wholesale prices, S. F.]

Turkeys, live, lb. young, large26@28c
Old, large24@25c
Broilers, 18 lbs. to doz. and less, lb.26@28c
do, over 18 lbs. to doz.24@25c
Fryers23@25c
Hens, extra, per lb., colored20c
Small leghorn15@17c
Smooth Young Roosters, per lb. (3 lbs. and over)22@24c
Squabs, per lb35@40c



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Through the microscope, a strap looks more like a sponge than a piece of leather—it's honey-combed with pores. Through these pores, dirt, sweat and moisture attack the leather fibre and weaken your harness.

EUREKA Harness Oil

fills these pores—preserves the original strength and appearance of your harness—adds years to its life. Ask your dealer today.

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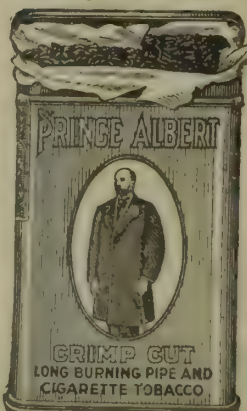


IRON TAIL,

the distinguished Indian whose face adorns the Buffalo nickel, until his death one of the star attractions with "101 Ranch" and "Buffalo Bill's Wild West Shows" combined.

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your system, sunrise-to-taps! Just does pour in the smokesunshine, it's so chummy to the fussiest taste and tenderest tongue!



You put a pipe on the job or roll a cigarette with Prince Albert for "packing" and find out for yourself that P. A. will beat your fondest expectations of tobacco enjoyment for flavor, fragrance and coolness!

Buy Prince Albert everywhere tobacco is sold, in tippy red bags, 5c; tidy red tins, 10c; handsome pound and half-pound tin humidors, and in that clever pound crystal-glass humidor with sponge-moistener top that keeps the tobacco in such fine condition.

R. J. REYNOLDS TOBACCO COMPANY
Winston-Salem, N. C.

Special Livestock Market Report.

San Francisco, October 11.

CATTLE—Despite the advancing season a good many cattle are being offered from California points. The bulk of receipts are, however, coming from Nevada with a few scattering lots arriving from Oregon. Prices remain unchanged.

SHEEP—There is no change in the local market, both sheep and lambs remaining steady, as last quoted. There is a slackening off in receipts of lambs as a result of the advancing season.

HOGS—A slight advance has been recorded in the price of lightweights, because of the falling off in receipts of that class. During the past week there have been some number one hogs arriving which earned a premium for the shippers on the dressing percentage basis. Prices quoted are made subject to the seller standing one-half of any loss on hogs condemned for disease by government inspectors.

[Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.]

Steers, No. 16½@7 c
No. 26¼@6½c
Cows and Heifers5½@6 c
No. 25@5½c
Bulls and Stags4@4½c
Calves, light8@8½c
Medium7@7½c
Heavy6@6½c

Hogs, grain-fed
100 to 150 lbs.7½c
150 to 250 lbs.8¾c
250 to 325 lbs.8¾c

Prime Wethers45¢
Prime Wethers6¼@7 c
Spring Lambs, f. o. b. county points\$5.25@5.75

WOOL—There is no activity reported in this market, and outside buying seems to be at a standstill, with growers holding firm for better prices.

[Prices paid in country.]

Red Bluff, year's25@27c
Mountain, fall13@14c
Sacramento Valley, year's19@25c
Mendocino, year's31@32c
Mendocino, 7 months'26@27c
Southern, year's18@21c
Bran, per ton27.00@28.00
Southern, 7 months'13@16c
Southern, fall9@11c
Imperial Valley, year's17@19c
Imperial Valley, 7 mos14@15c
Nevada21@23c
Fall wool10@20c

Los Angeles, Oct. 10, 1916.

CATTLE—The market holds up very well. California and Nevada continue to use a fair number of very good grass cattle and they are selling without trouble at old prices. Fat cows

and heifers are also meeting with very fair sale. Quotations are f. o. b. Los Angeles:

Beef steers, prime, 1000 to 1100 lbs.\$7.00@7.75
Stockers and feeders5.50@6.00
Prime cows and heifers6.25@6.50
Good cows and heifers6.00@6.25

HOGS—The number of hogs coming in is very good for this time of year and altogether from California. More California hogs are being received than ever before and of better quality and they are selling a little more freely and are bringing steady prices. Idaho hogs continue to go east, being drawn there by high prices. We quote per cwt, f. o. b. Los Angeles:
Heavy, averaging 250@300 lbs.\$8.50@9.00
Mixed, 200@2509.00@9.25
Light, 175 @2009.00@9.25

SHEEP—A firm market was reported the past week, though prices are not quotably higher. California and Arizona furnished most of the supply, they found very good sale; killers all in the market and taking hold without hesitancy. Per head f. o. b. Los Angeles:
Prime wethers\$7.00@7.25
Prime ewes6.50@6.75
Yearlings6.50@7.00
Lambs6.50@7.00

CALVES—Receipts light and market firm and good for the few coming in. Selling at \$8.50 to \$9.50 per cwt.

North Portland, Ore., Oct. 9, 1916.

CATTLE—Today's cattle market opened with another large number of 1600 head. There was a large offering of inferior quality, steers and cows in the run, although there were a number of loads of good quality stuff. There were a few loads of prime steers sold at 7.25 with other loads from 6.75 to 7.10, bulk of good steers sold from 6.25 to 7.00. Cow stuff scored another advance today of 10 to 25 cents. A few prime heifers brought 6.00 and a few cows 5.75. Bulls were in good demand at slightly higher prices, up to 4.25. Prime light calves sold 50 cents higher bringing 8.00, though a few were sold from 6.50 to 7.00. Trading in the stockers and feeders division limited to a few loads, prices ranging from 3.00 to 5.75.

HOGS—A moderate run of hogs was here today. Prices were 10 to 15 cents higher over last week's close. Tops sold 9.75, bulk going at 9.60 to 9.70.

SHEEP market is firm, with unchanged prices. Lambs 8.25 to 8.30; yearlings \$7.40.

Geese, per lb.	14@15c
Ducks	14@15c
Old	13@14c
Belgian Hares	10@12c

Butter.
Offerings of fresh butter diminishing; prices continue to climb. A lot of storage stock going East for export, all that has come out of storage being in fine condition.

Thu. Fri. Sat. Mon. Tu. Wed.	
Extra	32 1/2 33 1/2 33 3/4 34 34
Prime 1st	31 32 1/2 32 1/2 32 1/2 32 1/2
First	30 32 32 32 32 32

Eggs.
Shipping business is light, local demand active, and production falling off sharply. This has caused a rapid advance, but the last day brought a little reaction, as the prices curtailed demand.

Thu. Fri. Sat. Mon. Tu. Wed.	
Extras	44 45 46 47 50 49
Sel. Pul.	39 39 1/2 40 1/2 43 45 43 1/2

Cheese.
Offerings moving off well; values show a firm tendency, with slight advance on Y. A.'s.

[S. F. Dairy Exchange prices.]	
Y. A.'s, fancy	12 c
Fancy Calif. Flats, per lb	16 1/2 c
Monterey Cheese	16c

Deciduous Fruits.
Strawberries show a wide range, according to quality. The rain has greatly disturbed the grape market, and the local trade is clogged with wet and unattractive offerings. There is an urgent demand for shipment, especially for barrel-packed grapes, which dealers are unable to take care of.

[Wholesale prices, San Francisco.]	
Huckleberries, lb., fancy	8@10c
off grade	6@8c
Strawberries, chest	4.50@10.00
Cranberries, Cape Cod, bbl.	8.50@9.00
Cape Cod, bbl.	8.50@9.00
Apples:	
Bellflower, box	60@75c
Jonathans	85@1.00
Newtown	85@1.00
Pears, Bartlett, bx, No. 1	1.75@2.00
Persimmons, box, dbl layer	.75@1.00
Pomegranates, lug	1.00
Quinces, lugs	.40@.50
Figs, Cal. black, box, double layer	75@1.00
White, single layer	.75@.90
Cantaloupes, lug	.60@.75
Casabas, doz.	.75@1.25
Watermelons, doz.	1.25@2.50
Grapes, Malaga, lug	.75@1.00
Muscat, lug	1.25@1.50
Thompson, lug	1.25@1.50
Tokay, lug	.75@1.00
Black, lug	.75@1.00

Dried Fruits.
Prices show further advance. There is an active movement, both from growers' hands and to the East, where consuming demand is unusually good. Owing to a shortage of apples in the East, the price has jumped sharply. There is a heavy demand through the Middle West. Apricots are firm at old level, with little left in growers' hands. Rain has played havoc with white and Calimyrna figs, and none are offered at present, indications being that there will be little on the market from now on. Black figs also have suffered, and are higher. Prunes have advanced again; the East is evidently anxious to buy, and shortage of small sizes gives them the top price. It is said that the crop will soon be out of growers' hands. Peaches quite firm and moving well. Raisins have suffered heavily from rain; all prices have been withdrawn, while deliveries on orders will be cut at least 25 per cent.

[Net to growers, bulk basis, f. o. b. shipping point.]

Apples, new crop	6 1/2 @ 6 3/4
Apricots, per lb. 1916	13 @ 14 c
Figs, white, 1916	None offered
Figs, blk	5c
Calimyrna, 1916	None offered
Prunes, 4-size basis, '16	5 1/2 @ 6 c
Pears	6 1/2 @ 7 c
Peaches: Standard yellow	5 1/2 c
Muir	5 1/2 c

Honey.
Several carloads of northern California and Nevada honey have arrived here in the last week; most of it is finding a very fair market at good prices. Receivers of water white comb honey from Nevada are selling it to dealers at about 16c per lb.

[Wholesale prices, San Francisco.]	
Water white, comb	13@16c
Light Amber	10@12c
Amber	8@10c
Water white, extracted	8 @ 9c
Light amber	6 @ 7c
Dark	4 @ 4 1/2 c

[Almonds, prices.]	
Nonpareils, lb	20 1/2 c
I. X. L.	18 c
Ne Plus	17 c
Drakes	16 c
Languedoc	16 c

Hops.
Coast prices have eased off a little since the first of the month. Extreme prices have recently been quoted in Eastern and foreign markets, and local market is expected to respond to the demand before long.

Sacramento	13@14c
Mendocino	13@15c

Hides.
Remain firm and active, with values as last quoted.

Groceries.
The upward movement of sugar noted since last month's drop still continues, granulated being quoted at a \$7.20 basis. Flour also shows a further advance, with family extras at \$7.60 to \$8 per bbl. at mills. Canned corn in very firm, tomatoes have advanced sharply, a general advance on canned meats is expected. Both salt and canned salmon show an upward tendency. Lard and pork prices very firm.

LOS ANGELES.

Los Angeles, Oct. 10, 1916.

Butter.
Receipts California by rail for week ending Tuesday, October 10:
1916 304,750 lbs.
1915 305,430 lbs.
The market the past week was without feature. Receipts continue to run lighter than a year ago and extras are up from our last review. The consumptive demand holds up well but there was no speculation.

Wed. Thu. Fri. Sat. Mon. Tu.	
1916	33 33 33 33 33 33
1915	26 26 26 26 26 26

Eggs.
Receipts by rail as reported to the Produce Exchange for week ending Tuesday, October 3:
1916 1088 cases
1915 870 cases

A further sharp advance in this market the past week. While receipts continue a little heavier than a year ago, they were no more than sufficient to supply the street trade. Hence in the absence of eastern eggs and storage stocks being light there was a disposition to bull the market. Railroad receipts for the week, 1197 cases and estimated by truck 700 cases for the week. Total 1897 cases, against 1604 cases last year including truck receipts.

Fresh ranch case count	48
Pullets	42

Daily quotations on 'Change:	
Wed. Thu. Fri. Sat. Mon. Tu.	
1916	41 41 43 46 47 48
1915	38 38 38 38 38 38

Poultry.
There was a little better movement the past week and under light receipts broilers, fryers and heavy hens ruled higher. Young roosters were also marked up. There were no eastern arrivals during the week and local receipts only fair. Geese, ducks and turkeys, while slow sale, were firmer. Broilers, 1 1/4 to 2 lbs. 21@22c
Fryers, 2 1/2 to 3 lbs. 19c
Hens, over 4 lbs. 19@20c
Hens under 4 lbs. 15@16c
Ducks 14@15c
Geese 13c
Roosters, 3 lbs. up (soft bones) 18c
Turkeys, heavy, 12 lbs. and up. 21@22c
Turkeys, light 16@19c
Squabs, live, per doz. \$1.50@3.00
Dressed 3.75@4.85

Walnuts.
There was but little done in walnuts the past week. The recent rains checked receipts and damaged the crop about 10 per cent. With fair weather a free movement is expected in another week. Crop is pretty well placed and market is firm at quotations. The associated prices this year and last are:

	1916	1915
No. 1	\$15.50	\$13.60
No. 2	12.50	10.60
Budded	19.00	17.00
Jumbos	17.50	16.60

Orchard run 3c per pound less.

Hay.
The market was again dull the past week. Rainy weather interfered with receipts, but as stock was good, a falling off in arrivals failed to produce better prices. The market remains the same as a week ago.

Barley hay	\$14.00@16.00
Oat	16.00@18.00
Alfalfa, Northern	13.00@14.00
Alfalfa, local	15.00@16.00
Straw	7.00@7.50

SPECIAL CITRUS REPORT.

Los Angeles, Oct. 10, 1916.
Shipments of oranges from Southern California from November 1, 1915, to Oct. 6, 1916, were 30,626 cars and lemons 6700 cars, against 399 cars of oranges and 6579 cars lemons same time last year. Shipments from Central California to Oct. 6, 5400 cars of oranges and 148 cars lemons. Same time last year 5651 cars oranges and 205 cars lemons.

FROM AUCTION SALES.
New York, Oct. 5.—Thirteen cars Valencia, 1 car grapefruit, and 1 car lemons sold. Oranges easier; lemons higher. Weather fair. Valencia averaged \$2.00 to \$6.05; grapefruit \$1.55 to \$2.00 and lemons \$4.00 to \$4.50.

Philadelphia, Oct. 5.—Three cars sold. Market higher with good demand at prevailing prices. Valencia averaged \$3.20 to \$4.50. Grapefruit \$2.40 to \$2.90.

New York, Oct. 9.—Sixteen cars Valencia, 1 car grapefruit, 2 cars mixed and 2 cars lemons sold. Valencia strong; grapefruit and lemons higher. Weather fair. Valencia averaged \$2.65 to \$5.95.

Boston, Oct. 9.—Five cars sold. Market higher and strong on both oranges and lemons. Valencia averaged \$4.15 to \$4.65; lemons \$3.05 to \$5.50, and grapefruit \$2.65 to \$2.85.

SPECIAL DECIDUOUS REPORT

[By J. L. Nagle.]
Continued heavy rains during the past week have considerably affected the first crop of Tokays, 80 per cent of which had been shipped. The second crop is of unusually good quality, the berries being of good size and color and though possibly not containing quite as much sugar as the first crop, seem to be selling up equally as well. At least 85 per cent of the Malaga crop has been shipped. Little or no damage has been done to the Emperors. On account of the forced discontinued shipping, all markets advanced

considerably and although shipments have resumed, we do not anticipate a declining market except on inferior stock.

The following prices have ruled for the week:

Chicago.—Malaga grapes averaged \$1.36; Tokay, \$1.50; Cornichon, \$1.45.
New York.—Malaga grapes averaged \$1.42; Tokay, \$1.55; Cornichon, \$1.59; Muscat, \$1.42; Winter Nellis pears, \$2.35; B. Clairgeau, \$2.45; B. Hardy, \$2.75; Levi peaches, \$1.23.

Boston.—Tokay grapes, \$1.52; Cornichon, \$1.57; Malaga, \$1.30; B. Clairgeau pears, \$2.57.

Total shipments to Oct. 9, 14,008 cars; total shipments same date, 1915, 12,522 cars.

Classified Advertisements

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REBUILT GAS ENGINES from 3 to 50 h. p. Thoroughly overhauled and guaranteed. We handle only high grade engines. Write us your requirements. Motors, Gas Engines bought, sold and exchanged. Mechanical Installation Company, 181-89 Second St., San Francisco

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PRODUCER TO CONSUMER.—Alfalfa meal, alfalfa hay, oat hay, honey, beans, Gyp corn, sorghum molasses, etc.—what do you need? O. L. Linn, Marketing Agent Stanislaus County Farmers' Union, Modesto, Cal.

APPLES DIRECT FROM PRODUCER.—Fancy grade, bulk pack. Bellefleur, 75c per box; Newtown Pippins, 85c; Missouri Pippins, \$1. No. 2 grade, 60c. Edward A. Hall, R. F. D. 1, Watsonville, Cal.

STUDY TELEGRAPHY. Stenography, Book-keeping, Law, English, Board, room and tuition may be earned. Catalogue free. Mackay Business College, 909 Main, Los Angeles.

LIVING EXPENSES REDUCED THROUGH CO-OPERATIVE BUYING.—Write for catalogue and particulars. Pacific Co-operative League, D236 Commercial St., S. F.

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QUALITY TREES.—Seedlings, 5c. Prunes, 10c. Walnuts, 30c. Cash Nurseries & Seed Store, Sebastopol, Cal.

FRUIT TREES.—Long on apricot, almond and pear. Fine, thrifty stock. H. A. Hyde, Watsonville, Cal.

SEED POTATOES.—The largest field of Burbank, certified under State inspection in California; also Certified American Wonder and high-grade Oregon Seed, Garnet Chili and others. References: Acting State Horticultural Commissioner, Mr. Geo. P. Weldon, W. V. Shear or Stockton, and the Pajaro Valley National Bank of Watsonville. This stock will go fast, and would advise your writing early. H. A. Hyde, Watsonville, Cal.

RHUBARB.—Now is the time for planting rhubarb. \$1324.00 from one-fifth acre in eighteen months from planting. Write me and I will tell you how you can do as well. J. M. Stone, Lodi, R. D. 4.

WALNUT TREES.—Franquette, Mayette and Mammoth on Black Root; also Grafting Wood and Black Seedling Trees. Lowest prices. Mammoth Walnut Nurseries, Watsonville, Cal.

ALFALFA SEED FOR SALE.—Producer to consumer. Write D. W. Stadtmuller, Woodland, Cal.

WANTED.

POSITION WANTED.—Man of 20 years' experience in all branches of ranch work and stock raising, is now open for engagement as ranch superintendent. Having filled this position satisfactorily on some of the largest ranches in the State; needless to say have first-class references both as to capability and character. Box 300 Pacific Rural Press.

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WANTED by married man, position as foreman or caretaker. Understand planting and care of orchard. Can give best of references. Box 290, Pacific Rural Press.

HORTICULTURAL SUPERINTENDENT desires position as manager of private holdings. Salary or profit-sharing. Experienced in livestock. Box 270, this office.

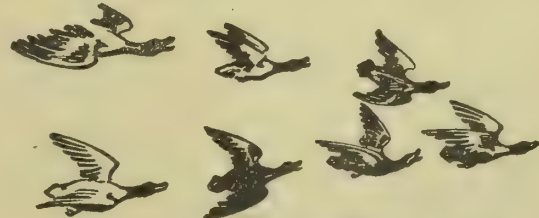
COUNTRY LANDS.

WANTED.—Farms, large and small, in all parts of the State. Our system of placing owners in direct communication with buyers has brought us hundreds of applications for farms. What have you to offer? Write for our listing blanks. Western Farms Bureau, 660 Market St., San Francisco.

FOR SALE at a great bargain, extra choice 80-acre home in beautiful Wasco, Kern county. Finest of soil, abundance of water. 20 acres in alfalfa. Variety of fruit. 2 1/2 miles from town and creamery. Am old and alone. Must sell. S. H. Johnson, Box 103, Wasco, Cal.

WANTED.—Second-hand 6- or 8-horse-pull orchard tractor. R. F. D., No. 19, Orland, Cal.

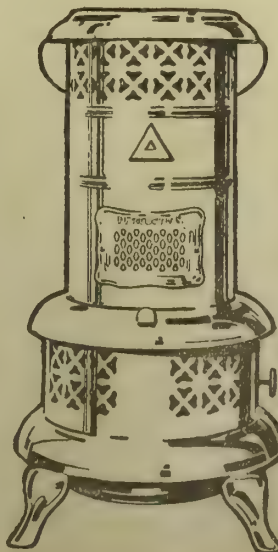
FOR SALE.—Dairy and stock ranch containing 285 acres—100 acres in rich bottom land. Well stocked, good buildings, etc. Income \$3000 per year. Write owner for particulars. J. Shank, Jenny Lind, Cal.



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Size	Special Prices on Plain Tread	Gray Tubes	Red Tubes
28x3	\$ 6.55	\$1.75	\$1.95
30x3	8.05	1.85	2.10
30x3 1/2	8.95	2.10	2.35
31x3 1/2	9.45	2.15	2.40
32x3 1/2	9.95	2.25	2.45
34x3 1/2	10.95	2.30	2.55
36x3 1/2	12.45	2.40	2.75
38x3 1/2	13.95	2.40	3.10
30x4	13.45	2.85	3.20
31x4	14.05	2.95	3.30
32x4	14.70	3.10	3.40
34x4	14.95	3.15	3.50
35x4	15.45	3.20	3.60
36x4	15.95	3.30	3.70
34x4 1/2	20.25	3.85	4.30
35x4 1/2	20.85	3.95	4.35
36x4 1/2	21.25	4.10	4.50
37x4 1/2	21.90	4.15	4.60
35x5	23.05	4.70	5.20
36x5	23.95	4.90	5.35
37x5	24.90	4.95	5.45

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PRICE PER GALLON:

	1 Gal.	5 Gal.	50 Gal.
Colors	cans	cans	bbi.
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Freight prepaid to your nearest station. Sent by Parcels Post when possible.

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Raising Poultry for Profit

QUESTIONS AND ANSWERS.

Fowls Go Light.—Could you give me a remedy for chicken cholera, also the lightness of hens—they get light and die?—Mrs. J. W. J.

Now the best remedy for going light is to kill and cremate all that are badly affected. No hen that dies of going light ever has cholera because the latter disease only occurs in flocks that are over-fed with a very fattening feed such as corn. We are too scared of the corn in California to ever be troubled with cholera. Give your whole flock a dose of Epsom salts either in mash or in the drinking water and follow this up with ten drops of tincture of nux vomica to every quart of water. Give this for three days, then stop it, and feed good nourishing feed such as a good mash moistened with milk and cooked grain. This flock has had indigestion that has been neglected. Feed plenty of alfalfa or lawn cuttings and be sure to cremate all that die.

Turks Have Warts.—Young turks have warts on the heads and legs, one died, but don't know if that was the cause. They have range and feed on hoppers, alfalfa, and grain.—Mrs. A. E. O.

Your turks have chicken pox; must have been sleeping in some place where they caught a bad cold and it affected them in that way, or by birds carrying the disease as sometimes they do, or again by dirty sleeping quarters. The best thing now is to spray them, or catch them and treat each one separately. If you have a good air pump or even a good bucket pump, provided they don't roost too high, you can spray them with little labor. Get a can of Kreso Dip No. 1, make it fairly strong and go around after they have gone to roost and spray them all over—feathers, head, and legs—at about three different times. Give them about five drops tincture of iron per quart of drinking water. If you catch them, give each turkey many drops through a medicine dropper. It is bitter and the birds will not drink water that has it in if they can help it.

Sore Eyes and Gapes.—Several four-months pullets have sore eyes and gapes. They linger a few days and then die.—Mrs. L. E. A.

The sore eyes indicate roup colds and the gapes indicate that in some cases the colds have attacked the lungs and the chickens have inflammation of the bronchial tubes. For these nothing can be done, but you can perhaps save those not affected in this way. For young stock like these peroxide of hydrogen made pretty strong is the best thing to bathe the head and eyes in. This must be done every other day at least, and every day is better. Give them a little of the following tonic in a good mash and mixed with warm water: One teaspoon tincture of iron and one teaspoon compound tincture of gentian. Add to enough mash to feed 300 pullets one meal and give it to them every day until they improve. Feed them well.

Note.—Now there are one or two cases here that would have been so much better and more profitable

to those interested if they could have received immediate help, instead of having to wait for the help through the paper. I have about sold out my poultry and am spending my time in gaining more and more information to help the poultryman. I am now advertising myself as such. You will still get all

the help you ask for through the paper free, but in special cases where help is need at once and where you want lengthy letters of advice I must refer you to my ad which will appear once a month for information; but believe me you will get your money's worth or I hereby guarantee to refund it.

Poultrymen in the vicinity of Modesto are subscribing liberally for stock in the \$250,000 State-wide marketing organization.

The Right Roofing for Your Purpose

You'll find MALTHOID JUNIOR the best roofing for all round use—from covering a small private garage to a great skyscraper.



MALTHOID JUNIOR

"The Right Roofing at the Right Price"

is the climax of more than 30 years successful experience in the manufacture of Roofing, and is made for Western climatic conditions.

Some roofings are made to sell—MALTHOID JUNIOR is made to wear. It comes only in one quality, one weight, and sells at one price—

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Sold at Lumber Yards, Hardware and General Stores



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Make It Easier For Them

Standard Oil Company (California)

SPARE the horses. Mica Axle Grease makes easier pulling. It gives a smoother bearing than ordinary grease, because it contains powdered mica—blended with the grease by a special process. The mica keeps the spindle smooth, resists wear and pressure, and makes the grease last twice as long. Get a can from your dealer today.

MICA AXLE GREASE

Let Us be the Cafeteria For Your ORCHARD

A WELL fed orchard can deliver the goods.

☞ A starved one will return a starved crop only.

☞ A green manuring crop *inoculated with Westrobac* furnishes the food supply.

☞ We can furnish *Melilotus Indica* (Scarified) seed, *Recleaned Vetch* seed, *Bur clover* seed and the best of *Bacteria* (*Westrobac*)

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PLANT ALFALFA?

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WESTERN SOIL BACTERIA CO.

442 Sansome St.
SAN FRANCISCO, CAL.

POULTRY JOTTINGS.

The Coalinga Poultry Association will hold its show in Coalinga from November 15 to 18, inclusive.

The steamer China, which arrived in San Francisco the other day from the Orient, brought 612 cases of dried eggs.

The best pen of poultry at the Fresno Fair was that of J. J. Graves' Buff Orpingtons from Redwood City. They were glossy, vigorous, heavy, and typey in build and color. The pen won three championships and one 1st prize.

Tulare is rapidly becoming an important district for the raising of fine poultry. It makes a specialty of heavy table birds rather than birds for egg production, though large numbers of crates of eggs figure in its shipments.

Edgar Grossman of Petaluma, organizer for State Market Director Harris Weinstock and the Poultry Producers' Promotion Committee of Central California, reports that the subscribed number of chickens is nearing the 600,000 mark.

River Bend Farm, St. Helena, Cal., is breeding Danish S. C. White Leghorns. These fowls are white of feather, their eggs averaging 26 ozs. to the dozen. The hens are said to weigh about a pound more than our native birds.

The Sonoma County Fanciers and Breeders Club, organized to encourage breeding of purebred poultry, pigeons and pet stock, and to promote winter shows and exhibiting at fall fairs, will hold a show Dec. 20-23. Score cards by W. S. Russell, judge.

The Tulare Co-operative poultry association's report for August shows an increase of \$270 over the previous month, and beats August, 1915, by more than \$3,000. The total business amounted to \$7,430.81. The egg business for the month amounted to \$4,477.19.

The San Diego Poultry Show management is completing its arrangements for the exhibition to be held in San Diego under the auspices of the San Diego Fanciers' Club, November 4 to 9. Among the prizes is \$100.00 in gold offered by Mr. Spreckels of San Diego for a display of twenty birds in any class.

Dr. Beach of University Farm says 90 per cent of runty chickens are due to worms. He says to starve them a day, then give the juice of steeped tobacco stems, and clean the worms from dropping boards early next morning. If the cause is not worms, it is most likely to be an intestinal parasite which can be disposed of by giving buttermilk for their only drink.

The poultry breeders of Fresno county have reorganized, and the old Fresno Poultry, Pigeon and Pet Stock association has dissolved, many of the members now affiliating themselves with the Tri-State Poultry association, which will give two shows this winter, with the co-operation of the local growers. A show will be held about December 15.

An active campaign has been inaugurated to secure the support of the poultrymen of Stanislaus county for the Poultry Producers of Central California, composed exclusively of poultrymen, to be conducted for marketing purposes under the supervision of State Market Director Harris Weinstock. An amount equal to 25 per cent of his subscription must be advanced by each subscribing member.

C. E. Sprouse recently closed a deal with the Young's Market Company of Los Angeles whereby that concern purchased a tract of land east of the Globe Mills on Main street east of the railroad with a view to erecting a great cold storage, feeding and packing plant. The purpose of the company is to buy, fatten, kill and dress Imperial Valley's poultry produce for the Coast markets, doing away with the excessive freight on live turkeys, chickens, etc.

WINCHESTER



.32, .35, .351 and .401 Caliber SELF-LOADING RIFLES

When you look over your sights and see an animal like this silhouetted against the background, you like to feel certain that your equipment is equal to the occasion. It is, if you are armed with a Winchester Self-Loader. Not only does this rifle shoot surely, strongly and accurately, but it gives you a chance to get in a number of shots in quick succession. It is the rifle of rifles
FOR ALL KINDS OF HUNTING



When better
"GAS"
can be made
we'll
make it

STANDARD OIL COMPANY

(CALIFORNIA)



Pull big stumps by hand

Clear your stump land cheaply. No expense for teams or powder. One man with a

K HAND POWER Stump Puller

can outpull 16 horses. Works by leverage—same principle as a jack. 100 lbs. pull on the lever gives a 48-ton pull on the stump. Made of Krupp steel—guaranteed against breakage. Endorsed by U. S. Government experts.

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CALIFORNIA HOG BOOK
teaches the Swine Industry under
California conditions.
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Circular containing 100 mechanical
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Our free book 'Chickens from shell to Market' gives full particulars
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That's what poultrymen want. And you can get them by feeding

SURELAY

because it contains just the proper proportion of protein for the white—just the right amount of fat for the yolk—just sufficient lime for the shell. All poultrymen feeding **SURELAY**, packed in *yellow striped sacks*, are making money and so can you. There is no secret about it. We print **SURELAY'S** composition on each sack and—**what's on the sack is in the sack** and that's what makes the eggs.

Send for a Free Copy of

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This book will tell you in simple language what you should know about the proper care and feeding of chickens so as to get the best results. Fill in and mail the attached coupon giving your and your dealer's name and we will send you this interesting booklet **Free**.

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THE PACIFIC RURAL PRESS

SAN FRANCISCO

OCTOBER 21, 1916.

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BREEDERS of purebred cattle, and more particularly those with experience in official testing, are well aware of this fact and are carefully laying their plans accordingly. In view of the fact, however, that this contest will include many grade and purebred herds which have not in the past been put on test, and the further fact that this journal wishes to do all it can to place all on an equal footing, as near as possible, the following suggestions are offered for the benefit of contestants in all divisions.

Picking Cows.—The first consideration should naturally be the cows that are to be entered. If weighing and testing of milk has been practiced with the herd, either privately or by a cow-testing association, it will be a comparatively simple task to choose the highest producing animals. In choosing them, however, their production for 10 months, rather than for a shorter period, should be considered, as most of the prize money in the competition will be awarded for 10-month milking periods, rather than for monthly periods.

In case the herd has never been tested for butterfat, those cows that have shown a tendency to be persistent milkers should be picked out and samples taken of their milk, provided they are still milking. Most any creamery will be willing to test these samples for butterfat, without charge.

When to Enter.—The time of entering the contest will naturally depend upon the time of year when the largest number of cows in the herd are to freshen. Fall freshening is general in the alfalfa districts, while spring freshening is the rule in most coast or mountainous districts, in order that the cow may receive full benefit of the spring pastures. Both kinds of cows may be entered in the competition, since entries are open to all up to May 1, 1917. When possible, contest cows in the interior valleys or other warm locations, should freshen as early as possible in the fall in order that they may avoid fly and warm-weather discomforts. Both are factors in maximum records and should be guarded against, especially in the earlier months of the lactation period.

Another point is winter protection against rain and mud. Cows exposed to all sorts of weather or compelled to wade or stand in deep mud cannot be expected to do their best. If there is no good dairy barn on the ranch, where the cows can be kept in during rainy weather, some kind of shelter, either an old building or a covered feed shed to which the cows can go and come at will, is highly desirable, and in keeping with good dairy methods.

Preliminary Feeding.—Having selected the best prospects from the herd, the next step is conditioning. Physical condition before freshening

Feed and Management of Test Cows.

Preparedness, Feeding, and Management will be Contributing Factors to the Successful Winning of Prizes in the California State Dairy Cow Competition which Starts Nov. 1 and Continues 16 Months.

[Written for Pacific Rural Press, and Edited by Prof. F. W. Woll.]

cannot be emphasized, and the best obtained by giving a cow at least six weeks between drying-up time and calving, and more if possible. During that time she should be fed well on a ration that experience has shown to be good, and the one deemed ad-

visable for the cows after they are entered in the competition. Best results will be secured where this ration contains three to four pounds of concentrates until a week or two before calving, when it should be discontinued and hay or succulent feeds used entirely. This practice tends to add flesh to the cow which can, as the saying goes, "be milked off from the back into the bucket," during the early part of the lactation period.

When cows are fed grain before freshening, their test the first week or two after freshening is apt to be abnormally high and this is taken into account by the rules of the competition. No tests will, as a general rule, be conducted prior to the 14th day from freshening. The monthly tests aim to show the average regular fat content of the milk for the various months; and normal conditions of testing must therefore be secured for these tests so far as possible. Also, it will be well to remember that the weights of milk will not be considered till the fifth day from freshening.

Cows differ so much in the system of feeding under which they will do best that the ration should not be definitely decided upon for two or three weeks after freshening. Some cows may be brought up to full feed in two weeks, while with others it will take three or four weeks. It is always best not to force for maximum production very soon after freshening, as the long-distance record is the all-important consideration. The amount of feed given should be determined by the appetite of each individual cow and the manner in which she responds at the milk bucket. If she is doing satisfactory work, the feed should remain unchanged except for a gradual increase in quantity, as circumstances permit. Radical changes should never be made on any account, and the cow must be watched closely while on heavy feed to guard against her "going off feed." If it is found that the ration needs changing, it should be done gradually and in such a manner that the cow always has a good keen appetite.

Succulent Feeds.—Heavy feed consumption is fundamental in the making of large records; and one of the first essentials in the cow's ration is plenty of succulent feed. This is both safe and sure.

Under this heading, wild pasture is preferable when available as the cows choose the grasses they like best and it reaches them in the natural form. This also holds true with alfalfa fields, although care

(Continued on page 444.)



Dairy Farm with Pear Orchard in Sacramento County—A Splendid Combination for the Locality.

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EDITORIALS

STICK TO YOUR JOB.

CALIFORNIANS say farewell this week to Henry Miller, one of the most unique, masterful and achieving men of our first half-century as a State. Nearly ninety years ago he arose quietly from the earth, for he had no titles nor endowments at his birth; quietly now he returns to the earth, for his obsequies consisted alone of leaves-taking by his immediate relatives. He goes hence just as he came into the world—in fact, just as he lived his long masterful life in it—quietly, simply and confidently. We forget the colossal fortune he amassed, the kingdom of land which he acquired and governed, because there is a question whether it is good for mankind for one man to have so much. We remember that his transactions had many phases of fairness to his fellow-men; that he kept his word, that he conquered his fellow-men quite as fairly and considerately as men are usually conquered; that he lived his life and did his work straight to the ends he resolved to attain, and he did attain them. We are not sure that these ends are best for a man or for mankind, but it is undoubted that he saw clear and far and that he stuck to his job. This quality has been the enduring foundation upon which all the world's great heroes have achieved, and whose careers are held before the eyes of the youth as worthy of emulation. This quality of Henry Miller we are justified to exalt as a standard under which to wage war upon indefiniteness of purpose, shiftiness and dilettantism, which ruin the efficiency of so many lives. We do not say that any man should try to do what Henry Miller did. Conceive of higher purposes, of more altruistic motives, if you can, and God bless you in pursuit of them, but remember that your success in other lines will depend upon the same quality which Henry Miller chose and conceived to be best in his line: stick to your job!

THE JOY IN WORK.

HENRY MILLER never tired of his work, and his example should be pondered by all who are nearing the ends of lives which have been busy and effective in lines in which they have manifested some creditable degree of mastery and efficiency: stick to your job! Henry Miller planned for himself no retirement to ease and luxury and vain show of the wealth he had won. He knew that he could live longer and get more joy from life by continuing his work to the limit of his physical powers, and so, though arranging against confusion in case he should be quickly called, he lived on and worked on as his strength allowed. He found his joy in work, and that is the only place an active, masterful mind can find joy. Joy in work was no discovery of his; it is an ancient and generalized human experience; all history and literature testify to this fact. And yet, in spite of this fact, too many aging people have dreams of their own of joys of retirement or yield to the illusions which others, not always disinterested, trace for their temptation to idleness. It is a great mistake; joy in work, if once truly felt as a moving principle, is the most enduring emotion of the human mind—next to the ecstasy of per-

sonal love. And the warmth of personal love increases when associated with the joy in working; it is in great danger of cooling in idleness. Some have said: "I will quit work and get acquainted with my family." Such a one has no real joy of work; he is galled by the chains of bondage. Work which is beyond one's physical and mental powers, and which does not awaken enthusiasm and personal satisfaction in its pursuit, is void of joy. We have no experience in it and do not prescribe for it. But work which one can do well, according to whatever standard of efficiency is proper to apply to it, should be a joy to do—in youth, in age, so long as one remains a man. Therefore, we say, from quite a breadth of observation and experience, "Choose not to enjoy the pleasures of sin for a season"—for idleness is sin; yield not the joy in work, as strength abides in you to work.

MILLIONAIRES CHOOSE WORK.

WE ARE aware that choosing millionaires as exemplars of the gospel of work may be repudiated by some who are apt to associate work with compulsion to work, and we have no disrespect for this point of view. And yet, every one should know perfectly that joy in work is not necessarily associated with compulsion in the poor, nor with greed in the rich. Joy in work is creative satisfaction, which may be associated with the straight line of a ditch, the clever stroke of a hammer, the strength of a seam, the flaky crust of a pie, the good turn of an investment, or the grace or force in a spoken or written sentence. Its motive may be to secure the pleasure of another or your own. It is simply doing well what is worth doing—from any point of view whatever. Therefore, it is perfectly proper to cite millionaires as authorities for the joy in work. It is also proper from the fact that if they knew not work and the joy in it, they would probably not be millionaires, to be cited as exemplars of anything. This being the case, we shall cite other millionaires in support of Henry Miller's attitude toward work and his investment of all his life in it. He did not talk about it; he did it. Therefore, we have to support his deeds by the words of others, not by his own. Take the case of Charles M. Schwab, whose millionaireity no one can doubt: this is his declaration:

"I always pity the man who says, 'When I get so much money, I am going to retire and enjoy life.' The greatest thrill that can come to any man is the thrill of successful achievement. In the last year I have had opportunity to sell out Bethlehem Steel for almost fabulous sums. The proposals did not even interest me. If I gave up my business I would be resigning my greatest interest in life."

And so Mr. Schwab keeps on plunging his trusty steel into the central allies—at the regular price thereof. And there is Frances Nash, daughter of the president of the American Smelter Trust, worth five millions and willed to work. Miss Nash, in answer to the question, "Why do you work?" recently said this:

"I suppose it's because I like it so much, because in my work I find self-expression. I don't see that having money has anything to do with the matter. Nobody in the world, who is well, has a right to loaf. Every man, every woman, ought to do something, to have some definite aim, for the good of his or her soul. Besides, it's so very stupid to be idle."

JOY IN INDEPENDENCE OF IT.

BUT, as we have said, joy in work belongs neither to the rich nor to the poor, but to all men and women. Press dispatches brought last week the story of a joyful worker from Ontario in this State, saying that a large saw and an axe, coupled with the labors of cutting pepper and eucalyptus trees into stovewood, have no terrors for Mrs. Katie Norwood, 71 years old. In fact, Mrs. Norwood said recently she enjoyed her tree-cutting work and added that the strenuous work kept her "fit as a fiddle." She cuts and saws her wood regularly, scorning all efforts of aid from her neighbors. "It is honest work," she remarked. "I have no husband to cut wood for me, so why shouldn't I do it myself?" She has grown children who offer her a home, but she has declined to live with any of them, declaring she would much rather be independent and care for her own little home.

There can be little doubt but that joy in work and the will to work, according to the modicum of force which is vouchsafed, are the last and greatest earthly gifts to declining years. You encourage the children to work for the good of their lives in a busy world. It is just as reasonable to encourage the aged to work, as they choose to do it, for the good of their souls.

* * *

WE SHALL VOTE AGAINST SINGLE TAX.

F. F. BRITTON, a prominent fruit-grower of the Santa Clara valley, writes as follows:

"Having taken your paper for over 40 years in our family, I make free to ask you to stir up the farmers of California to work and vote against the proposed amendment to the constitution which would bring the Single Tax theory into operation in this State. Do not let the land-owners have the least cause to claim that you did not warn them fully and sufficiently. Strike some sledgehammer blows at once for the benefit of all land-owners and prevent doubling the burden of taxation on the land alone."

We are very sorry not to gratify so old a friend who has, apparently, a good opinion of our striking power, but we cannot undertake comment nor write discussion of this question. The simple reason is this: To even partially accommodate our readers who would spring to the breach if we opened the question, would exclude from our columns all other things which our subscribers are expecting and paying for. Two years ago we briefly gave a few reasons why we held against single tax, and immediately received fifteen articles, pro and con, which we were obliged to return to the writers, because their publication would occupy one whole issue of our paper. Of course, it may be suggested that we can print what is "on our side" and chuck the rest in the waste basket. This may be a good way for partisan journals, but it is not our way. We prefer to stop at the entrance subjects which we cannot fairly follow and invite our readers to follow, if they wish. We can not handle this subject without swamping our outfit, and there seems less excuse for risking this when our readers already understand the issue so well and are so keen to break out in print about it. Lest our old friend apprehend that we are dodging a declaration of where we stand on the subject, we add that the publisher and editor of this journal will both vote against the single tax—but we will not try to say why, nor invite others to do so, for the reason stated.

* * *

FINDING JOBS FOR THE IDLE.

CALIFORNIA seems to be fighting Satan's effort, to find mischief for idle hands, quite successfully. The State Labor Commissioner, J. P. McLaughlin, has issued a statement of the activities of the free employment bureaus provided for by the last Legislature, which were opened on the first day of last February. Since that date 23,118 men and 3,796 women have been assigned to employment without cost to them nor to employers. The busiest month was August, when 5,952 positions were filled. Of this number 3,499 were outside of the cities of San Francisco, Sacramento, and Los Angeles, and this indicates that the employment bureaus are serving a good rural purpose. Of the 26,914 positions filled since last February 2,707 were agricultural. This seems a smaller percentage than one might expect, but the undertaking is probably too new to be widely understood away from the towns and villages. It may be expected to grow toward agricultural service later. If the plan seems on the whole practicable, it should be much more widely extended, either by State or county enterprise. If there were at all rural centers some way provided by which men could be regularly placed as discharged, there would be less disorder and devilry than now exists, and each community could have a more even labor supply. If a fired man could go quickly from one good bed and square meal to another, the gin mills and railway culverts would be largely depopulated, and all rural property would be more secure. Those who expect to go from rural constituencies to the next Legislature should be thinking and enquiring about what this rather new line of public service can do, both for laborers and their employers.

By
the Editor

QUERIES AND REPLIES

Inquirers Must
Give Full Name
and Address.

Orchard Water — When and Why?

To the Editor: We have a seventeen-acre prune orchard between twenty-five and thirty years old. It has never been irrigated until this year. Last May we put in a plant and gave a thorough irrigation. The result was about forty tons of dried prunes. The trees have made very little growth, as it took all their strength to mature the crop. The people in this locality irrigate in the fall—October and November, but it looks to me as if the trees need a good rest. Kindly advise me what you think would be the best thing to do; irrigate now or wait until spring, or both?—Orchardist, Yuba City.

Fruit trees need a fair amount of moisture in the soil during the autumn. This seems to be necessary to secure healthy operation of the functions which belong to the roots after the seasonal activity of the top has ended. It is thought this is particularly necessary after a tree has borne a heavy crop, but we are not aware that this conception has been demonstrated. It may, however, be conceded that roots which have to lose moisture by standing in too dry soil are robbed of something they need. The "rest" which a tree gets by the drying of its tissues is not a "refreshing sleep." Moisture in the soil does not cause "activity" unless the temperature is high, which is not the case in late fall and winter. Therefore fall irrigation will not disturb the "rest" of the deciduous tree. There are two purposes served by fall and winter irrigation. First, the guarding of the roots against injury by drying. Second, the increase of soil storage of water so the tree may have enough to fill the requirements of the following summer, with less, or without any, summer irrigation. If the soil is fairly moistened by early rains, as is the case this year in your district, fall irrigation is not needed to serve the first purpose. If there is heavy rainfall later, winter irrigation is unnecessary—so long as you are ready to give summer irrigation, when desirable. Therefore, you can wait and see what the rainfall does for you. If it should be short and much of it lost by evaporation from hard ground during long dry spells, winter irrigation should be given. It will help you get the ground in shape and will supply the trees what they failed to get because of little rain.

Woolly Aphis on Pear Roots.

To the Editor: I have four old Bartlett trees on light loose red soil. They are growing without irrigation and are badly infested with aphis on the roots. I would be willing to dig up the trees and starve out the pest if no other treatment is suggested that offers any degree of success. What danger would there be of spreading the aphis in digging up the trees and scattering the soil; leave the hole vacant one whole season and then plant again to pears? Is this a possible way to solve the problem? The trees are badly infested and I feel that drastic measures are needed to get rid of the trouble.—E. M. S., Grass Valley.

Though the woolly aphis of the apple is not generally counted a great pest of the pear it does take seriously to the pear in some places in California and there is little hope of eradicating it, but it can be reduced below the power of doing much harm. Unless, then, your trees are so old and decrepit that the woodpile is the only place for them we should work toward relieving them rather than hope to get rid of the pest, for it is so widespread that complete escape is hardly to be expected. Make an excavation around the tree, three feet from the trunk, down to the main roots and pour in enough tobacco wash (1 lb. 40 per cent. tobacco extract to 200 gallons of water) to wet the ground well. This will kill all the lice it can reach. After it has soaked away fill the ring with clean sand which will prevent the lice on the outer roots from getting to the center because they cannot go through the soil except as they find cracks to go in. The tops of the trees should be pruned back this winter and given a thorough lime-sulphur spraying to kill insects and clean the bark. Next spring and summer spray the top with tobacco-soap spray to kill the colonies which appear on the branches. In this way the trees can be re-invigorated, if they have strength enough to come

back, and the aphis kept below the point of much injury.

Alfalfa After Alfalfa.

To the Editor: I wish to plow up some old alfalfa land with a view to reseeded. It is generally understood that alfalfa enriches land for other crops but does it do it for itself? Part of this land is light, never produced much hay even while alfalfa was young, but wish to continue it in same place. Will it benefit the light spots to put on stable manure? If so, how much per acre and how many years should it be farmed to other crops before reseeded to alfalfa?—H., Del Rey, Fresno county.

Alfalfa enriches land for itself just as much as it does for any other plant, but there are two things to consider: First, the enrichment is chiefly in nitrogen content and therefore money can be made by putting on grain, etc., which is stimulated by the nitrogen and cannot make or get it for itself. Second, selling alfalfa hay off the place robs the soil of lime-phosphate, potash, etc., which it must take from the land to make its growth. If grazed, or fed on the place and the manure returned, the soil is repaid for what it furnished and is enriched by the nitrogen which alfalfa can get from the air. If you had rather have more alfalfa than to take profit from grain, grain hay, roots or other crops which you might get in rotation, put on the light land now all the stable manure you can get. You are not likely to get too much on light land, which is presumably well drained, but six inches depth all over it will do. Plow that in now and let it lie in the wet. In February you can disk lightly and reseed with alfalfa when earth and sky favor. Do not wait at all unless you wish to get other crops.

Land Doubtful for Fruit.

To the Editor: I have land which in early days gave three tons of barley hay per acre but now about one ton is the average. There is a loamy soil on top but at 18 to 24 inches below there is a gravelly clay subsoil about 4 to 5 feet through and this is underlaid by sand and gravel. Would this land be fit to raise trees on, and what would do best, apricots, cherries or almonds? The land will hold moisture when well cultivated.—Subscriber, Gilroy.

We should not call it fruit land, either by nature or experience. Land worn out for grain or hay will give good fruit trees if it has anything good below. Your goodness was mostly on top and that has largely gone. If it is level enough not to be in danger of winter-washing, it ought now to be blasted, tractored, sown with bur clover and turned out to pasture—which would bring it back to hay or grain, perhaps as good as ever. It is certainly not good for commercial cherry, apricot or almond growing though even such trees might do for a while, if you do not get rainfall enough to drown them out in the winter and you cultivate thoroughly so they do not dry up in the summer. The trees which would make the best bluff at profitability would be pears and prunes on myrobalan.

Behavior of Black Currants.

To the Editor: I have some black currant bushes, four years old next spring, that have not borne any currants nor any sign of bearing except about a dozen small bunches, but have made a fine growth. They have never been pruned, and are now full of buds for next year's foliage. If they are not going to bear well I shall keep them in no longer.—P., Berkeley.

There is such prevalent distaste for black currants and such a lack of commercial demand for them that understanding of their needs and behavior is very rare. It is known, however, that many popular English kinds are shy bearers in this country, and local effort has to be made to get kinds which enjoy our conditions. We should give the plants longer trial, not pruning them—for the double purpose of checking their vegetative vigor somewhat and of giving them a chance, to bear either on old or new wood—if they will do either. Meantime we would secure from a California nurseryman a few plants of a kind which he knows bear well, to see whether the trouble is in the habit of the plant you have or in conditions not favorable to fruiting.

Fall Pruning of Peaches.

To the Editor: I have old peaches interset with apricot trees two years old. I expect to take out the peaches in a year or so. For the sake of the young apricot trees it would be an advantage to prune the peaches now and get the brush cleaned up before it gets muddy. Will it do any material damage to prune the peaches now? They have not been irrigated but have about 1½ inches of rain.—L. C., San Jose.

It is true that dying back of stubs of severed branches is less if the cutting is done nearer to the start of new growth which favors healing of wounds. The peach is by nature of bark and wood more liable to die-back after cutting than most other trees, but under the circumstances you describe we would not hesitate to go ahead with the pruning now. Most peach trees we see are sufficiently dormant to be pruned. Even if your foliage is still quite active, you can safely do the larger cutting now and shorten the new shoots, which you desire to fruit next year, later in the season. If they are not active we should finish the job now.

Non-Bearing Persimmons.

To the Editor: I have two trees of the Eastern wild persimmon, which bloom and set full of fruit each year, but fail to mature it. Why do they not mature? I got the seed from a tree in Kings county which bears full of fine fruit.—J. T. C., Crow's Landing.

The American persimmon usually grows staminate flowers on one tree and pistillate on the other. Possibly your trees are both pistillate and in that case might be expected to bloom, set fruit and drop it, for lack of pollination. In that case the fruit would not be expected to get large and would contain seed skins without kernels. If these are the facts with you, the explanation is indicated. If however you find fruit which becomes fully formed but does not ripen, we cannot explain that. It might be added that the Japanese persimmon is somewhat different in habit and bears enough staminate flowers on the same tree with the pistillate to pollinize the latter, but seedlings of that species are apt to fail to do this when young.

Transplanting Raspberries.

To the Editor: Is this the right time to set raspberries: vines of this summer's growth which are still growing?—B., Carpinteria.

They can be successfully re-set now if not to be moved far. They are shallow-rooted and you can easily take up a lump of earth to go with the enclosed roots to the new place, and the plant will not know that anything has happened. For transplanting which involves shaking out the roots and packing later transplanting would be better.

Navel Oranges with Seeds.

To the Editor: Does a Washington Navel orange, planted among non-seedless trees, eventually produce fruit with seeds? I am told that unless this variety is planted at some distance away this result happens.—A. J. P., Victoria, Australia.

A few navel oranges have a few seeds and a few non-seedless oranges have navels, but neither phenomenon has been traced to association of proximity. No attention whatever is paid to separate or distant plantings in this State for that reason.

Pruning Raspberries.

To the Editor: I have irrigated my raspberries very liberally all summer, with the result that I am now getting quite a crop from this year's canes. I have had the old canes cut out. How shall I prune those now bearing, to insure fruit from them next year?—Amateur, Los Altos.

Prune lightly—cutting just below the old tips which have fruited. The next fruit must come on laterals which will start out from buds lower down on the same canes which are now giving you fall fruit.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., October 17, 1916.

STATIONS	Past Week	Rainfall Data		Temperature Data	
		Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka	00	1.90	2.67	52	46
Red Bluff	00	3.35	1.55	82	50
Sacramento	00	1.00	.86	80	46
San Francisco	00	2.04	.86	68	50
San Jose	00	1.59	.81	72	46
Fresno	00	1.58	.62	80	48
Independence .....	.10	1.11	.61	78	32
San Luis Obispo .....	.00	3.72	.93	76	46
Los Angeles .....	.01	3.31	.35	72	50
San Diego	00	.91	.32	66	52

Community Frost Alarms.

Fruit Districts the State Over Are so Specialized that this Story May be Used in Most Deciduous District as Well, Wherever Loss of Crop by Frost Costs More than Frost-Fighting Equipment.

[Written for Pacific Rural Press.]

About 400 orange growers around Pomona go to sleep on cold nights with easy minds, knowing that if any of their 4500 acres are threatened with frost, and not till then, they will be awakened in time to light the fires. It was for this purpose that the Pomona Valley Orchard Protective Association was formed some time before the big freeze. Smudging in those days was considered by many to be a community nuisance, and vicious opposition was experienced by those who sought to drive Jack Frost away by burning coal or oil or asphalted shavings "to heat up all outdoors." Such measures filled the parlors with soot, and also spoiled the looks of oranges and trees.

Opposition Overcome.—But when the deep wide river of cold flowed over the mountains, slowly enveloped the foothill orchards, and flowed on down through all the citrus belt to the dairy lands beyond, many whose life savings were in their orchards saw their hopes blighted as the trees were frozen.

One of the busiest spots in a busy land on those winter nights was the office of J. E. Adamson. He had charge of the riders who made ceaseless rounds of the thermometers hung in orchards of Protective Association members. It was he who received the reports of the riders, mapped the temperatures, watched the progress of that cold air river, and gave the word to telephone central when time came to rouse a certain "block" of orchardists that they might fire the frost king. That they saved their orchards during such time of disaster, overcame the opposition to "smudging." At this writing, in January, 1916, there is no opposition, and practically every orchardist is a member of the Protective Ass'n, if he has frostpots between a line west of San Dimas, another east of Ontario, one about a mile south of the Southern Pacific tracks and a fourth four miles north of that railroad where the hills rise too high for citriculture.

How They Do It.—The system now is to have the district mapped into 17 blocks, each of which is intended to include all orchards likely to need firing at once. The blocks are also somewhat regulated by the farmers' telephone line locations. About 140 thermometers are located at significant points where they will best indicate approach of frost. These are blocked off into seven "runs" averaging about 12 miles each.

The headquarters of the Ass'n of a cool night are at the Park Ave. packing house of the Pomona Fruit Growers' Exchange. A thermometer there tells the maximum temperature of the day. This is important in judging whether there will be freezing that night. If the ground, trees, and fruit are warmed during the day, they can stand much lower temperature without damage that night.

Avoids Unnecessary Firing.—As

Mr. Adamson says, it is almost as important to know when not to light the fires. Every time they are lighted, there is soot in the air, on the trees, fruit, and men. Oil or fuel is burned at considerable cost, and must be promptly replaced. Men must be called to work in the dirty night. Such disagreeableness is to be avoided. One man a few weeks ago complained that he had been called to light the fires when his thermometer read 32°. On account of his telephone line, he was in a block in which it had gone down to 26°. He will be notified with those in another block hereafter.

Activity on Frosty Nights.—When at sundown, a frosty night seems imminent, either Mr. Adamson, who is also weather reporter for the Government, or H. E. Walcott, manager for the Exchange, await notice from the packinghouse night watchman that the temperature has lowered to 34°. He then takes charge and calls up several dependable growers in various parts for reports on temperature.

The riders are started when the thermometer reads 31 or 32°. They aim to start so that all seven of them are reading their first thermometer at once and so with the rest of the 20 thermometers. These men are paid \$5.50 per night and they make three to five trips, depending on the rapidity of falling temperature. They report at the end of each trip the temperature at each thermometer. If anything unusual shows up they report by telephone. They travel by motorcycles and automobiles, the latter being faster as a rule.

Temperatures Recorded.—The district is mapped into the 17 blocks, numbered by hundreds. On this large map, only the principal roads are shown and a circle represents each thermometer. The circles are identified by consecutive numbers prefixed by the "hundreds" number of that block. As the riders report, the temperatures are marked with a fine pen inside the corresponding circles.

On a frosty night many growers get impatient, and sometimes it nearly keeps one man busy answering the telephone calls of growers who want to know the latest on thermometer number "00" which is located near their orchards. It is no trouble to locate that thermometer on the map by its number and to tell its record.

Injurious Temperature Varies.—Any report after the first shows the rapidity of fall. If great, or if the temperature has been low the preceding day, fires are ordered soon. If there are blossoms or young fruit on the trees, protection will be required at higher temperatures. Orange juice freezes at 28° so prolonged exposure at 27° does not often injure the fruits. This season the thermometer has read 30° at 10 p. m. and only 27° in the morning. Even lemons are not fired for such conditions unless there is a lot of small fruit. This has not been the case this sea-

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son, so lemon orchards have been fired only four times and not all of the orange orchards three times. The riders were out three nights in November, five in December, and five in January.

During the present winter, the air has been moist at night, and fewer firings have been necessary because in damp air the fruit will not be injured by lower temperatures. But when the air seems dry, the judgment of the manager as to when firing should start is aided by taking hygrograph readings to show the humidity.

Telephone Girls Do Good Work.—When firing is likely, the Association pays two extra telephone central girls to be on the job ready for duty. When a block is to be fired, a telephone girl, with duplicate map and list of members, is told to call them.

On Mr. Adamson's line the alarm call is five rings. Each grower an-

swers the call telling the operator his number. She checks it off from her list. If any do not answer, they are called again and again.

Cost.—The cost of all this service last year was about three mills per gallon of oil burned. The year before that, the cost was about one mill on account of more oil having been used. The season of the big freeze, the cost was below one mill.

About \$500 per year covers the total cost for patrolling and everything. Besides this, the Association appropriated \$500 the year after the freeze, for experiments to find the best protection. Part of this was spent covering an acre of lemons with cheesecloth. It was a dismal failure. The rest was spent working on a gravity pipe system to convey oil from a central tank to the pots as it was burned. More will be heard of this later, as the experiment is still financially supported by the Association and seems to be proving out.

Coast County Orchard Cover Crops.

[Written for Pacific Rural Press by John J. Fox, Napa.]

The coast counties of the north and many other sections have only the winter rains to depend on, and our choice of cover crops is considerably curtailed. We cannot grow the melilotus, either alba or indica—because we have to plow just about the time it starts to grow. Hairy vetch is delicate, cow-peas are out of the question. So far as we have gone the bur-clover and purple vetch have given the best satisfaction, though some ground is so debilitated that it will not even grow a vetch or Canadian pea to make a decent crop by plow time. In these cases a good thick sowing of barley, oats, or rye generally produces a good crop to turn under by the middle of March and the probability is that the following year a crop of vetch, bur clover or field peas may be relied on to make a crop; if at seed time, weather and soil cultivation are good. Of the three cereals, barley makes the best crop with us, provided the ground is not too wet. Though it is the shallowest-rooted, and has the weakest powers of penetration, it is a gross feeder, stools better than any, and has great recuperative powers. From one to two hundredweight of nitrate of soda applied about three weeks or a month before plow time, shows up to a foot where it fell, producing a rich, deep, nitrogenous green in a foliage that has perhaps been rendered yellowish by a long-continued wet spell.

I am firmly of opinion that this stimulus (nitrate of soda) which reaches the tree roots shortly before the fruit sets, is a great aid to a good set. It stands to reason that good long, dark fruit stems on the prunes are better able to withstand slight thrips, scarring, or north wind than thin, attenuated stems. The short-stemmed stuff always falls off anyway. In our coast counties, it is good to get your cereals cultivated in in October. Bur clover should be sowed on top and lightly brushed in if touched at all; but not harrowed, or much of the seed would get buried too deep to germinate. Fifteen or 20 pounds per acre is enough. Vetches here do better drilled in than broadcasted. Rough-

ly, 100 pounds per acre of purple vetch makes a good crop.

The Horse Bean is one of our best cover crops. This will be discussed next week.

In the mountainous counties of California, the State Highway Commission is now building highways very successfully with convicts. The roads thus built cost one-fourth less than the engineers' estimate, and only half what similar work in the same locality cost when done by contract.

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California's Great Cattle King Dead.

[Written for Pacific Rural Press.]



The Late Henry Miller, of Miller & Lux.

Henry Miller, senior member of the widely-known firm of Miller & Lux, intimately associated with the beef cattle industry from the very beginnings of California's history (dating from the "gringo" invasion), died at his home in San Francisco Saturday, Oct. 14. He was born July 21, 1828, in Brackenheim, Germany, came to the United States in 1847, and to California in 1849. He arrived here with \$6 in his pocket.

The career of this remarkable character, whose executive genius and tireless industry amassed a principality in land rated at between 3,000,000 and 10,000,000 acres, lying in California, Oregon, and Nevada, on which graze bands of sheep and cattle beyond computation, has been variously estimated. And as if these outstanding achievements were not enough to absorb all the activities of his dynamic nature, he embarked in large projects of irrigation, grain and fruit raising, and numerous commercial enterprises, such as abattoirs, merchandise stores, banks, etc.

It has been urged that the concentration of such large land holdings in the hands of a single individual is inimical to the public weal, as not securing the best use of the land to the largest number of people depending on that land for subsistence. But it may be well doubted, considering the early period in the Coast's development covered by Mr. Miller's activities, whether the land which he controlled would have been bet-

ter used, or used at all, had he not appeared on the scene.

However, Death has ended the sway of the great land baron, and his colossal holdings will now in the fullness of time doubtless be broken up and devoted to intensive cultural purposes. After all is said, pro and con, of the usefulness of such a life, no one can withhold a meed of praise from the penniless little German butcher boy whose foresight, pluck, and indomitable industry carved out a career of accomplishment impossible to any not possessed of great virility and far-seeing vision. Another great pioneer has passed from the scene of earthly action, and his departure marks an epoch in California's agricultural development.

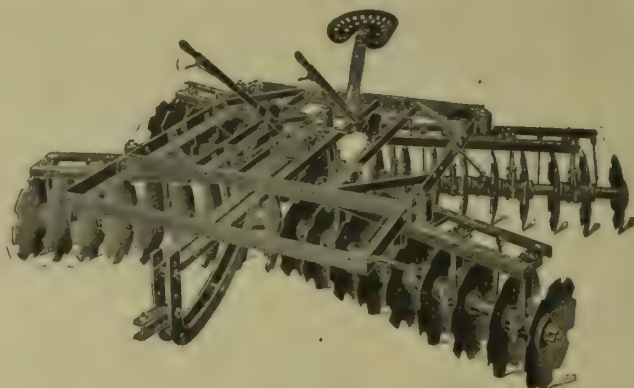
THE NEW LIMA BEAN ASSOCIATION.

[Written for Pacific Rural Press.]

Of the million and a half bags of lima beans which are annually grown in California, the recently organized California Lima Bean Growers' Association, with headquarters at Oxnard, Ventura county, have over a million bags signed up for the present year. Such is the advice of Frank Shipley, manager of the Association—which sprang into life March 29, 1916, after the failure of a previous bean growers' association through lack of growers' support.

The plan of organization of the

IMPERIAL Double Disc Engine Harrow



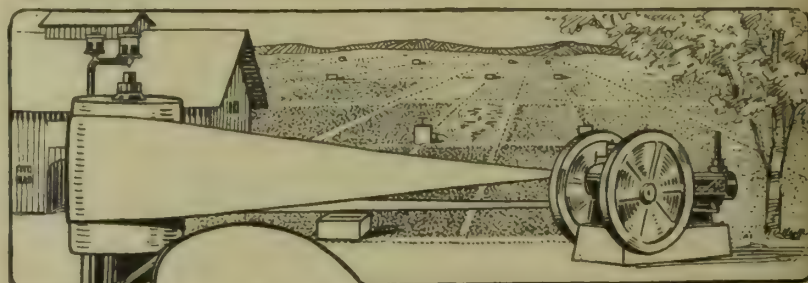
SPECIFICATIONS:

Axle, 1 1/4 inch square steel; Frame, 5/16x3 inch angle steel, double reinforced at the corners. Discs, 18 inch extra heavy, cutaway, 8 point. Bearings, hard maple with hand oil cups.

The principle of this machine is that of two Disc Harrows, one out-throw and one in-throw, built together under a strong, rigid, heavy angle steel frame. The forward Harrow works exactly like the ordinary Disc Harrow in cutting the ground and throwing it outward from the center. The rear Harrow works in the opposite direction, cutting the same ground and throwing it back. The result is equal to that secured by two workings with an ordinary Disc Harrow, but the soil is more thoroughly pulverized and the surface more effectively leveled. Requires but little more power than single disc of same width.

Write for Circular R. P.

Baker & Hamilton
SAN FRANCISCO.



Install a Dependable water system.

You need the Layne & Bowler Pump

If you need more water in order to produce more profitable crops then you need the Layne & Bowler Pump. It will be poor economy for you to buy a cheaper pump.

If you already have a well, no doubt we can show you a way to produce more water by simply installing a Layne & Bowler Pump particularly adapted to your requirements, and if you intend to sink a new well our Consulting Engineers can show you how to obtain the greatest efficiency with the least outlay of money.

Let the World's largest water developers solve your problems.
Write for Catalog No. 25.

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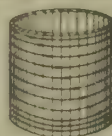
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LIME DOLLARS
MEANS
WHEN USED ON YOUR
HYDRATED OR GROUND ROCK
IN BIGGER
BETTER CROPS
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PACIFIC LIME AND PLASTER CO.
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REDWOOD TANKS—SILOS.

Thirty-five years in this business in Stockton. A 500-gal tank, \$8.00. A tank 6 ft x 2 1/2 ft., \$7.50. Other tanks equally cheap. I deal direct with the consumer, saving 10% to 25%. All sizes in stock. Clear dry redwood direct from the mill. Write for price today.

Latest improved machinery. Doors, Windows, Frames, Mouldings.
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Cut out the Middleman. Buy direct from the Grower. All varieties of cut flowers in season direct from the plants, sent by parcel post or express. Also floral work of all kinds. Try a sample order. 40 varieties of ferns in 4-inch pots now ready, 25c each.

GEO. N. TYLER,
Brookdale Nursery, Los Gatos, Cal.

new company is similar to the Walnut Growers' Association, in that locals are established in all lima bean growing districts. Delegates from these local associations form the directorate of the main Association, serving without pay. No capital investment is called for as the only expense incurred is the salary of the manager which, with other incidentals, is charged up to marketing expense at the end of the year. Selling is done through brokers located in all parts of the United States who finance themselves in their selling operations.

At the time of joining a local association, each farmer signs a contract binding him for a period of years, with the option of withdrawing the first of January of any year, but not later.

Each local is held responsible by the main Association for the beans going through their warehouse, but supervisors are also sent into the various local packing houses from the main Association.

As one of the objects of the Association is to overcome the wide fluctuation of prices, a basic price per pound is set after the size of the crop is determined, usually around the first of September. This year the latest price of 5.60 and 5.65 (named early in October after rains had damaged the crop) was withdrawn Oct. 13 until rain damage could be finally determined. The accurate reports it has from all districts will enable all its members to know what the selling price ought to be, and the Association will sell at that price when it shall have been determined. If the damage is not too great, they will make up their loss by increased prices. But the price will not be raised enough to prevent sale of the entire crop, as determined by the directors.

Next year the Association expects to adopt a brand of its own, under which every sack will be sold, but sufficient time for working out this trade mark selling system was not given the directors for the present year's crop.

BERMUDA FOR PASTURE.

To the Editor: I see in a recent Press you give Bermuda grass a good word. I was glad to see it. I think Bermuda is one of the best grasses we have. My Bermuda lies hot and dry and white until I need green grass to wean calves on; then about August last I turn the water on it. Of course, if the man has the water, he can turn it on before. Then it will start and will not need more than one-fourth the water of anything else, or you can keep it soaked. It "saws wood" under any and all conditions. If you water it only once or twice in the fall, it comes along and makes very good feed. If you water it plenty, it makes more. If you don't water it all, it is still there for another year. After a man gets a good stand of Bermuda, he is never bothered with reseeding; the gophers don't bother it. In fact, nothing seems to bother it. All this is from the standpoint of a stock raiser, and no other standpoint. Green feed—cheap green feed—is what the stockman wants. With Bermuda, if a man gets so he can get no water for the entire summer, he does not lose his stand; or if he

waters it in July say, it comes green; and green it will stay all summer, whether you water it any more or not. I water mine about once a month after I start it in August.

W. T. Jones.

Shawmut, Tuolumne County.

ALFALFA IN TRUCKEE VALLEY, NEVADA.

[Written for Pacific Rural Press by Bert S. Wolf.]

Truckee Valley was visited with much cold weather this past year; the consequence was that the alfalfa crop was about 75 per cent, cutting close to two tons per acre. However, the second crop cut about two tons to the acre; and as the hay prices are better than last year, a

fairly good revenue should be counted on for this year.

Very few farmers cut over two crops in this Valley. The first crop was cut about two weeks late this year. There is a fairly good water supply here. The bench land is irrigated about every ten days and the heavy land every two or three weeks. The cost of baling is about \$2.25 per ton. However, comparatively little is sold, as most farmers feed to stock.

FALL SPRAYING FOR SHOT-HOLE AND BLIGHT.

To the Editor: In your issue of September 23rd in regard to peach blight and shothole or apricots I think we should have all the information possible. There is entirely

too little fall spraying being done for this fungus, and I would strongly urge the necessity of a liberal application of the crude oil spray on both prunes and apricots as soon as the shedding of foliage will admit for brown scale, Italian scale, moss and lichens. I think too many of us are getting negligent with our fall clean up.

San Jose.

L. C. Sims.

[We have the story of how a man sprayed for peach blight, and the probable reason why he failed. We are glad to have Mr. Sims' suggestion, but it is well to know just how strong your crude oil is, before using it.]

A party of Japanese students and professors has been in Tulare studying the rice and fruit industries of Tulare and the Tulare lake region.



Have Some Sheltering Palms in Your Yard

MAKE YOUR HOME the most attractive place in your locality. It can be done easily. A large variety of palms, ornamental and evergreen trees, shrubs, climbing and trailing vines, flourish in our wonderful Pacific Coast climate. They don't cost much and they add value to the property. A few of them well placed will help to make the country home just as attractive as the city home.

Let us help you beautify your home grounds. We have a special department for advising you how to lay out your place—the varieties best suited to your soil and locality—how to plant, prune and care for stock. We'll be glad to advise with you free of charge. Write us.

Fruit and Ornamental Trees, Vines and Shrubs

—a wonderful stock for this season's planting.

We can supply your every want in fruit and ornamental trees, roses, vines, etc.; olives, oranges, pears, plums, apricots, peaches, walnuts, pecans, etc. Our stock is TRUE-TO-NAME, strong and healthy. Send us your list for prices and suggestions.

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Geo. C. Roeding 404 Holland Bldg.
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Mechanical Power on the Farm.

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of your experiences and troubles.

EUCALYPTUS WINDBREAKS NECESSARY AND NOT INJURIOUS TO ORCHARDS.

[Written for Pacific Rural Press.]

Lemon trees protected by windbreaks on the G. C. Power ranch in Ventura county have grown more in the past two years than in the four years before, because the windbreaks have grown enough to protect them from the raw ocean winds and fogs. Now over two-thirds of the fruit comes from the half of the orchard thus protected, according to L. G. Duval, superintendent of the ranch.

There are 150 acres of trees, divided into 50-acre blocks by eucalyptus trees interplanted with cypress which are also around the edges. The windbreak is not yet high enough to protect the lemons farthest from them on the lee side. Blocks of 33 acres with windbreaks not over 525 feet apart would be better, says Mr. Duval.

The eucalypti are eight feet apart in double rows 12 feet apart, with cypress trees set between. Some of them were pruned pretty high so the wind swept under them. Here, the first two or three rows of lemons are considerably whipped about.

Did you ever try to grow things near eucalyptus trees? We have, in San Mateo county, and the trees are being sacrificed. The roots feed everywhere and take all there is to get. Mr. Duval has found their roots 150 feet from the trees.

Tractor to the Rescue.—But the eucalyptus trees don't and won't hurt Mr. Power's lemon trees. A 75 h.p. tractor is hitched to a subsoiler with a four-foot standard; and the roots are cut eight feet from the trees. Having begun early, no roots big enough to feaze the subsoiler were encountered, and the rest of the roots have gone downward. No injury to the windbreak could be noticed. If some roots go under the cut and rob lemon trees, the subsoiler will be run through, 20 feet further out.

The subsoiler was bought by 11 neighbors who put in \$50 each, last April. It is of 1¼-inch plow-steel 16 inches wide and four feet long.

Improvement in the lemon trees is not yet noticeable on account of the necessity for the soil to recover, but a neighbor who had a 40-foot strip of alfalfa along his hedge got twice as much alfalfa since he cut the tree roots this spring, as ever before.

The practice was undertaken after Mr. Duval had taken a trip to the Rialto section in San Bernardino county, where he found 25-year eucalypti around 20-acre orange orchards in which even the first row showed no injury from the windbreak trees. Their roots had been cut with subsoilers regularly at a contract price of 12½ cents per rod. It is easy if done annually, beginning when the trees are young.

TRACTOR BEET AND SPINACH FARM.

[Written for Pacific Rural Press.]

The first three Sandusky tractors used in California were bought by three different Japanese farmers. The third one was bought by J. Masuno of Los Angeles county, and he has two now.

While we were attending the Puente demonstration, we saw Robert Ikeda driving one of them to haul sugar beets to the station. Mr. Ikeda speaks good English, and here are the facts as he gave them to us.

They have wagons, with long beds and 5-inch tires, on each of which they haul a 5-ton load of sugar beets. This is taken out of the field by the tractor on low gear, then hauled on the road on high gear at fast speed to the car. This wagon is left at the car to be unloaded, while an empty wagon is hauled back to the field. Two shorter wagons holding 8 tons have been pulled from the field without much effort; but these together are longer than a car and cannot well be unloaded without moving, which is not so feasible with the tractor gone. When hauling, about 20 gallons of distillate are used per day of 10 hours, but when plowing, the engine works nearer to its capacity and steadily. A gallon of 47-cent cylinder oil per day is used in hauling. The tractor is well cared for.

The 100-acre field had been prepared for beets last spring with the tractor. It is subirrigated, too much in some parts, but the tractor doesn't mind wet feet. Four 10-inch moldboards were pulled 8 inches deep. An 8-foot disk followed by an 8-foot Sweet harrow and that by a three-section steel harrow were pulled over the ground three times, on low gear. Then the planting, cultivating, and digging were done by horses on account of the broad wheels.

While one tractor was hauling the beets, the other was plowing 50 acres of the beet field, on which spinach was to be planted for a winter crop, which had been already contracted to the cannery for more money per acre than from the beets.

THE SANDUSKY TRACTOR

THE LITTLE FELLOW WITH THE BIG PULL

15 Draw Bar H. P.—35 Belt H. P.

We guarantee THE SANDUSKY TRACTOR to be 15 H. P. at the Draw Bar and 35 H. P. on the Belt; to handle four 14-inch moldboard Plows, eight inches deep where a big team can pull one 12-inch Plow six inches deep, to run Belt Machinery up to a 32-inch Separator; to have one-third reserve over its Draw Bar rating and for one year against defective workmanship and material.

Your Money Buys a Tractor, and Your Money Keeps It Going. Why Not Investigate How Little It Will Cost You to Run a "SANDUSKY"?

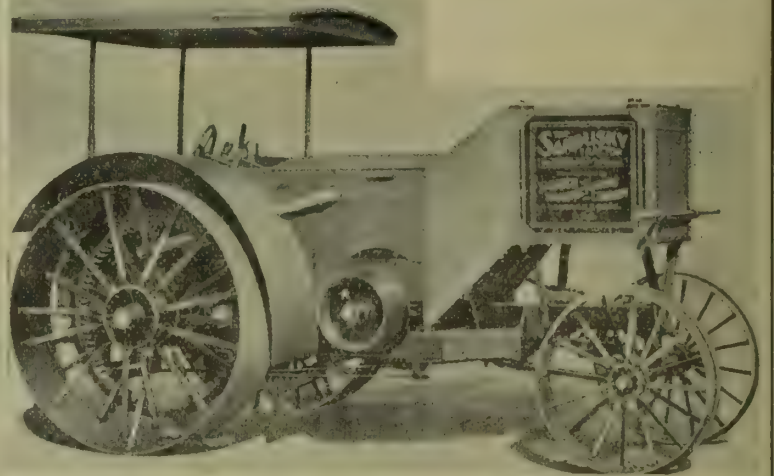
Try it before you buy

We give you a 3-day free trial on your own farm, demonstrating its ability to fulfill our guarantee. A handsome 40-page booklet fully describes the design, construction and ability of "The Little Fellow with the big Pull." Sent on request.

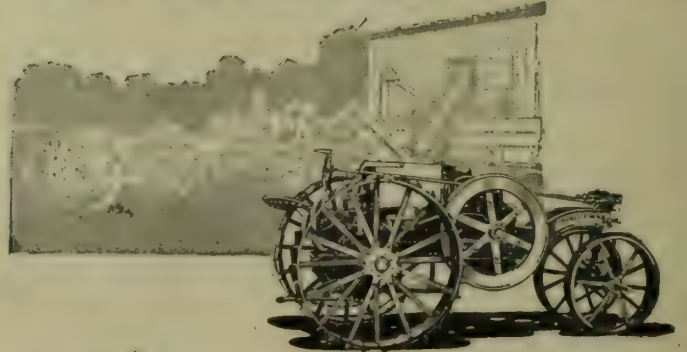
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A Plain Statement of Fact



Mogul 8-16: \$725 Cash f. o. b. Chicago

AT the present prices of gasoline and kerosene, no farmer can afford to use a gasoline tractor. Gasoline averages now over 100 per cent higher in price than kerosene and is likely to go higher rather than lower, according to men who know the oil business.

Again, it is neither safe nor economical to use kerosene in a tractor not specially designed to operate on kerosene. Merely changing the fuel mixer is not enough; the design of the whole motor must be changed.

Mogul kerosene tractors and gasoline tractors of equal power sell for about the same price and use practically the same amounts of fuel. On that basis a Mogul 8-16 tractor saves each year, in fuel bills alone, about a third of its price.

If you are considering the purchase of a tractor this year, give these facts careful study, from every point of view, before you spend your money.

Mogul tractors are designed specially to operate on kerosene and to give their users the full benefit of this advantage. There are two sizes—Mogul 8-16 and Mogul 12-25. Write us for the story of kerosene before you buy any tractor.

International Harvester Company of America

(INCORPORATED)

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San Francisco, Cal. Spokane, Wash. Salt Lake City, Utah



YUBA BALL TREAD TRACTORS

If it is important to you to get good cultivation done at the right time, then you should investigate the Yuba Ball Tread Tractor.

May we add your name to our mailing list?

THE YUBA CONSTRUCTION CO
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433 CALIFORNIA ST.
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Belting

That Must Make Good



When you buy a rubber belt you should know what service it will give you or have the belt service guaranteed by a responsible firm who will make good in case the belt falls down. Every belt-buyer should know how to judge a rubber belt, and we would like to send you a free sample of **Test Special** together with our folder that will tell you just how to judge a rubber belt so that you may know just what service you will get from any belt you buy.

Fill out the coupon and mail it to us and we will recommend a belt that we will unqualifiedly guarantee to do your work satisfactorily. We have had seventy years' manufacturing and selling experience.

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Established 1846

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Send me samples of Belting that you will guarantee to give satisfactory service on my work and quote prices delivered at _____ Cal.

☐ Gasoline Engine
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Diameter of Driving Pulley _____
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Kind of Drive ☐ Cross ☐ Straight ☐ Perpendicular

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A pocket memo booklet giving speed and power tables will be sent FREE to all who mail this coupon.



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Water Troughs,
Windmills, Frames,
and Towers.
Steel and Wood.
Prices the lowest.
BROWN & DYSON
640 So. Center St.,
STOCKTON, CAL.

CO-OPERATIVE BEAN THRESH- ING.

[Written for Pacific Rural Press.]

Community ownership and use of a tractor, we are as yet unable to locate, but community ownership of a lima bean thresher was recently called to our attention by one of the owners, E. E. Dunning of Ventura county. Eight bean farmers have \$8,000 invested in the machine, which includes a 30 h.p. steam engine. They have run it 10 or 12 years, according to Mr. Dunning.

Ventura county beans being raised not only on the level ground along the ocean, but also on the hillside bordering it, there is a very considerable and convenient season for threshing. Mr. Dunning's 70 acres being on level, somewhat subirrigated land, his crop is usually latest in maturing and last threshed. It is expected to yield 35 sacks per acre and sell for \$12,000 or more this season, being harvested about the second week in October. The vines are two-thirds as big as one's finger and full of unmaturing pods.

The machine threshes 1500 to 2000 bags per day if dry, and requires a crew of 50 men and a dozen teams. Seventy acres are threshed per setting. Two men feed the machine, not stopping to spread the matted vines at all.

The machine is busy three weeks in the hills before any of the owners' crops are threshed, for they all live on the level. They charge 25 cents per hundred to thresh for outsiders and \$1 per ton for recleaning and weighing into 80-pound sacks.

One man is given charge of operations and crew. He decides whose fields are ready and whose are not. After the machine comes down from the hills, it takes the fields of its owners in order as it reaches them. Those that are not ready are skipped; and threshed on the clean-up return trip. If any member insists on threshing his crop too green, he is charged extra.

These same eight co-operators until recently owned their own irrigation plant, but that will come later.

FRICTION IN PIPE.

To the Editor: What size cement pipe would be necessary to carry irrigation water from a No. 4 pump 2000 feet? The land falls about 2 feet in this distance, but I can deliver the water a few feet higher in a standpipe. Also, if 600 feet is too long to run water in furrows? The soil is a heavy loam (chocolate).—H. C. J., Stockton.

[Answered by Prof. S. H. Beckett, University Farm.]

Under the conditions stated I would advise the use of a ten-inch diameter pipe line. It is assumed that the centrifugal pump referred to discharges 450 gallons per minute. This quantity when delivered through a ten-inch concrete pipe line produces a friction head of 2½ feet per 1000 feet of pipe. With a fall of two feet in 2000 it would be desirable to elevate the water at least 3 feet in the stand pipe.

If the land to which you refer takes water readily and if it is on a flat grade (less than about 2 inches per 100 feet), then 600 feet is too long a run in furrow irrigation. Under these conditions, it is generally concluded that a length of furrow from 300 to 350 feet is most desirable. If on the other hand, the soil takes the water slowly, and if you are able to control the water

Do It Electrically



ELECTRIC APPLIANCES in the household, not only add to the convenience of all members of the family, but they are economical and time-savers.

ELECTRIC APPLIANCES include CHAFING DISHES, COFFEE PERCOLATORS, VACUUM CLEANERS, ELECTRIC IRONS and every other appliance that is needed in the modern home, not forgetting **ELECTRIC FANS**.

We carry these appliances in many of our branch offices, and will be glad to have you call and inspect them. Where we do not carry them we will be just as glad to give you our expert advice.

"PACIFIC SERVICE" is always "At Your Service."

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HEAD OFFICE, 445 SUTTER ST., SAN FRANCISCO.
Branches in all principal cities and towns of North Central California.

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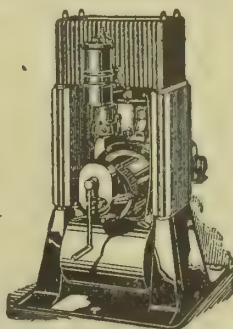
Being made from Asphalt-base crude, Zerolene maintains its full lubricating value *always*. It insures your motor against excessive wear.



ZEROLENE

the Standard Oil for Motor Cars

Sold by dealers everywhere and at all Service Stations of the Standard Oil Company (California)



Electricity for Farm Homes

At one-third cost of juice from Power Company, (thus includes interest on cost of plant). It is the simplest and most economical plant on the market.

No Batteries - No Switchboard - No Rheostat.

Will operate 50 lights 7½ hours for 11c. Will also operate electric fans, irons, small motors, etc.

If your buildings are not wired, send us plans and we will give you full instructions so that you can wire them yourselves. Material furnished at lowest cost.

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P I For Every Purpose NEW Threads & Couplings Hot Asphaltum Dipped

Second-Hand and NEW

P E Fittings and Screw Casings Valves Guaranteed for Pressure

Pacific Pipe Co.

Main and Howard Streets,

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supply into each furrow, you may get satisfactory results by using furrows 600 feet long.

Ninety per cent of the registration and license fees paid in 1915 by automobilists to the states, or \$16,213,387, was spent for the building and maintenance of county and state roads, according to the Dept. of Agriculture. In gross revenues received from this source, California led with \$2,027,432; New York second.

LABELS FOR FRUITGROWERS

Beautifully lithographed stock labels ready for immediate shipment. Write for free samples—address Label Department.

SCHMIDT LITHOGRAPH CO.,
San Francisco.

Dewey Strong & Townsend



General Agricultural Review.

FIELD CROPS.

Sweet potato canning is now in full blast at Selma.

Approximately \$170,000 is the value of the season's hop crop in Butte Co.

The year's pack of the Lake Co. Packing Co.'s pack of beans will be about 25,000 cases.

Butte Co. Horticultural Commissioner Earle Mills requests quarantine against Oregon nursery stock.

Manager Murphy of the Phelan Ranch, near Oroville, is preparing a new tract of 600 acres for rice culture.

The Sacramento Valley Sugar Co. is signing up farmers to raise beets for the operation of their factory next year.

The yield per acre of hops in California for 1916 is 1800 pounds per acre as compared with 1,484 pounds on a ten-year average.

Arizona grows several trees which produce rubber, chief of which is the guayule, yielding 8 to 29 per cent of rubber in the dry shrub.

The contract for the erection and equipment of the new \$1,000,000 beet sugar factory on the Whitehall Estates, near Tracy, has been let.

San Francisco exported 8,838 bales of cotton during the week end-

ing Sept. 15, 1916. A Government forecast made Sept. 25 places this year's production of cotton at 98,000.

The California Lima Bean Association Oct. 16 paid its first dividend of 2½¢ per pound on account of beans delivered in September. The association will pay on the 15th of each month 2½¢ per pound on beans delivered the preceding month.

The condition of the cotton crop of California, as per U. S. Bureau of Crop Estimates, was 93 per cent of normal on Sept. 25, compared with 56.3 per cent for the United States. The indicated yield per acre is 484 lbs., as compared with an indicated average yield for the United States of 156.3.

DECIDUOUS FRUITS.

Orchardists of Tulare Co. are to ask Congress to appropriate \$50,000 to fight the squirrels in California and other Western States.

Eastern jobbers and handlers of California dried fruits are praising the California Peach Growers' Company on the excellent grade of dried peaches it is turning out to the trade this year.

Napa County Horticultural Commissioner, John J. Fox, writes that the early sown orchard crops in his district are already showing up green and others are getting their seed sown now.

The consolidation of the great fruit, vegetable and salmon canning corporations of California is about completed. The new concern will be known as the California Canning Corporation, and will be capitalized at \$27,000,000.

Sec'y W. J. Hill of the Cal. Cured Fruit Exchange advises that their former cashier, due to whose manipulations the Exchange quit business, has been committed to the Superior Court for trial on the charge of embezzlement.

In the apple forecast issued recently by the U. S. Dept. of Agriculture the combined crops of California, Oregon, and Washington Newtown Pippins is estimated at 584,000 barrels, an increase of 22 per cent over last year.

Word reaches us from San Jose that a committee of promotion, engaged in organizing the State selling association of prune and apricot growers, gave a banquet last Monday to H. S. Hersman, a banker of Gilroy, who has just been elected chairman campaign committee.

In our issue of October 14 we stated that the Sixth Annual Apple Show of the Farmers and Apple Growers' Association would be held in Ukiah from Oct. 25 to 28 inclusive. This is an error. Mendocino is the home of the Association and all its annual events are held there.

J. C. Teague of Hanford says shellac is better to cover cuts in trees with than paint, as it lasts much longer. One application will last for a year. He claims that a large part of the root knot common in Kings Co. is due to the fact that cuts are left bare, giving the rain a chance to penetrate.

The "stop-in-transit" privilege has been adopted by the transcontinental lines. The importance of the "stop-in-transit" privilege rests in the widening of markets for California fruits, for shippers can stop a car of fruit at any point between this State and the Atlantic coast, unload a portion of the car and then ship the remainder of it to its final destination. For this the shipper pays 5 cents a hundred pounds.

CITRUS, NUTS, SEMI-TROPICAL.

Five cars of early navel oranges are being picked from the Merryman orchard, near Exeter for shipment to Australia.

Reductions in transcontinental freight rates will become effective

Seed for Cover Crops

VETCH
BUR CLOVER
CANADA PEAS
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and

MELILOTUS INDICA (Yellow Sweet Clover)
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Our Sweet Clovers are scarified, insuring high germination.

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ALFALFA SEED BAGS FOR SALE.

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HAS BEEN CONTINUOUSLY MAKING
WAGONS—BUGGIES—HARNESS
FOR EVERY FARM USE SINCE 1852

SEE THE STUDEBAKER DEALER

FEED THE SOIL AND THE SOIL WILL FEED YOU

California Fertilizer Works

Manufacturers of Complete Fertilizers of All Kinds.
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Complete and Up-to-date Laboratory for Analysis of Soils. Analyses and Advice Given Free to Our Patrons.
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OFFICE, 444 PINE STREET, SAN FRANCISCO

Patronize Home Industry
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HAUSER'S ORGANIC FERTILIZER

100% Efficiency

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BUILDING MATERIAL

We quote positively the lowest prices on all kinds of good building material. Send in your lists of needs now and we'll gladly give you an estimate. Our low prices will convince you that you can save as high as 25%.

NOTE THESE PRICES:

Good Sound LUMBER—
1x4 to 1x12 \$20. M up

Sanded ROOFING PAPER—
Guaranteed 5 years, \$1 per sq.

Write for sample.

PAINT, \$175 grade, now \$120.

SASH, 2-light windows—75c

Large stock of fence and shed lumber. Full line of hardware, fencing, etc.

Our prices are rock bottom because we're out of the High Rent District.

ROBERT HOLMES LUMBER CO.

2150 EAST 7th ST.
LOS ANGELES

Don't Let My Engine Prices Fool You

WITTE Engine should be compared only with engines selling for from double to three times as much. I build the very best I know how, regardless of price and profit and sell direct from factory to user at factory prices. No dealers.

WITTE ENGINES Built by Experts

are so good that the United States government, states, counties and cities buy them to run irrigation works, light plants, water works, etc. where absolutely dependable and economical power is required. When you buy a WITTE you will get just as good an engine as the government buys.

—Ed. H. WITTE.



2, 3, 4, 6, 8, 12, 16 and 22 H.P., sizes in Stationary, Hand Portable, Portable and Saw-log types and in styles to operate on Kerosene, Gasoline, Naptha, Gas, etc. Full 20 to 60 per cent over ratings 90 days trial; 6-year guarantee; cash or easy terms. Write for new free book, "How to Judge Engines", price 10c.

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2861 Oakland Ave., Kansas City, Mo.
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Let Us be the
Cafeteria
For Your
ORCHARD

A WELL fed orchard can deliver the goods.

☞ A starved one will return a starved crop only.

☞ A green manuring crop inoculated with *Westrobac* furnishes the food supply.

☞ We can furnish *Melilotus Indica* (Scarified) seed, *Recleaned Vetch* seed, *Bur clover* seed and the best of *Bacteria* (*Westrobac*)

ARE YOU GOING TO PLANT ALFALFA?

See or write us First

WESTERN SOIL BACTERIA CO.
442 Sansome St.
SAN FRANCISCO, CAL.

on November 24. Lower rates will obtain for walnuts and almonds.

The Naranjo orange groves near Exeter have changed owners for a consideration of \$75,000.

The new crop of Sicilian almonds is good. The production will be about 250,000 bags of 220 pounds each.

The lemon crop was greatly aided by recent rains. No irrigation will now be necessary for two months, says a lemon grower of Santa Barbara.

Of the \$1,635,619 worth of olive oil imported by Brazil in 1915, the United States sold to the value of \$657 only. Portugal was the chief source of supply.

Considerably more than \$1,000,000 was received by the Corona citrus growers for fruit during the 1915-16 season. The total number of cars shipped out was 1064, 486 of oranges and 578 of lemons.

The Oakdale Almond Growers' Association will provide the almonds for exhibits which will be made at all the food shows in the East by the California Almond Exchange. The almonds are to be prepared according to variety.

The Orange County Fruit Exchange of Santa Ana, in its annual report, just issued, shows that it shipped 285 cars of oranges and lemons during its last fiscal year for which it received \$2,450,326.

The fourth semi-annual meeting and exhibit of the California Avocado Association is to be held in the Maryland Hotel, San Diego, Cal., October 30 and 31. The directors have decided that the exhibit shall be educational only and non-competitive.

California's olive crop this year will be far below normal, but the orange, lemon and grapefruit crops will be "bumpers" says Deputy State Horticultural Commissioner George P. Weldon. The olive crop will be only 10 to 70 per cent of the normal yield.

There are about 296,525 acres of olive groves in France. The French olive yield from 1905-1914 averaged about 11,800 metric tons, which is about 18 times less than the Spanish production, and 15 times less than that of Italy. The olive production of Algeria and Tunis also exceeds that of France.

The annual report of the San Bernardino County Fruit Exchange, including in its membership, Colton, Hemet, Highgrove, Rialto, Fontana, and Bloomington, distributed 829 cars of citrus fruits the past year, of which 756 cars were oranges of a moneyed value of \$650,000. Eighteen cars of oranges were shipped to Europe.

GRAPES.

The Lodi wineries of George West & Son expect to pay out a total of \$350,000 for grapes.

Nearly a ton per acre of Thompson raisins were picked from two-year vines last fall by F. H. Booth of Kerman.

The American Consul at Patras, Greece, reports that the total new currant crop is estimated at 100,000 tons, or two-thirds crop.

The cause of sugared raisins is being sought by a chemist recently employed by the Associated Raisin Co. No rule has yet been found that holds good in all cases, writes W. M. Giffen.

Wylie M. Giffen writes us Oct. 16 that the Company is estimating that 25 per cent of the Muscat crop is ruined beyond all hope of saving; 50 per cent will undoubtedly be saved; 25 per cent still in doubt.

The G. Magliavacca Wine Co. have been crushing grapes at their big cellars in Napa at the rate of 250 tons per day. Growers have received \$22 per ton in cash for the products of their vineyards.

MISCELLANEOUS.

The appointment of a Farm Adviser for Tulare county is being agitated.

Yolo county plans to take advantage of the farm loan bureau act at an early date.

The cash road and bridge expenditures of the United States averaged in 1915, \$109 per mile.

A free market where producers and consumers can meet for the sale of home-grown or manufactured products has been opened in Santa Rosa.

The Holland Land Co., which owns 20,000 of the 25,000 acres of land in the Netherlands district of Yolo county, will cultivate it for the first time next year, sowing mostly to beans.

The Forest Service in California

is co-operating with the University of California in the study of mill waste in the redwood belt that might be used in the manufacture of grain alcohol.

The value of property in the State of California has increased \$266,699,690 during the year 1916. One of the chief causes is the greater acreage of land assessed this year than last.

Lodi objects to being left a mile off the State Highway between that city and Stockton and has petitioned the State Highway Commission to adopt a new route for the Highway to pass through Lodi.

The State Dept. of Weights and

Measures, in an effort to stir up public interest in honest practices involving the use of weights and measures, has declared the week from Oct. 22 to 28 Weights and Measures Week.

According to the Government Crop Report issued Oct. 9 for the State of California, the condition of oranges is 93, compared with the ten-year average of 88; lemons 94, compared with the ten-year average of 88; prunes 71, compared with the five-year average of 78; almonds, 80, compared with the five-year average of 75; olives 82, compared with the five-year average of 82; walnuts 81, compared with the five-year average of 83.

26 Extra Features
73 New Conceptions

Mitchell
MID-YEAR
MODEL

20% Extra Value
Due to Factory Efficiency

\$6.62 Per 1000 Miles

Bate-Built Mitchells Have Run 200,000 Miles

Two Bate-built Mitchells have already exceeded 200,000 miles each. One has to its credit 218,734 miles. Seven have averaged 175,000 miles each.

Think of 200,000 miles. That is forty years of ordinary service. And at \$1325 a Mitchell which did that would cost \$6.62 per thousand miles.

Mr. Bate's Lifetime Car

John W. Bate has aimed in the Mitchell to give you a lifetime car. The Mid-Year Mitchell is his 17th model with this aim in view. It is the final result of 700 improvements.

Part by part he worked for perfection. To every part he has given at least 50 per cent over-strength. Castings are almost eliminated. There are 440 parts which are drop forged or steel stamped.

Chrome-Vanadium steel, costing up to 15 cents per pound, is used to meet major strains. The Bate cantilever springs are so strong that not one has ever broken.

The Mid-Year Mitchell, with its 127-inch wheel-base, weighs under 3000 pounds. It runs from 16 to 22 miles on a gallon of gasoline. Yet the high-grade materials make it the wonder-car in endurance.

20% Extra Value

A car of this grade has never before been sold at the Mitchell price. In addition, the Mitchell has 26 extra features — things which other

cars omit. We include them all in the Mitchell without extra price, though they cost us this season over \$2,000,000.

In the Mid-Year Mitchell you get a 22-coat finish. You get French-finished leather. You get 73 new conceptions, all added within a year. You get all the best new ideas which our designers found in 257 of the latest European and American models.

Compared with other cars in this class, you get, we believe, at least 20 per cent extra value. And that is all due to our factory economies, worked out here by John W. Bate.

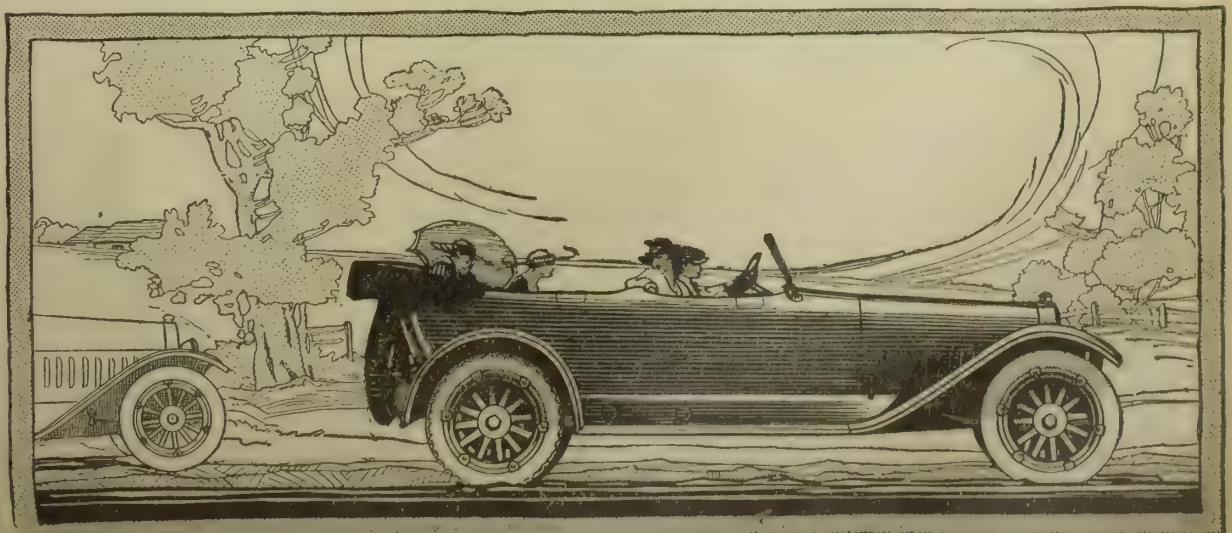
This efficiency engineer designed all our new buildings. He equipped them with 2000 up-to-date machines. The result is a model plant, where our factory cost has been reduced one-half. That is the reason for the Mitchell extra values.

You will want these extras in your car. You will want this strength and endurance. You will want these new ideas and touches. Go and see what they mean to you, at your nearest Mitchell dealer's. If you do not know him, ask us for his name.

He will show you a list of great engineers—men of nation-wide fame—who bought the Mitchell for their personal cars. You will gladly take their judgment on the best-built car. (124)

Mitchell Motors Company, Inc.
Racine, Wis., U. S. A.

**\$1325 F. o. b.
Racine**
For 5-Passenger Touring Car
or 3-Passenger Roadster
7-Passenger Body, \$35 Extra
Equipped with Demountable Top Only.
\$300 Extra
High-speed economical Six—48 horsepower—
127-inch wheelbase. Complete equipment, including 26 extra features.



Livestock Facts and Fancies---V.

[By the Editor.]

Last week we tried to emphasize the value which purebred individuals may have when they are the embodiment of the best animal capacity and potency. These powers are developed and concentrated by the intelligence of man, in selection of individuals for reproductive association and in selection of their progeny for their approach to or possession of the type he recognizes as indicating the phase of usefulness he desires to attain or to perpetuate in his herd or flock. To succeed in this effort a man must have wisdom and power in the selection of individuals and (as shown by the reference we made last week to the sale of the Shorthorn cow Eighth Duchess of Geneva for \$40,600) a man is sometimes justified in paying a very high price for an animal—if he knows how great a concentration of human effort and achievement there is in the particular animal, and he needs it as the foundation of his own future work. On the other hand, if the buyer does not know exactly what there is in the animal and has no definite idea of how he is to use it in his business he is likely to be robbed by a long price, and we are not sure but that he ought to be.

In a way, the real breeder, who knows what he needs and why, and the make-believe breeder, who is simply "in the game" or trying to get in, always appear to us as something like fishermen. They are both sitting on the banks of deep waters in which there are all kinds of fish. The deep waters are the fathomless depths of animal capacity for service to mankind. The fish swimming in these depths are the individual purebreds, good and poor specimens of breeds which are also good or bad—according as the catcher's purpose and design are like or unlike the purposes and designs which have ruled in the development of the different breeds. The intelligent and experienced fisherman will preen his fly, cast his line afar with light, free hand, and hook a bass surely and swiftly as the fly strikes the rippling surface. The unskilled fisherman will sheathe his hook in a worm, plunk it down in sluggish backwater and soon make fast two suckers—one on each end of the line—and both of them useless for high breeding purposes. Of course the expert angler will scout our illustration on the ground that all kinds of fish do not live in the same waters, but we must still maintain that for purposes of illustration they do. The great deep ponds of breeding enterprise do contain all kinds of fish: and, strange to say, there are sometimes sharks in the water and suckers on the bank. Stranger still, too, the sharks are sometimes amphibious and crawl out on the banks to bite the suckers. It is surely great sport: this "live stock game."

By the way, we do not like that too common expression "the live stock game." And we have been told that, as an agricultural journal, we "are not playing the livestock game right to get what there is in it." And we have to say that if it is simply a game we are out of it. Would not we look sweet at our time of

life clad in a sport-suit, with our lid angled on the rear of our bald area, straddling two posts in a paling and shooting a camera at our assistants as they make monkeys of themselves "playing the stock game right"—which seems to be a studied effort at excitement, inflation and camaraderie which shall entrap long purses for trade exploitation. It may not be particularly harmful; for it has an automatic cut-off for the exclusion of real farmers, but we do not like it because it has no real relation to great breeding purposes and the development of the State by them. Nor does it encourage farmers to seriously consider the improvement of their live stock and the systematic breeding of purebreds, for that purpose and for the legitimate trade on real values. There is a legitimate enterprise in this direction which shall raise the quality of our livestock products and make producers' lives more comfortable and prosperous. There are scores of breeders who are working intelligently and with good investment of capital to produce an ample supply of purebreds for honest and profitable producing purposes. We believe in their motives and methods. They are the men who should lead and control in this business. We have more respect for them than for the bunch of near-breeders who taunt us with "not playing the game right to get what there is in it." It is not a game: it is a serious business.

Oh well, here we are again, scolding like a fish-wife! It is probably the result of the livestock-fish metaphor in which we indulged in a preceding paragraph. And yet we see so much in the honest, genuine prevalence of purebred livestock in this State that it makes us cross to think of hollow, perverting ambitions and efforts which will advance neither man nor devil—for it will "hoist with their own petard" even those who think they see gain in it. Here we are a great commonwealth needing such development as purebred animals, which have been advancing for countless centuries toward our needs, can give us. We need more and better dairy products, and better manufacturing of the milk from better cows is the only way to get it; and such cows should be in the hands of all dairy farmers. We need more and better beef and mutton and these can only come from better feeding of animals full of the qualities and capacities of the purebred. We need more and better pork for our own use and to justify packers in embarking in great enterprises for export. In these and other lines we need multitudes of purebred animals. To get them into farmers' hands they must be really good and be sold at reasonable prices. To supply such a demand warrants farmers giving attention to understanding and breeding purebreds. To supply such a demand warrants those who have land and capital in establishing high-class breeding flocks and herds. But to justify the investment these rich men must personally know what they are at (as many other rich men have reached high under-

standing and expertness in breeding), or they must secure herdsmen who are masters of their art and not merely "cow-boys." There are young men now emerging from instruction on the University Farm, who cannot start for themselves for lack of capital, but who would manage a rich man's enterprise in breeding in an intelligent, constructive way, and if given good foundation stuff at fair prices they will bring through a purebred enterprise with great personal satisfaction and with profit to the capitalist who undertakes it aright and provides for it generously. But there is no "game" about it. It must be built on the life of a man—either that of the principal or of a wise and devoted employee who

is given interest or compensation, or both, to make him content and keen to exercise almost creative functions upon the purebred creatures placed in his charge. If the rich man thinks livestock is a "game," like the dead stock of the bucket-shop, to jump into and out of at the tip of a gamester, he had better buy a lot of cut-rate lions and start a film factory. As a "game" this would be livelier and probably more profitable.

That the swine industry of Kings county is an important factor in the agriculture of that county is shown by the fact that \$105,400 worth of hogs were recently shipped in one month to distant markets.



Sanitary Barn and Dairy Equipment

Catalogs and Barn Plan Books Free.

CALIFORNIA HYDRAULIC ENGINEERING & SUPPLY CO.
68 Fremont St., San Francisco.

BRIGHTON FARM

HOME OF

Grand Champion Berkshire Boar of California
CHOICE BOARS AND GILTS FOR SALE.

Also

15 Head Reg. Yearling Shorthorn Bulls
10 Head Reg. Shorthorn Heifers

Winnings at 1916 California Fairs:

24 CHAMPIONS

51 FIRSTS

30 SECONDS

Perkins, Sacramento Co., Cal. H. L. & E. H. MURPHY, Props.



SANTA ANITA RANCHO
ANOAKIA BREEDING FARM



FIRST ANNUAL SALE, OCTOBER 23rd and 24th.

ARABIAN THOROUGHBREDS: Two-year-olds, sired by Imported Stallion Ibn Mah-russ, head of our Arabian Stud. Dams are the choicest thoroughbred mares of Santa Anita Rancho.

SADDLE HORSES: Fourteen of them, some of which are sired by Ibn Mah-russ, world renowned imported desert saddle stallion, and Don Costano, a five-gaited Kentucky saddle stallion. These horses are mostly three-year-olds.

POLAND CHINA AND BERKSHIRE BOARS: Four to nine months old. Sired by famous Poland China herd boars—Banker's Boy and Glenview Wonder. And Berkshire Boars—Kintyre Laird, Grandson's Duke and Fashion's Longfellow 5th. The dams are from the very best blood lines. Most all these animals have winnings at World's Fair.

Write for catalogue.
HOLSTEINS: We will sell a number of young bulls. Some sires and grandsons of the noted Prince Gelsche Walker, and bulls from one World-Record cow and two California State-Record cows. Sixty females of the highest class will be consigned.

Write for catalogue.
WORK HORSES AND MULES will also be offered for sale.

WRITE FOR PARTICULARS.

Anita M. Baldwin,

W. H. TAYLOR, Superintendent.
Santa Anita, Cal.

State Dairy Bureau's Idea of New Laws.

Speaking of the new dairy laws and the manner in which they will be enforced in so far as the State Dairy Bureau is concerned, F. W. Andreason said among other things at the California Creamery Operators' Association's convention at Ferndale, Humboldt county:

"On the first of October all of our inspectors were instructed to devote their time principally to the enforcement of the new law until they are satisfied it is being complied with. We are going to see, so far as possible, that no milk is sold at retail except from cows that have successfully passed the tuberculin test, or unless it has been pasteurized. Being that so long a time has been allowed milk producers to prepare to comply with this law, no further time should be given those who desire to pasteurize the milk instead of having the test applied to their cows. If they will not have their cows tested, and have not a pasteurizer in complete working order, we will stop them from selling milk at retail as soon as we can get to them. If a hotel or restaurant buys milk at wholesale from parties who have neither had their cows tested nor the milk pasteurized, such hotel or restaurant must pasteurize the milk before serving it to patrons. Where a milk producer intends to have his cows tested but has neglected to file application for such

test with the State Veterinarian, the inspector will, if the dairyman desires, make out the application, have him sign it, and send it by mail to the State Veterinarian. In such cases the dairymen will be allowed to sell their milk until the State Veterinarian is ready to make the test.

"It will be the aim of the dairy bureau to avoid duplicating the work of the inspectors in cities in which a proper inspection department has been established. If, however, complaint should be made that the law was being violated within the jurisdiction of such a department we should feel authorized to investigate the matter. In the smaller cities where no inspection departments have been established, we shall do all we can to enforce the law and will be glad to have the local health officers call on us when we can be of service to them.

"Many letters are received daily from people inquiring whether this new law applies to the one, two, and three-cow dairies. My reply is that it is unlawful to sell any milk, whether a pint or a glass, unless it is from tuberculin-tested cows, or has been pasteurized."

CO-OPERATIVE MARKETING OF HOGS.

[Written for Pacific Rural Press.]

What is perhaps the most successful co-operative attempt at hog marketing ever made in this State is recounted in the following communication from Wm. Way & Son of Stanislaus county.

He writes: "I handled a shipment of hogs the last week in September consisting of 87 head consigned by nine Farmers' Union members. It included 23 purebred Duroc Jersey pigs. (I call them pigs because it took such a short time to put them on the market.) They were five and one-half months old and averaged 195 pounds. We met very satisfactory results. They were sold to the Western Meat Co., sorted, and brought \$8 to \$9.52 1/2 per cwt.

"The hogs that brought \$9.52 1/2 were the 23 Durocs. These were consigned by myself and son. The Western Meat Co. offered me \$9.12 1/2 per cwt., and if they made over 77 per cent, I was to receive a premium. If they made 78 per cent, they would pay 10c per cwt. premium; 79 per cent, 20c premium, etc. After they were butchered, the Meat Co. wrote me that they made 80.8 per cent, so they paid me a premium of 40c per cwt. Another lot of 25 we received 9c for made 79 per cent, which made them net us \$9.20 per cwt. You can see by these figures that it pays to raise nothing but good hogs.

"I do not know just how the other hogs were fed, but the 23 Durocs my son and I sold were kept growing from the time they were weaned till sold.

"If we will grain-feed our hogs and finish them before we sell them, I see no reason why the buyers should not pay us the same price that is paid in the Eastern market."

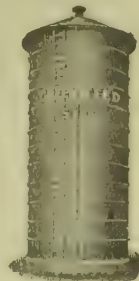
Four cars of steers, 82 head in all, were shipped recently from the property of the Porterville Alfalfa Company to Los Angeles. The steers brought a good price.

HERE IS YOUR LAST CHANCE to order an IDEAL GREEN FEED SILO

and get it up in time to fill with the last crop of alfalfa, which can be fed out in time to again fill in the spring with the first cutting, which as hay is hardly worth handling, but which makes excellent silage.

YOU CAN THEN FEED SILAGE through the summer and have the silo empty in time to fill with corn next fall.

MANY DAIRYMEN TRIED THIS PLAN last year and saved enough to pay for their silo. You can do as well.



DON'T DELAY, BUT ORDER NOW.

If desired, terms can be arranged.

The Light Running Acme Feed Cutter and Silo Filler Built in Seven Sizes.



Independent Control of Blower & Cutter Head Speed.

THE ACME ALFALFA MEAL ATTACHMENT

can be fitted to all sizes of Acme Feed Cutters. This attachment will enable the making of an excellent grade of alfalfa meal from alfalfa hay at a cost not exceeding that for baling.

CUT OUT THE MILL FEED EXPENSE BILL

By feeding Silage and Alfalfa Meal made with an Acme Cutter.

ALPHA ENGINES.

JAMES BARN EQUIPMENT.

DE LAVAL DAIRY SUPPLY COMPANY

SAN FRANCISCO.

SEATTLE

EVERYTHING FOR THE DAIRY.

Durocs For Sale

OPEN AND BRED GILTS
BOARS.

Breeding and Individuality
Right

Tagus Ranch

(Pacific States Corporation)

Hulet C. Merritt, Pres.

H. C. Merritt, Jr. Vice-pres.

TULARE, CAL., via TAGUS.

DUROC JERSEYS

LARGEST HERD IN THE STATE. Headquarters or the best in Golden Model and Colonel breeding. Stock of all ages always for sale. Start with the best. Ranches at Holtville and Devore, San Bernardino Co.

ADDRESS: DEVORE, CALIF.

PETERS, LAMSON & WALKER

MODEL HERD OF BERKSHIRES

Bred for size, bone and quality. Pigs for sale, sired by Big Royalist 180837 and Breed's Model 165859, both winners of blue ribbons at State Fair.

Descriptive catalog upon request.

J. L. GISH, Laws, Inyo County, Calif.

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Will conduct sales anywhere in California.

Purebred livestock sales given special attention.

For dates and terms address

T. J. GILKERSON, Lemoore, Cal.

RHOADES & RHOADES

Expert Live Stock Auctioneers

PUREBRED STOCK SALES A SPECIALTY.

Sales Conducted in all parts of Calif.

Ben. A. Rhoades, Auctioneer.

1501-3-5 So. Main St., Los Angeles, Cal.

Live Stock Dealer and Auctioneer

Warren H. Hord

FOR HIRE:

HORSES AND MULES.

In Carload Lots a Specialty.

OFFICE: 703 MARKET STREET.

Stables and Sales Yard: 498 Valencia St.

San Francisco, Cal.

Hillcrest Stock Farm

Thornton S. Glide, Prop.

DAVIS, CAL.

Shropshire and Merino Sheep

and

Shorthorn Cattle

Shropshires sired by rams imported by me from England.

HILLCREST LAD,

Imported 1911.

SHENSTONE CAVENDISH,

Imported 1913.

Individuals and Carload Lots.

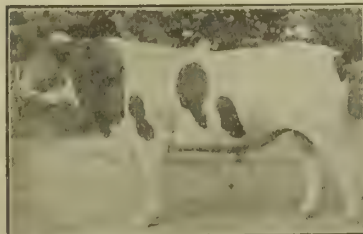
A Few Shorthorn Bulls for Sale.



HILLCREST LAD,
1st Prize State Fair, 1911.

GRANDSONS OF TILLY ALCARTRA

At prices within reach of every Breeder and Dairyman.



Prince Alcartra Korndyke,
Best bred son of Tilly Alcartra.

Our supply of these young sires is always limited, but we have a few now which we are offering at very reasonable prices.

Write us at once, or call and see the herd.

J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

HOPLAND STOCK FARM REGISTERED SHORTHORN BULLS

REGISTERED BERKSHIRES (Boars, Bred Sows and Gilts)

HERD BOAR, ROYAL POINTER 2nd, 197092, First Prize

Senior Yearling, P. P. I. E.

3 REGISTERED HOLSTEIN BULLS from High-Testing Cows.

SAN FRANCISCO OFFICE.

1210 FLOOD BLDG.

Live Stock and Dairy Notes.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

DAIRYING AND DAIRYMEN.

A pasteurizer has been invented for small milk dealers.

The Chico Meat Company recently paid \$40,000 for 2000 acres. It leased 2500 acres more. The company will run their stock on the newly purchased and leased winter ranges.

E. R. Eichler and F. E. Mobley, Fallon, Nev., have leased from the University of Nevada the Jersey bull Noble's Warbler, imported by the Hood Farm, Mass., and used in large herds in different parts of the country.

The Steybrae Farm of San Mateo county reports the sale of three choice Ayrshire cows to J. W. Hanna of Patterson. All three were taken from the Steybrae Farm's show herd which is now on the California fair circuit.

Following are the owners of cows in the Gridley Cow Testing Association which have produced more than 50 pounds of butterfat during the 30 days ending Sept. 30, 1916: D. Beale, Gridley, Holstein, 52.1; L. Hess, Tudor, Holstein, 50.7.

The N. H. Locke Co. report that their aged cow Empress Lass has made 11,314.4 pounds of milk and 603.17 pounds of butter in the 281 days she has been on test. She will have dropped two calves in 11 months and only milked twice a day.

M. H. Gardner of Delavan, Wis., writes that the Holstein-Friesian cow, Keystone Beauty Plum Johanna 161646, has just produced in strictly official test for 327 days 23,845.1 pounds milk containing 950.25 pounds fat, with 38 days of her test yet to run.

A. A. Jenkins of Tulare county reports the recent sale of a yearling Jersey bull to I. J. Keesling of Fresno. Mr. Jenkins is making some nice official records and expects to start several cows on test at an early date.

The Milk Products Corporation of Delaware, which has opened a casein factory in Modesto, announced a rise in price in skim milk from 15 to 20 cents a cwt. where the milk has to be transported less than three miles to the plant, and 17½ cents where the transportation is but three to five miles.

Prof. F. W. Woll has just received two \$100 sterling silver cups donated by the American Jersey Cattle Club, one for the best producing herd of 10 grade cows sired by a registered Jersey bull, the other for the best Jersey cow in the California Dairy Cow Competition.

John Burrell, owner of the Kings County Jack Farm, has recently purchased 16 jacks and 38 jennets from J. E. Dickinson of Fresno. He now has 80 head of jennets and 60 head of breeding mares weighing from 1400 to 1800 pounds on his ranch near Hanford.

At the Fresno District Fair, N. H. Locke sold his first prize two-year-old bull, Financial King of L., to Mr. C. I. Starr of Hanford. This bull has been a first place winner since a calf. Mr. Starr was greatly impressed with the young fellow and had to pay a fancy price for him. Mr. Locke is busy answering inquiries, and reports the Jersey business good.

A. A. Jenkins, a young Jersey breeder of Tulare, Cal., has sold a yearling bull to Dr. Mack of the Barstow Colony, Fresno, California. The bull is by Gertie's Lad and out of Ida Fern Smith, a granddaughter of Golden Fern's Lad. Mr. Jenkins also sold a December bull calf to C. G. Church, Loyaltown, Sierra County, Cal., sired by Gertie's Lad and Fern's Nana, the dam.

The butter situation continues bullish. The 54 Associated Cold Storage Warehouses in the Central

West and East reported on hand October 1, 77,786,000 pounds of butter against 86,468,000 pounds the same date last year, a shortage of 8,682,000 pounds. In store at Los Angeles, October 12, were 310,998 pounds of butter against 785,758 pounds at same date last year, a shortage of 474,960 pounds.

Goldie of Venadera, a Jersey owned by Guy H. Miller of Modesto, finished a yearly test on September 2, 1916. Running with the regular herd and milked only twice a day, Goldie gave 536.7 pounds of butterfat or 631 pounds of butter from 10,060 pounds of milk, an average test of 5.34 per cent for the complete year. She was bred by Mr. Miller and was sired by Marigold's Exile King, who has sired fourteen Register of Merit daughters. The dam is Margery Golden, a Register of Merit cow.

Roy M. Flicher, manager of the Post-Card Ranch of Corcoran, has just returned from Wisconsin with three carloads of Holsteins, mostly grades. This is the second shipment this year. The first arrived last April, and included many purebreds, amongst them were several daughters and granddaughters of Johanna McKinley Segis, also the three-year-old bull King Colantha Segis II, from the 29-lb. cow Grace Pontiac. They are also owners of Sarcastic Blossom Lad II, formerly owned by the University of Nevada and from their show cow and bull.

A remarkable public sale in Guernseys occurred at Langwater Farms, North Easton, Mass., Oct. 10. Seventy-five head were sold for a total of \$80,625, an average of \$1075 per head. Nineteen daughters of the great May Rose bull, Imp. King of the May 9001 A. R., averaged \$1969 apiece. The highest price of the sale, \$6150, was given for Langwater Dairymaid 26377 by C. L. A. Whitney of Albany, New York. Langwater Generous 41958, a daughter of Imp. King of the May 9001 A. R., sold for \$5000 to John S. Ames of North Easton, Mass. Three thousand dollars was paid by Branford Farms of Groton, Conn., for the yearling bull, Langwater Foremost 39191. Over 600 Guernsey admirers were present, including breeders from Maine to California.

BEEF CATTLE.

The Hollister Estate Co. of Goleta have 405 head of Shorthorns.

Forty per cent of southern territory and all of California, put under quarantine on account of Texas fever tick on July 1, 1906, were released from quarantine on this account, Sept. 15, 1916.

The sixth annual Pacific International Livestock Exposition will be held at the Union Stock Yards, North Portland, Ore., Dec. 4-9, 1916. Between \$20,000 and \$25,000 will be given in cash premiums for livestock. There will be no charge for admission and no entry fee.

The ultimate release of the Indians of the United States from dependence on Government appropriations is looked for. Cattle raising may solve the Indian problem. Indians have been found to be natural herdsmen. The Commissioner of Indian Affairs predicts that the aborigine will soon become a great factor.

SWINE AND SWINEMEN.

The Southern California Duroc Breeders' Ass'n will have noted authorities address their meetings, will encourage auctions and shows, and will have a committee to pass upon all animals for sale and exclude all unworthy ones.

In the Fillmore Agricultural Club's pig-feeding contest conducted under the direction of Farm Adviser W. B. Parker, just completed,

LIVESTOCK DIRECTORY.

Rates in this directory, 8c per word each issue; or if carried weekly for one year, 2½c per word.

SWINE.

Poland Chinas.

SMITH'S POLAND-CHINAS—Sows and gilts bred to Joker, First Prize Boar at the Wisconsin State Fair, 1915. These sows and gilts, sired by Iowa Wonder, who is a son of A. Wonder, the most celebrated Poland-China boar, living or dead. Litters from this mating are the best I have ever seen anywhere. Prices low quality considered. Will sell one or a carload. As a special inducement each purchaser will be given a year's subscription to the American Swineherd, the best swine paper published and a copy of the Handbook on the Sow; also a copy of the Pig Feeders' Manual. Geo. A. Smith, Corcoran, Cal.

YOUNG POLAND CHINAS, LARGE TYPE—Boar IBA Wonder won first and Reserve Championship P. P. I. E. weighing 730 pounds under 2 years and in breeding condition. 60-day special—fine young sows bred to IBA Wonder at very low prices; also weanling pigs, either sex. Satisfaction, or money refunded. W. A. Young, Lodi, Cal.

GRAND CHAMPION SUPERBA POLANDS—A few choice spring Superba boars ready for service. Sows bred to Superba for fall litters. Prices reasonably low. Rough's Greenfields, Arlington Station, Riverside, Cal.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated, purchaser to return crates. E. A. Hall, Watsonville, Cal.

REGISTERED POLAND-CHINAS—Prolific, papulous, profitable porkers. Choice boars now ready for service, \$25 each. Weanlings, \$15. Dr. J. A. Crawshaw, Hanford, Cal.

LAKEVIEW STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

POLAND-CHINA PIGS—Sired by "Iowa Wonder," son of "A. Wonder," largest hog living or dead. G. E. Sheldford, Healdsburg, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. C. L. Linn, Linview, Route 4, Modesto, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trowhitt Box 82A, Hanford, Cal.

REGISTERED POLAND CHINA SWINE—Prize winners. Finest stock in the State. \$20 up. M. Baasett, Hanford, Cal.

POLAND CHINA HOGS FOR SALE—Registration papers furnished free. C. A. Cooley, Durham, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys—Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 27A, Davis, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

REGISTERED POLAND-CHINAS and Duroc Jerseys. M. F. Harrold, Orland.

POLAND-CHINAS—Prize winners. Money-makers. W. Bernstein, Hanford, Cal.

Berkshires.

REGISTERED BERKSHIRES—World's Fair Grand Champions at the head of the herd. Also winners of Senior Junior and Reserve Grand Champions. Stock of all ages for sale. Grapewild Farms. A. B. Humphrey, Prop., Escalon, San Joaquin Co., Cal.

WINONA BERKSHIRES—Won at the 1916 California State Fair and W. A. B. C. eighteen prizes, with four firsts and two championships. F. R. Steel, Winona Ranch, Route 1, A-Box 105, Grant's Pass, Ore.

CHOICE REGISTERED BERKSHIRES—Fine bred Rival Champions Best and Masterpiece pigs. \$15 each. Trios, \$40. A 700-pound son of Star Value for sale at a bargain. W. H. Waugh, Riverside, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

SPECIAL—Six good service boars and a few sows in pig to Premier Leader due to farrow in October. Geo. M. York & Son, Berkshire breeders, Modesto, Cal.

REGISTERED BERKSHIRES—For sale, bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

REGISTERED BERKSHIRES of prize-winning blood. Write for description and photos. Imperial Stock Farm, Morgan Hill, Cal.

ROSCROFT BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Peris, Cal.

BERKSHIRES—Four service boars, 30 Spring 1916 open gilts for sale. Oak Grove Dairy Farm, Box 1 Woodland, Cal.

REGISTERED BERKSHIRES—Weanling pigs \$10 each. G. A. Casey, R. 7, San Jose.

CHAS. GOODMAN—Breeder of high-class Berkshire Swine. Williams, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

BERKSHIRES—Carruthers Farms. Mayfield, Cal. Second annual sale, August 2, 1917.

BERKSHIRES—Butte City Ranch, Butte City, Cal. See our ad in another column.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

Duroc-Jerseys.

DUROC JERSEYS—My hogs won highest honors at State Fair, taking first prize herd, first prize sow, second prize boar. Were the largest of their age exhibited. Stock all ages for sale. Prices reasonable. Breeding and satisfaction guaranteed. Haden Smith, Route 1, Box 84D, Woodland.

DUROCS from River Bend Farm, St. Helena, Cal., are large type, smooth, rangy, with fine backs and deep cherry color. We sell only those we'd like to keep in our herd. Don't write us if you want cheap stock.

RANCHO RUBUS DUROCS—A few choice gilts bred for October farrowing; also good service boars, tried sow and weaned pigs, priced right. Elmer Lamb, Ceres, Cal.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money makers. They grow faster. New England California Corporation, Ripon, Cal.

DUROC JERSEYS—Herd boars. H. M. N. Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

DUROC-JERSEY SWINE—Bred gilts, open gilts, one good service boar and a few young boars for sale. T. J. Walker, Perkins, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. M. Boudier & Son, Napa.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Oolins, Denair, Cal.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High class pure-bred hogs, both sexes, any age.

REGISTERED DUROCS from best Eastern blood lines. S. S. Southworth, Napa.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROC JERSEY SWINE—Frederick M. Johnson, Napa, Cal.

REGISTERED DUROCS—All ages. Either sex. W. A. Pack, Hollister, Cal.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

Other Breeds.

BILLIKEN HERD OF IMPROVED CHESTERS—Prize winners at the State Fair. The Farmer's Utility breed. Size combined with quality; producers of big uniform litters of growthy pigs. 15 bred gilts due to farrow in Jan. boars and sows of spring farrows; first class and extra well developed; best blood lines obtainable; prices reasonable and every one cholera immune. Write for special prices and circulars. C. B. Cunningham, Mills, Cal.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

LARGE YORKSHIRE SWINE—Gilts to farrow in September and October. Service boars and Spring pigs. Both sexes. Riverina Farms, Paradise Road, Modesto, Cal.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

REGISTERED IMPROVED CHESTER Whites—Grizzly Bear Ranch, East Auburn, Cal.

DAIRY CATTLE.

Holsteins.

FOR SALE—A carload of very fine registered Holstein heifers. They are sired by bulls of great producing ancestry and from dams of splendid type and large production. Some are bred to Prince Juliana Walker, a First Prize son of Prince Gelsche Walker. Several will be old enough to breed next month. Some are calves. This is a great opportunity for some one who would like to start with a small capital, as they will be priced low for a quick sale. I have an extra well-bred Kornidye bull to go with them whose granddam was a former World's Record cow. Write for full information or better some and see them at once if you are looking for a real bargain. Sold subject to tuberculin test. Geo. A. Smith, Corcoran, Cal.

REGISTERED HOLSTEIN BULL CALVES—Sired by Lorena Kornidye Alcarita, whose dam made 29.75 pounds butter fat in seven days as a four-year-old. J. M. Campbell, Bealon, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creanella Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

REGISTERED HOLSTEINS—Have a few bulls from El Prado Wayne Colantha, whose dams and sire's dams average per cent fat at 4 years is 5.01. See my stock at the State Fair. J. W. Benoit, Route C, Modesto, Cal.

REGISTERED HOLSTEINS—Sired by King Kornidye Hengerveld Ormsby 53822. Dam Pieterje Maid Ormsby 78051, world's record when made 35.66. Send for pedigrees. Geo. Koumas, Modesto, Cal.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Hiedon, Tulare, Cal.

THE MCLOD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

A SPLENDID 8-month-old Holstein bull with good A. B. O. breeding for \$135. E. W. Abbott, Milpitas, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS Corp., Importers and Breeders, Woodland, Cal.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAllister & Sons, Chico, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Quinn, R. 3, Box 58, Visalia, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Milbrae Dairy, Milbrae, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale
C. L. Morse, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from
A. R. O. dams, B. F. Anderson, Modesto, Cal.

HOLSTEIN COWS for sale with records
Dr. Stetson, Napa, Cal.

REGISTERED HOLSTEIN CATTLE—E. E.
Freeman, Route B, Modesto, Cal.

A. E. O. HERD OF HOLSTEINS—Alex
Whaley, Hacklare, Calif.

Jerseys.

JERSEY BULLS AND BULL CALVES—
Sons and grandsons of 2 and 3 lbs. cows, None
better. Cheap for quality. N. H. Locke,
Lockeford, Cal.

REGISTERED JERSEYS—Herd established
1868. Young bulls from best cows, Rancho
Dos Rios, R. 2, Modesto.

VENADEIRA HERD OF JERSEYS is now
offering the heifer calves from register of
merit cows with official yearly record. Guy
H. Miller, Route 1, Modesto, Cal.

JERSEY BULLS—Serviceable age. Sons of
Gertie's Lad, who has two daughters that
made over 600 lbs. butter as two-year-olds
A. A. Jenkins, Tulare.

**BREEDER OF REGISTERED JERSEY CAT-
TLE**—Duroc Swine. Young stock for sale.
W. J. Hackett, Ceres, Cal.

JERSEY BULLS AND HEIFERS from Reg-
ister of Merit Cows for sale. C. G. McFar-
land, R. 2, Tulare.

**YOUNG REGISTERED JERSEY BULL
CALVES** at reasonable prices. O. J. Ames,
Oakdale.

REGISTERED JERSEYS—Young bulls and
bull calves. T. B. Purvine, Petaluma, Cal.

JERSEY BULLS from Register of Merit
cows. C. D. Hayworth, Modesto, Cal.

FRESH JERSEY MILK COWS for sale. E.
M. Locke, Lockeford, Cal.

Other Breeds.

GUERNSEY BULL CALVES from Grand
Champion Bull. Also Hampshire Swine, both
sexes from Grand Champion 700-lb. boar and
Grand and Junior Champion Sow. Bella Vista
Herd J. W. Henderson 1st National Bank
Bldg., Berkeley, Cal.

EDGEWOOD FARM GUERNSEYS—First
in the show ring and in official records. Few
animals of either sex for sale. Edgewood
Farm, Santee, Cal.

**BREEDERS OF REGISTERED SHORT-
HORNS**—Milk strain. Choice young stock for
sale. John Lynch Ranch, Box 321, Petaluma,
Cal.

INNISFALL DAIRY SHORTHORNS—Reg-
istered young bulls for sale. Alexander &
Kellogg, Suisun, Cal.

AYRSHIRES—Registered; all ages. E. B.
McFarland, 412 Claus Spreckels Bldg., San
Francisco.

REGISTERED AYRSHIRES—All ages for
sale. W. J. Domes, McCoy Oregon

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—
Breeders and Importers of Shropshire, Ram-
bouillet and American Merinos, both sexes
Also Red Faced cattle. Take electric car at
Petaluma or Santa Rosa for Live Oak Ranch

KAUPKE BROS., WOODLAND, CAL.—
Breeders and Importers of Hampshire sheep

BREEDER OF MERINO SHEEP—Rams
for sale. J. Bidegaray, Fresno, Cal.

BISHOP BROS., SAN RAMON, CAL.—
Breeders and Importers Shropshire

CHAS. KIMBLE—Breeder and Importer of
Rambouillets, Hanford, Cal.

HORSES AND MULES.

STOCKTON PERCHERONS again winners
at Sacramento. Get next brother farmer.
H. G. Learned, Producer Stockton

REGISTERED SHIRES—Black Hawk Stock
Farm, Importers and Breeders, Easton & Ward,
Pennsylvania, Buellmead, Cal.

BEEF CATTLE.

FAIR OAKS RANCH WHITTS, Cal.—Young
registered Shorthorn bulls for sale. Sired
by Landseer 379318, grandson of Imported
Villager 295884.

REGISTERED AND UNREGISTERED
Shorthorn Bulls and Percheron Horses for
sale. Paicines Ranch Co., 320 Sharon Bldg.,
San Francisco

REGISTERED HEREFORDS—H. H. Gable
Diamond G Ranch, Esparto, Cal.

HOPLAND STOCK FARM—Registered
Shorthorns. Prices on application. Hop-
land, Cal.

SIMON NEWMAN CO., Breeders of Reg-
istered Herefords, Newman, Cal.

GEORGE WATTERSON—Breeder registered
Herefords, Bishop, Cal.

SHORTHORNS—Carruthers Farms, May-
field, Cal.

MISCELLANEOUS.

SAN FRANCISCO LIVE-STOCK EXPORT
Co., Eugene B. Croley, Manager, solicits for-
eign orders for purebred registered and merit
breeding animals and fowls. California has
great diversity of climatic and other condi-
tions that enable us to select animals that
have been raised under conditions similar to
those of the location for which they are in-
tended. We should be informed regarding
these conditions and be allowed ample time
to make selections. Nearly all disappoint-
ments in buying afar are the result of insuf-
ficient information as to conditions or to lack
of time for proper selection. Our plan and
ours for "raising animals to order" to fit
to peculiar foreign conditions is worth in-
vestigating. References: Dun or Bradstreets,
San Francisco banks. Office 219 Under-
wood Building, 525 Market St., San Francisco.

THOROUGHBRED SCOTCH COLLIES—All
ad from our noted prize-winners. Have a
few 3 months old puppies—very choice. Write
what you want. Brownvale Kennels, Red-
wood City, Cal.

CROLEY'S CALF FEED with skim milk
it raises fine dairy heifers cheaply. Geo. H.
Coley Co., Inc., 631-637 Brannan St., San
Francisco

D. O. LIVELY, 216 Hobart Building, San
Francisco, buys and sells livestock—any kind
any quantity.

DUROCS AND GUERNSEY BULL CALVES
bred to 900-lb. boar. Ed. E. Johnson,
Rock, Cal.

Justin Snow won the contest; and
with three other boys, Newell Snow,
Walter Carter, and Frank Culp, were
given a trip to the State Boys' Club
Convention held at Davis Oct. 12 to
15.

Since returning from the State
Fair at Sacramento where its Duroc-
Jersey hogs captured ribbons in
every event in which they were en-
tered, including the Duroc Futurity,
River Bend Farm at St. Helena, Cal.,
has sold 5 sows, 2 boars and 18
weanlings. It pays to breed from
only the best of stock, and to cull
closely.

W. O. Pearson, manager of Swine-
land Farm at Woodland, advises us
that he has found the demand for
purebred Durocs and Tamworths
very satisfactory during the past
season. Among recent sales was a
Duroc boar to F. W. Marsten of
Shasta county. Mr. Pearson not
only has large herds of registered
Durocs and Tamworths but is a
large feeder of hogs as well, having
fattened 2,000 head this fall near
Williams, Colusa county. He con-
templates trying rite stubble for fat-
tening purposes as soon as rice har-
vesting is started.

SHEEP.

Our attention has been called to a
mistake in our State Fair livestock
awards by the Calla Grove Farm.
In the Hampshire sheep division
that breeding establishment won first
and second on ewe lambs and third
on range sheep ewe lambs of middle
wool type.

Jos. Levy of Calla Grove Farm,
Manteca, has just received a prize-
winning two-year-old Hampshire
ram from Indiana; also 20 head of
Hampshire ewe lambs from Utah.
He is about to ship a Guernsey cow
to Hawaii.

RESOLUTIONS ADOPTED BY THE
C. C. O. ASSOCIATION.

Following is a summary of the
resolutions adopted at the meeting
of the California Creamery Op-
erators' Association of California
at its late session at Ferndale:

1. This convention believes im-
plicitly in the pasteurization of
cream for butter-making purposes.

2. The portion of the present law
which reads: "which process shall
consist of uniformly heating the
temperature to not less than 145
degrees F., and holding at such
temperature for not less than 45
minutes," is too limited in its scope
and does not include in its applica-
tion the methods recognized by
scientists which designate proper
pasteurization for butter-making, as
the momentary heating of cream to
a temperature of not less than 165
degrees F. as well as the method
described in the existing law.

3. It is the sense of the conven-
tion that the Secretary of the State
Dairy Bureau be requested to place
this matter before the Attorney
General with a view of staying the
enforcement of this portion of the
law until such time as he can gather
full evidence covering the point in
question and render a decision.

4. The association believes that
active county associations of dairy-
men are of incalculable benefit to
the industry, and in Humboldt
county the association's members
have been afforded ample evidence of
the beneficial results obtained from
the enthusiastic work of the Hum-
boldt county dairymen's association.

5. The association pledges its
members to continued active efforts
toward the forming of county dairy
associations and pledges itself to
work with such associations for the
steady improvement and upbuilding
of California's dairy industry.

6. The association expressed its
sincere appreciation of the warm-
hearted welcome given to its mem-
bers by the citizens of Ferndale,
Arcata, and Fortuna, and thanked
the Humboldt Dairymen's Associa-
tion, the Village Club of Ferndale,
and other creameries for the un-
stinted hospitality extended to its
members and their ladies.

GOOD HOLSTEINS FOR TOYON
FARM.

[Written for Pacific Rural Press.]

With the purpose of having a
comparatively small but choice herd
of purebred Holsteins on his country
estate, Toyon Farm, near Los Altos,
Horace L. Hill Jr. has, in connection
with the Lewis Company of San
Jose, during the past summer, pur-
chased some of the best foundation
cattle available, both in the East and
in California.

Included in the lot of females are
a daughter of the 37.13-pound
three-year-old, Funderne Netherland
Fayne, a grandson of King Henger-
veld Aaggie Fayne who has eight
30-pound daughters; a 33.28-pound
aged cow, Funderne Soldene Fayne,
and two of her daughters, one with
a record of 20.75 pounds butter as a
two-year-old, sired by King Pontiac
Segis Korndyke. These and other
young cows with high records them-
selves and out of record cows and
sires make a choice foundation herd
of females. They have been bred to
a young son of King Valdessa whose
two nearest dams average over 43
pounds of butter in seven days. A
young son of Prince Gelsche Walker
out of a 25-pound dam is also in
service at the present time.

NEW BOARS AT UNIVERSITY
FARM.

Prof. J. I. Thompson, who has just
returned from a trip through the
Middle West, reports the purchase
of the Poland China boar Big Bob
Orange 2nd sired by Big Bob and
out of Grange Girl. He bought this
boar at Sievers' sale, held at Audu-
bon, Iowa. He also purchased the
Chester White boar Royal Chief,
sired by William A., a several times
grand champion, from W. T. Barr at
the National Swine Show at Omaha.
A Berkshire boar was purchased at

Iowana Farms. All three will be
put into use as herd boars at the
University Farm, Davis.

THE RIVERSIDE COUNTY FAIR.

The Riverside County Fair was
one of the most notable events of
the kind ever held in the southern
part of the State. The anticipations
of its promoters and patrons were
more than realized, and the enthus-
iasm of the participants was unabated
down to the closing number on
the program.

The feature of the Riverside Coun-
ty Fair Oct. 10 to 14 was the swine
exhibit, which was the greatest ever
shown in Southern California. The
event of importance was the organ-
ization of the Southern California
Duroc-Jersey Breeders' Ass'n to
make that section widely known for
one breed of hogs so it will pay buy-
ers to come long distances to inspect
the herds of more numerous breed-
ers. S. O. Houghton of Van Nuys
and R. K. Walker of Devore were
elected temporary chairman and sec-
retary. More members are espe-
cially desired before election of per-
manent officers at the next meeting.

At the Fair 206 hogs were shown,
including 83 Durocs, 69 Berkshires,
27 Poland Chinas, 18 Hampshires,
and 9 Chester Whites.

Dairy cattle classes were well
filled with good stock.

Rain and threatening weather—
but they had good-natured crowds.

Grand Champion Duroc boar at
Riverside County Fair was won by
the Tagus Ranch.

The Reserve Grand Champion
Duroc boar at Riverside is owned
by Peters, Lamson and Walker.

Grand Champion Duroc sow at
Riverside County Fair was won by
Peters, Lamson and Walker, defeat-
ing the P. P. I. E. reserve grand
champion.



**THAT'S
HERCULES**

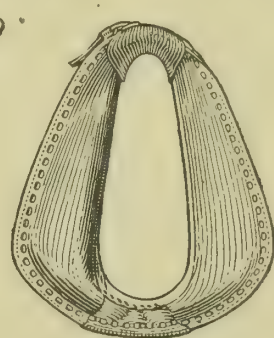
It has *Hercules* materials
to begin: California oak tanned
leather, the most durable, filled
with long rye straw, threshed
with flails so as not to break
the straw—and *Hercules* skill in
the workmanship.

It has the *Hercules* reputation
behind it, two generations of
harness makers.

When a dealer offers you a *Hercules* Harness, Horse Collar
or Saddle, he is offering you **THE BEST THERE IS.**

W. DAVIS & SONS

333 MARKET STREET
SAN FRANCISCO
THREE BLOCKS FROM THE FERRY



Made in accordance with the
most improved and scientific
design, to afford ease and comfort
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CATTLE FEED FOR SALE

I have both wild feed and hay to be sold together,
and fed out by owner. Write me at once for prices, etc.

JAS. McCORD, Hanford, Cal.

Sheep Profitable in California.

[Written for Pacific Rural Press.]

The day was twenty-five or thirty years ago when California was one of the leading sheep States in the country. She should come to her own again in sheep production. Los Angeles is one of the greatest lamb markets in the country; and instead of sending to distant States for our lambs, we should raise them nearer home, says Louis Penwell of the San Clemente Sheep Company of California. "The sheep business of today," he adds, "offers the greatest opportunity for profit of any business in the United States. Prices are high and the demand is outstripping the supply. The shortage cannot be overcome in the next generation. The same condition has been allowed to obtain in other sheep-producing countries, due partly to the settling up of vast ranges of South America and Australia. The American sheep man has been the first to recognize that if production is to keep pace with the consumption, intensive methods must be adopted to meet these conditions. These conditions can be easily met in California, because here it is possible

to raise immense crops of alfalfa and other forage crops suitable for the feeding of sheep on a comparatively small area. One acre of irrigated alfalfa, for instance, is capable of sustaining ten sheep throughout the year.

Getting Ewes.—Small farmers are discovering that they can purchase a few old ewes cheap, and in a short time reap a good profit. An old ewe that would possibly perish on the range could be bought for \$4.00. She would produce an early lamb that would sell to the butcher for \$6 to \$7 and the same time grow \$2.50 worth of wool. In her fattened condition she would sell for \$5 to \$6, leaving a profit of at least \$9.50, as it would not cost more than \$2.00 to keep her a season.

Mr. Penwell, besides being one of the big sheep men of Montana, where his holdings are said to amount to 100,000 sheep, has recently leased San Clemente Island for twenty years. On this island there are 18,000 to 20,000 sheep, hence his views on sheep raising are those of an expert and should carry weight.

Feed and Management of Test Cows.

(Continued from first page.)

must be exercised to guard against bloat. Mid-day pasturing and full stomachs before the cattle are turned into the alfalfa are safeguards against bloat with alfalfa.

Green forage, cut fresh daily and fed in the barn or corral, is the best substitute for pasture. Alfalfa, Indian corn, sweet or grain sorghums cut in the bloom, oats, peas, clovers, or rye grass are all crops that can be profitably fed in this manner. The larger the variety of these crops, the more the cows will consume, which is the secret of securing heavy production. As much as one-half the dry matter of the ration, or up to 50 lbs. if desired, can be made up of these succulent feeds without danger to the cow or her milk flow, but smaller quantities are generally fed to test cows, as they need to have a considerable proportion of their feed in a concentrated, easily digestible form.

Silage.—Because of its succulence, palatability, and high nutritive value, silage should play an important part in the ration, if it is available. Indian corn, amber cane or orange sweet sorghum, milo maize, Egyptian corn, kaffir corn, alfalfa, and possible sudan grass are all suitable for silaging purposes. In the matter of economy, silage leads all other forms of succulent feeds, because of the labor required to cut and feed green crops, and the lessened amount of feed per acre when pasturing is practiced. When fed with all the alfalfa hay they will clean up, 25 to 30 pounds of silage daily will usually prove sufficient to cows weighing 1200 pounds or less. Heavier cows can be fed larger amounts.

The ideal situation is where both pasturing or soiling crops can be fed in connection with silage because of the variety that results. In such cases, one-half to two-thirds of the above amount of silage will be sufficient.

Roots.—This form of succulent feed is valuable, although limited in its possibilities by cost of production. Sliced sugar beets or field beets are excellent; the latter may be fed safely up to 100 pounds per cow daily if desired; sugar beets should prove as valuable for feed as the sugar factories pay, on the average. The best variety of mangel to grow is the half-sugar mangel, seed for which is procurable. Carrots may be substituted for beets if early root crops are deemed a necessity, but in most sections other succulent feeds can be obtained, which are just as efficient and less expensive.

Hay.—Alfalfa is easily the most important hay we have, also the most valuable, but too much emphasis cannot be placed on its quality. Early cut and leafy alfalfa is worth a good deal more than stemmy hay cut at a late date and cured by faulty methods. To be classed as "extra choice," alfalfa should be cut just before or when beginning to bloom, mowed in the morning, and raked into windrows in the afternoon of the same day. Cows will clean up hay made in this fashion without chopping, and there is very little loss of leaves. The Colorado Experiment Station found that 65 per cent of the leaves may be lost by the ordinary methods of hay making, this meaning that over half the cured hay is straw, which has a comparatively small nutritive value.

Although there is not the same danger in losing leaves in curing grain hay as there is with alfalfa, the most palatable oat or barley hay is that which has been cut in the milk, shocked quickly after cutting, and brought under cover as soon as possible. Grain hay is fed twice a day, the cows being allowed all they will clean up with a relish. Succulent feeds should be supplemented with a grain hay ration if possible; also it will be necessary to supply more nitrogenous and expensive mill

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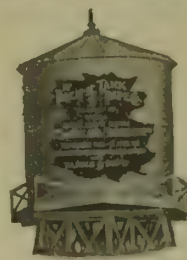
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Young Stock, \$30 Up.
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AT PRIVATE SALE.

Owing to continued ill health I am obliged to take a year's rest and will sell all my herd of registered Durocs at prices little above the market for common hogs. Everything goes, including State and World's Fair Champions. 25 bred gilts and tried sows, 30 gilts ready to breed for next spring litters. Sows with litters, and weaned pigs, Service Boars, etc. Get my price on what you want. This is your chance and my sacrifice.

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BERKSHIRES

When the Butte City Ranch Berkshire herd was started, there was a definite object in view.

This was to establish one of the outstanding herds of the breed—to do constructive breeding—to produce hogs of the greatest possible usefulness, and of outstanding merit.

This herd was not started to last for a day or a month or a year, but we expect Berkshires to be bred on Butte City Ranch as long as there is a livestock industry in California.

In establishing the herd, we selected foundation animals from the best sires and dams in the best herds in the State. This gave us the benefit of a wide selection.

We have a definite type in mind—and that is the most profitable hog the California farmer can raise. Everything has been selected to conform to this ideal. Not only do the animals we have selected conform to this type, but their ancestors have for generations. No great herd has ever been built without the practice of rigid selection.

By selecting our foundation animals from the best produced by the best breeders, we started with the very cream of the breed.

A Big Importation

We have recently added to our herd an importation from the East of 54 sows and 2 boars from Iowa Farms at Davenport, Iowa, and W. S. Corsa's Gregory Farm herd at Whitehall, Ill., two of the best herds of the Berkshire breed. These conform to the Butte City type and are an outstanding lot of hogs. Included among them is the boar, Iowa Champion Peer 2nd, who cost us \$750 there.

We are now in position to supply the best foundation stock—one or a carload. We have bred sows, bred gilts, open gilts, weanling pigs and boars.

Five Boars in Service

We have five great boars in service. Iowa Champion Peer 2nd is a big type boar of much quality. He was sired by Rivals Champion, a boar that cost Iowa Farms \$1750 when 5 years old. Rivals Champion is also the sire of Prof. Curtiss' great sire, Rivals Champion Best, and of the great boar recently imported to Hopland Stock Farm. We consider Iowa Champion Peer 2nd a bargain at \$750. Mayhews Leader 6th is sired by A. B. Humphreys' boar, Grand Leader 2nd, the grand champion of the world. He is rated by many as the best son of the champion and has proven an impressive sire. Then we have a son of the University Farm boar, Star Leader, a son of Superior, a litter brother to Grand Leader, and Baron Duke 104th, a Gentry bred boar out of a daughter of the great Lord Premier.

Our customers must be satisfied. We are in the business for a lifetime. Every animal sold carries our guarantee—which we will absolutely stand back of.

Prices from \$30 Up.

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BUTTE CITY,

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The ranch is just across the Sacramento River bridge from Butte City. Good automobile roads. Come and see us. And we are glad to answer letters.

feeds or oil meal and not the cheaper, more starchy mill feeds when grain hay is fed, instead of alfalfa hay.

Grain and Mill Feeds.—Variety in the grain ration is as important as with succulent feeds, for it insures a keen appetite and maximum milk production all the time. Feed prices should, of course, be considered before computing the most economical ration, but in California rolled barley, whole or rolled oats, bran, middlings, dried beet pulp, dried or wet brewers' grains, oil meals, linseed meal, cocoanut meal, and soy bean meal are the most important and desirable grain feeds. Rice bran or middlings are desirable components of grain mixtures if pure, containing only a small amount of rice hulls.

Where alfalfa hay is fed, the object in computing the grain ration should be to furnish the largest possible amount of carbohydrates in digestible form at the least cost; and with present prices the following rations may be considered in the order given:

1. Dried beet pulp, 3 parts; rolled barley, 1 part; or cocoanut meal, 1 part, instead of barley.

2. Rolled barley, 1 part; dried beet pulp, 2 parts; cocoanut meal, 1 part.

3. Rolled barley, 1 part; wheat bran, 1 part; dried beet pulp or molasses beet pulp, 2 parts; cocoanut meal, 1 part.

Cocoanut meal should be limited on account of its laxative qualities; and both barley and bran should be carefully considered on account of present high prices.

Cows will naturally vary in the quantity of feeds they can consume, but in general one pound of either the above rations to each five pounds of milk a cow gives will be sufficient.

For cows producing very high-testing milk, and for heifers, one pound of grain to every four pounds of milk is desirable. This is also needed in all cases where a poor quality of roughage is being fed.

Besides one of the above rations, liberal amounts of the best alfalfa hay and succulent feeds should be used.

When grain hay is the basic roughage, the object in computing the grain ration should be to furnish a maximum amount of protein and easily digestible nutrients with a minimum of bulk. Two rations which will economically serve this purpose at present feed prices are:

1. Rolled or ground barley, 2 parts; wheat bran, 2 parts; dried beet pulp, 2 parts; linseed meal, 1 part.

2. Rolled or ground barley, 1 part; cocoanut meal, 1 part; dried beet pulp, 2 parts; linseed meal, 1 part.

It is understood that pasture, green soiling crops and silage will add to the above rations when fed either singly or as a group, also that the same amount of grain be fed as when alfalfa hay is used.

An abundance of fresh water in clean troughs should be available at all times and salt should be available for the cows to help themselves.

Must Be Breeding Stock.—A point all contestants should bear in mind is the rule which makes it compulsory for all cows to be in calf five months after freshening. Further, a purebred sire at the head of the

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REMCO SILOS

The early cessation of the rains last spring and their unusually early opening this fall should be a warning to all feeders of livestock, especially dairymen, to no longer neglect the addition of silos to their equipment.

It is not yet too late to order a Remco silo to save your crop of corn from the frosts likely to follow the early rains, or to save your last cutting of alfalfa.

A Remco silo is your cheapest insurance against all such losses. Send in your order early and avoid delay.

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herd will be necessary in order to compete for the monthly and yearly prizes for grade cows.

SACRAMENTO VALLEY DAIRYMEN TO MEET.

[Written for Pacific Rural Press.]

Encouraged by the success of the dairy marketing associations which have been in operation in San Francisco and Los Angeles during the past year, leading dairymen in the Sacramento valley have called an organization meeting at Sacramento, October 25.

Jas. M. Henderson, chairman of a committee of milk producers recently appointed by the Sacramento Valley Development Association, outlines the purposes of the association as follows:

"To furnish facilities and agencies through which such bona fide milk producers as desire to become members shall market their milk, cream, butter, cheese and other dairy products upon a uniform plan and in such a manner as to bring about a better standard of quality, a more uniform distribution and a larger consumption thereof in the cities, towns and communities in the valley and in such other places as the association may desire to serve; to encourage its members, to facilitate production, to standardize and develop their product for the market and to find the readiest and most available market for their product."

A swine show in connection with the fifth annual meeting of the California State Swine Breeders' Ass'n, which will be held at Los Angeles some time during January, was being agitated at Hanford last week. The delegation present from Los Angeles promised the support of the Los Angeles Chamber of Commerce and breeders were favorably impressed with the idea.

Mr. Farmer

WINTER IS APPROACHING

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Are they in shape to protect your crops, your stock, your machinery, implements, etc.?

Remember that galvanized iron building materials are practically everlasting.

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SWINELAND FARM,

W. O. Pearson, Prop. Woodland, Cal.

Raising Poultry for Profit

THE FARM EGG—THE CAUSE OF THE LOSS.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

At this time of the year when there are many broody hens the nests require great care if the eggs are to reach the consumer in a wholesome condition. One reason why farm eggs are not paid for at the highest market price, is because buyers have to run too big a risk on the quality. Now this does not mean that farmers, as a whole, are careless in the matter, but that some are, and we all have to pay the price. When broody hens stay on the nests all day to be thrown off at night when eggs are collected, they are breeding lice and mites, and if an egg is broken maybe a little of it is left on the boards or the litter; it

dries, perhaps, but at any rate it leaves a bad odor and is a harbor for mites, ants, and nobody knows how many kinds of vermin, that leave their impress on the porous egg shell. What happens after, I leave to the imagination. But this much is certain, that if the farmer is ever to come into his own he must live up to the law of right, which is the "golden rule." The U. S. Department of Agriculture gives some very interesting figures showing the loss to three buyers of farm eggs in Kansas during the months of July, August and September.

The total figures are 706,569 dozen of eggs bought. Out of these candling proved that there were 553,599 firsts; 73,011, seconds; 13,510 checks; 66,449 rots.

Now I made a mistake in saying these buyers lost that much in eggs. When anybody tells you that, don't believe them; it is not true. The farmers of the Sunflower State lost that much in eggs during those three months, because the buyers bought those eggs on a safe basis, allowing for the loss they realized would come at candling time.

QUERIES AND REPLIES.

[Answered by Susan Swaysgood, Pomona.]

Bowel Hardened.—Killed a young rooster, and found a hard gristle substance from liver to stomach. Looked like a bowel, but was a hard, green substance inside. It appeared to be in perfect health. Chickens run in orchard and have a clover patch.—Mrs. W. B. C.

No; there was no disease. The gristle came from something the bird had eaten at some time. The liver tried to remove the obstruction by sending a flow of bile to the point and that colored the substance. Eventually it would have gotten rid of it and you would never have known that such an interesting thing had happened.

Heads Scabby.—My chickens have dark scabs on the heads; some have one and some several on the eyes or around them. They seem to have a good appetite. My neighbor calls it chicken pox.—Mrs. B.

Your neighbor is correct. Clean up all the rubbish around your yards, and if you have not too many chickens to handle each one separately, you can soon get rid of it. The main thing is to clean up and feed the chickens well to keep up their strength. Rub every chicken's head well over with carbolated vaseline; put ten drops of tincture of iron per quart of water and make them drink that instead of clear water. Vaseline the heads once a week and it will soon disappear. If you have too many to handle each one separately, get a can of Kreso Dip No. 1, mix according to directions, and spray the chickens on the roosts at night, not being particular whether you hit the head or feathers, because they will get the stuff on their heads themselves. Vaccination is also claimed to be a cure.

Pigeons Have Mucus in Mouths.—Have a flock of pigeons that are affected with canker or roup. They have difficulty in breathing, and yellow mucus gathers on nose, throat, and sometimes on the eyes.

Can you tell me how to distinguish between the two diseases? Am also troubled with mice eating the young squabs when a few days old. Please give me a good disinfectant for around the barn; one that will not injure the value of the manure.—Ignoramus.

Roup and canker are but different forms of one trouble, or to make it plainer, different symptoms. In patches on the throat it is called canker, or when it is on the bill, inside the mouth or on the tongue. In the eyes, nostrils, etc., it is just plain roup or catarrhal colds. When it gets in the throat it requires something strong. Pound up some bluestone very fine. Dip a feather in the fine bluestone and put it on the white patches in the throat. Give a little iron in the drinking water, and feed them well. They are probably a little low in vitality owing to the molt or they would not have got that trouble. See that they have no lice and spray your nests and runs with Kreso Dip No. 1, making the liquid quite white—the whiter it is the stronger. Directions for use come with it. Use it freely in all cases where there is roup or any poultry disease. The very best and surest remedy for mice is a good trap.

SOUTHERN CALIFORNIA FEDERATION NEWS.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

On Sept. 28 the Federation of Poultrymen met in Los Angeles to find out how the members felt about making a change in the grade and to see if they wanted to co-operate with the State through Col. Weinstock. The members were nearly unanimous in regard to the last proposition, but held some discussion about the grade. However, it was decided to make new grades to conform to those of San Francisco in size, weight, and color.

So long as Los Angeles had to import eggs, the grading was not of so great importance, but with the increase of production that has been going on the last year it is felt that Southern California instead of importing eggs will go into the exporting business, even in car-lots back to New York City.

In 1914 there were imported into Los Angeles 158 cases of eggs; in 1915, 53 cases; in 1916 only 27 cases; and it is quite certain that we could have gotten along without them.

It is estimated that we have an increase of 65 per cent in laying hens; and the members of the Federation alone turned into Kline, Simpson & Co. 16,000 cases of eggs in six months. Members of the Federation comprise not more than 35 or 40 per cent of the egg producers of Los Angeles county. A great many chickens are kept in the city of Los Angeles, and these eggs reach the consumer in many ways without going through the ordinary channels of trade, so that it is a little difficult to get at exact figures, but it is certain that Petaluma will have to look to her laurels. We have not so cheap feed here as the Petalumans; neither have we so cheap transportation; but we have just as earnest, vigorous men behind the poultry industry, that are willing to devote time and means to help each other and especially



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SOUTHERN PACIFIC

the beginner. Mr. Weinstock has promised to speak at a public meeting some time this month in Los Angeles and then the matter of co-operating with the State Commission will be considered and a system of work organized.

NESTS AND NEST EGGS.

[Written for Pacific Rural Press by Susan Swainsgood, Pomona.]

The nest should never be built near the dropping boards, but on the opposite side of the house. No matter how convenient they are made, if they are around or under the dropping boards there will come a time when the mites will follow the hen scent and perhaps just when you are very busy with other work the mighty mites will kill a few chickens for you before you find out what is the matter.

Have your nests put on the airy side of the house with either bottom or top opening all along the line so that you can spray and clean out when necessary.

Nest eggs made from chemicals and guaranteed to keep mites and lice away are a deception; they flavor the eggs, as they are composed very largely of naphthaline and coal oil, and they give a sense of security that is unfounded, because the mites go there anyway. It takes something more than odor to drive mites; it takes something to touch them. All nesting material should be taken out and burned once in two weeks at least. As all hens like to scratch around a little before laying it often happens that the litter is scratched out and the egg dropped on the bare boards, breaking the end that falls, which is always the small end.

To avoid that is sometimes hard on account of the build of the nests, but if your nests are built in rows that open from the bottom it is a good plan to spray the bottom with white distillate and carbolic acid, then tack a layer of gunny sack all along the nest bottom before putting in place. This saves breakages and the hens cannot scratch it out. The very best spray—and where it is not possible to spray it can be applied with a paint brush—is white distillate and pure carbolic crystals will make it strong enough to kill mites and other vermin, and it gives a clean wholesome smell to the nests. Never use crude oil near nests or eggs.

The very best nest material I know of is clean grain straw. Alfalfa hay is next, but if it gets wet, it discolors the eggs. Sawdust is not bad, but I don't like sawdust, because hens will pick it up some times and it may kill them. In the last they have a litter called O. K. litter that is good for nests and can be used as a scratch litter. From the good accounts of it it would pay some of our dealers to investigate and place it on the California market.

POULTRY NOTES.

Six poultry-fattening stations will be established in New Brunswick, Canada, before the beginning of the winter. The provincial government

intends to form poultry clubs in every county and to award prizes for the best dozen chickens fattened, killed and boxed for export.

The Escondido Valley has developed into quite a poultry country. One firm alone is shipping from there to the Los Angeles market \$500 worth of eggs per day.

The Pebbleside Hatchery of Sunnyside, Santa Clara Co., sold no less than 200,000 baby chicks last season and have doubled their incubator capacity for the coming season.

Reports from Imperial Valley say the turkey crop this year will be about the same as last. In the East there is said to be more turkeys than last year; but times are good there, hence a strong demand is felt.

The storage supply of eggs continues to grow beautifully less each month, hence the continued bullishness of the market. The 54 associated cold storage warehouses in the Central West and East reported on hand October 1, 2,871,000 cases of eggs, against 3,689,000 cases on same date last year. In Los Angeles, October 12, there were in cold storage 41,409 cases of eggs, against 38,439 cases at same date last year, an excess of 2,970 cases.

ARTIFICIAL EGGS.

Dr. Alois Wale of Craz, an Austrian chemist, has perfected a process for making synthetic or artificial eggs in the form of a coarse yellow powder. It is claimed that it is so similar in taste and smell to genuine egg powder that it is exceedingly difficult to detect the substitute. It is made from the albumen contained in the blood of slaughtered animals. Dr. Wale has named his product Haematalb, under which term it is already extensively used in the hospitals of Austria and Germany. It dissolves in water and has proven satisfactory in the preparation of pastry and other forms of food.

The owner of a large rice-milling company of Hawaii, who has just returned from an inspection tour of the rice fields and mills of California, Texas and Louisiana, says that Hawaiian rice cannot compete with American. "In California they are making big profits out of rice while the Chinese growers in Hawaii are playing a losing game."

Poultry Breeders' Directory.

TURKEYS, DUCKS AND GEESE.

HART'S BRONZE TURKEYS AND EGGS.—Large reduction in price of stock. Order now for fall delivery. Free Circulars. Albert M. Hart, Clements, Cal.

CHICKENS, CHICKS, EGGS.

BARRED PLYMOUTH ROCKS.—"The kind that Win and Lay." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for catalog showing winnings at California's leading shows. Chas. H. Volden, Box 398, Los Gatos, Cal.

INCUBATOR CHICKS.—Thoroughbred White Plymouth Rock, \$25.00 per hundred; White Leghorn, \$12.50 per hundred. Highest class of stock bred to standard and to lay. Awarded all first prizes at California State Fair 1916. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

BABY CHICKS NOW READY.—Hatches every week. Write for special "Fall Chick" circular. See why Fall chicks pay. R. I. Reds, Barred Rocks, Black Minorcas, White and Brown Leghorns. Campbell Poultry Ranch, Campbell, Cal.

CROLEY'S DRY MIXED INFANT CHICK FEEDS for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by GEO. H. CROLEY CO., Inc., Poultry Supplies, San Francisco.

THE SANTA CLARA VALLEY HATCHERY solicits your orders for Fall and Spring delivery in 8 breeds of baby chicks. Order early and get the best. Jos. A. Bihn, Lincoln Ave., San Jose, Cal.

DANISH S. C. W. LEGHORNS.—If you want to increase the size or vigor of your stock or the size and number of your eggs, use one of our cockerels. River Bend Farm, St. Helena, Cal.

EASTMAN'S BREED TO LAY Barred Plymouth Rocks, Chicks, Eggs, Cockerels. Fairmead Poultry Farm, Fairmead, Cal.

WHITE WYANDOTTES.—Blue-ribbon winners. Eggs \$2 to \$5. Chicks, pullets, cockerels R. W. Strawinski, Route 2, San Jose, Cal.

HIGH GRADE ANCONAS.—Fancy and utility. Settings, \$3.50. Fertility guaranteed. J. R. Bell, Livermore, Cal.

SICILIAN BUTTERCUP hens and pullets, fancy and utility, for sale. Fine stock at reasonable prices. M. S. Woodhams, San Mateo, Cal.

DAY-OLD CHICKS.—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS.—Pea Fowl, Pigeons. Wm. A. French, 645 W. Park St., Stockton, Cal.

WHITE WYANDOTTES.—Fine large cockerels, \$3.50. L. Haynes, Chowchilla, Cal.

ONE PAIR Plumaged Golden Pheasants. T. D. Morris, Agua Caliente, Cal.

Thirty Years Successful Roofing Experience



Thirty years of hard-earned experience—of rigid tests—of exhaustive experiments under all kinds of climatic conditions—have demonstrated that

MALTHOID JUNIOR

"The Right Roofing at the Right Price"

is the *best suited* for covering all classes of buildings—from a poultry house to a great factory.

It is made in only *one quality, one weight,* and sells at *one price*—

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**MALTHOID JUNIOR
ROOFING**

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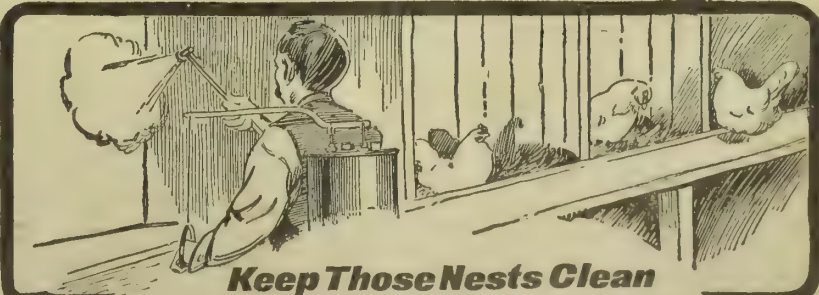
THE PARAFFINE PAINT CO.

SAN FRANCISCO

Mills and Factories at

OAKLAND, LOS ANGELES, ANTIOCH, CAL., SUMNER, WASH.

Manufacturers of Pabco Paint for Roofs
Amiud Wall Board and P & B Products



Keep Those Nests Clean

Mites, scaly leg and germs of roup, canker, white diarrhea and other diseases lurk unseen and unsuspected in the straw or shavings. Neglect may be the cause of infection wiping out your flock. Prevent the entrance and spread of disease by sprinkling the nests with

CARBOLA
The Disinfecting White Paint

Guaranteed harmless to the birds yet is 20 times stronger than carbolic acid in the destruction of germs. Comes in powder form. As a paint for the walls, ceilings and floors of poultry houses, cellars, dairies, barns and other places it is unequalled. Just mix with water and put on with brush or sprayer. Will paint any surface a beautiful snow-white and disinfect the premises at one operation. Will not taint food products of any kind.

Use It Instead of Whitewash

Will never flake, peel or blister. Adheres to wood, stone, brick or cement. Get it from your dealer. If he will not supply you send his name and your order to us.

10 lbs. (10 gals.) for \$1 and postage. 20 lbs. (20 gals.) for \$2 delivered free. 50 lbs. (50 gals.) for \$4 delivered free.

A trial package, enough to paint and disinfect 250 square feet, from your dealer or sent by parcel post for 25 cents.

GERMAIN SEED & PLANT CO., Distributors, Dept. L, LOS ANGELES, CAL.

**Try the Coulson
System of Feeding**
Our free book *Chickens from shell
to Market* gives full particulars
Coulson Co. Petaluma, Cal.

Mrs. Best's Letter.

My Dear Friends: I have seen some of the prettiest dress hats this week, made of combinations of lace or net and velvet or fur. One of them was very much of a sailor shape, with the brim of black net and the edge having a band of fur of the same color as the small crown of panne velvet. This suggested opportunities to work over a summer hat of net by adding a velvet crown or a fur trimming. Of course, these hats would not be suitable for wear in very bad weather, but on clear days they are very good indeed.

One of the other models was a mushroom shape, narrow, drooping brim made of a silver lace, without facing, so that the effect was light and dainty and the crown was of blue velvet shirred in a modified tam-o-shanter. Another model of the same shape was a combination of gold lace and pink velvet. This style of hat is trimmed very simply, just a rose or a little ornament of some kind and if fur is used, it is narrow and not heavy looking.

The furry beavers are with us again in soft colors as well as black and blue and they are trimmed almost like little girls' hats, a ribbon of metal color, loosely placed around the crown and a flat bow a little to one side of the front. They are soft and droop in graceful lines and are very generally becoming.

If you have a black velvet sailor with a soft crown that you want to



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BARKER BROS.

—a Western Store for Western Homes

Because at Barker Bros. you have a larger variety of everything in furniture and furnishings to choose from; qualities absolutely dependable; values specially attractive; every factor to make your furnishing completely satisfactory.

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If you can't come to our store conveniently, our "Personal Shopping Bureau" will select for you anything you want from our immense stocks and secure for you the very best value for your money.

Tell us your wants. Let us help make your home beautiful and comfortable at lessened cost.

We pay the freight 100 miles and part of the freight for greater distances.

Barker Bros
ESTABLISHED 1890

Complete Home
Furnishers

724 to 738 South Broadway
Los Angeles

THE HOME CIRCLE

change a bit, put a circular fold of black maline around the edge, letting it project a good inch—then with a narrow band of fur around the crown finished with a rose, you will have a much newer effect.

All the hats this year are worn well down on the head, making them seem more like a part of the individual than when perched high and to most people they are becoming. In some cases, a little loosening of the hair around the face is necessary to get the best results.

I think it would be impossible to have a season without seeing the three-cornered or colonial hats. This year they are irregular in shape, one of the points being longer than the others. These are shown in soft colorings as well as in light biscuit color tops with black velvet facing and for a general utility hat they are really more satisfactory than the larger hat.

As the season progresses, I see more hats that the brim has an upward tendency, and some of the new silk beavers have quite a pronounced roll to the brim and have fur trimming, something in a stiff feather or breast. Ostrich plumes are not much seen, although clusters of small tips and narrow ostrich bands are used on some hats.

There really is a very wide range of styles, so that it is quite possible to freshen up an old last winter's hat and feel quite well dressed in it.
Rosabella Best.

PICKLED ONIONS.

Pour hot salt water over small, white onions that have been previously peeled with a silver knife. Let them lay in this brine for two days, then drain onions and boil enough vinegar to cover them. Throw onions into the boiling vinegar and boil 5 minutes. Take from the fire and lay onions in glass jars, with alternate layers of whole white pepper, a few whole cloves, and five or six mustard seeds. When jars are filled, re-heat the vinegar, add 1 cup of sugar to each gallon, pour over the onions and seal while hot.

PRICKLY PEARS.

Editor Home Circle: In reply to inquiry of E. J. F. as to the use of prickly pears or cactus fruit, would say that I make a syrup of white sugar, as for figs, to which I add the pears after they have been peeled, and let them come to a boil slowly. Let simmer until rich and thick and clear looking, possibly all day long, and I think it makes an excellent preserve.—Mrs. S. A. B., Carpenteria.

Turnovers.—Meat turnovers furnish a good way for using up cold meat. The meat should have all gristle removed, and if more quantity is desired, add bread crumbs and highly seasoned tomato sauce to the well-chopped and seasoned meat. Roll the pastry thin, cut in rounds and place meat on half the round, after wetting the edges well, fold over the other half and pinch firmly together. Fry in hot fat or bake in a quick oven.

Floral Department.

[By Geo. N. Tyler.]

If you have not sown the seeds of the following, do so at once, as described in a former article: Sweet peas, pansies, coreopsis lanceolata, shirley poppies, stocks (gilly flower) and in fact most of the hardy annuals, biennials and perennials.

If you have a cold frame or small greenhouse you can put in the cuttings of achyranthes, that showy border plant. Put the cuttings in boxes of sandy soil (three inches of soil is enough) one inch apart and three inches between rows. The tips make the best cuttings. They must be protected from frost. Lift a few plants of lobelia and put them in boxes, so you can protect them from frost, and in the spring you can put in the cuttings from them and by planting-out time have fine plants for bedding or borders. The above plants and cuttings should be put away in a sheltered, shady place and after the first thorough watering, do not give any more until growth starts, which will be in about three weeks. Spray the plants every day in bright weather.

You can still put in cuttings of pelargoniums and zonal geraniums and they will make fine plants for spring. You can put in most any kind of cutting at this time and they will root very easily.

Carnations root very easily now. Make the cuttings from shoots on the flowering stalk. Do not take them too high up on the stalk or too low down; they must be soft wood. Put in sand and keep shaded and free from draught. They will root in about four weeks.

Take hard wood from lavender and also plumbago. Make the cuttings six or eight inches long, put them in four inches deep and most every one will root.

If you have not dug up your gladioli bulbs, do so at once. After they are dug put them away in a shady place for a week or two so they will dry off, then put them in the sun for a day or two to ripen. Then they can be cleaned and put in paper bags down cellar or up in the attic for the winter. But be sure and label each variety so they will not be mixed in the spring when you plant them out.

Continue planting all kinds of bulbs as fast as you can procure them. A great many pot plants are troubled with worms in the soil. An easy way to get rid of them is to make lime water, by putting any kind of lime in water. The water will only take up a certain amount of lime. Put the water in a bucket or tub and set the pots in it so the water will stand over the tops of the pots. This not only makes the worms come to the surface but also sweetens the soil.

BRAN BREAD.

One cup sour milk, 1 teaspoon each of soda and salt, ½ cup molasses, 1 cup whole wheat flour, 2 cups Ralston's bran, ½ cup raisins, ½ cup walnuts. Bake in a slow oven one hour.

BAKED GINGERBREAD WITH APPLES.

Cut five large apples in eighths, remove skin and seeds. Cook until about half done in a thin syrup made of one-half cup sugar and one-fourth cup boiling water. Drain apples from syrup, put in buttered baking dish and pour over a gingerbread mixture. Bake in a moderate oven. Serve with whipped cream, sweetened and flavored with vanilla.

SHOWERS FOR BRIDES-TO-BE.

In entertaining for prospective brides, novelty is much sought after and one of the new ways to entertain is to have a "Pantry Shelf" shower. The gifts must consist of jams, jellies and the like and in addition to being unique, provides a nice little gift for the new home.

10-rib Durability



Defies Wear-scuff and Wringer strain.

THE closer the weave the longer the wear. If you wish, you can prove in advance the durability of Mayo 10-rib underwear. This way:

See Mayo 10-rib Underwear. Note its closer weave. Count the 10 ribs per inch.

Then stretch a Mayo garment in your hands. Notice the "give." Such elasticity! It is this same elasticity which makes Mayo Underwear hug your body with its snug, true fit.

Feel that fleeced inner surface too. That's what puts June warmth into winter months.

Look out for dropping thermometers. Your Mayo 10-rib Underwear should be in a bureau drawer waiting now for the first cold day.

Men's Single Garments. Men's Union Suits. Boys Union Suits

Those who prefer the old style 8-rib garments will find Mayo 8-rib underwear an excellent value.

Mayo

The Same 10-Rib knitting that's found in dollar Underwear.

All dealers have Mayo Underwear or can very quickly get it for you.

THE MAYO MILLS, MAYODAN, N. C.

A Watch-It-Get-Em

Ant Destroyer—is slow acting—does not kill instantly, but gets the nest as well as the parent. Does not lose strength. Positively non-poisonous—no danger to children, house pets, or foodstuffs. Send for trial can. Ask your neighbor. She uses it. At your dealer. Accept no substitute.

DEPT. F, 19 to 25 MINNA ST., S. F.

Big Ben

A
Westclox
Alarm



TWO A. M.—inky dark—that's when Big Ben starts the Milkman's day.

Out of bed like a boy on the Fourth—nudges Big Ben to a hush—takes up the tune as he whistles to work.

Try Big Ben yourself a little earlier. See how he'll bring you the cream of the day with minutes a-plenty for every task. And you'll take up his tune and smile through the day.

He's seven inches tall, spunky, neighborly—down-right good.

At your jeweler's, \$2.50 in the United States, \$3.00 in Canada. Sent prepaid on receipt of price if your jeweler doesn't stock him.

Western Clock Co.

La Salle, Ill., U. S. A. Makers of Westclox

Other Westclox: Baby Ben, Pocket Ben, Bingo, America, Sleep-Meter, Lookout and Ironclad.



Don't fuss around half drenched when the **FISH BRAND REFLEX SLICKER** \$3. will keep you dry and comfortable

DEALERS EVERYWHERE
OUR 80th YEAR
A. J. TOWER CO. BOSTON

The Great Adventure

To restore the land and its resources to the people on equal terms—and to do it now. Beginning in California with No. 5 on Nov. ballot—the Singletax Constitutional Amendment.

Don't know about Singletax? Let Henry George tell you. Send for any of these George pamphlets: The Singletax, What It Is and Why We Urge It—The Crime of Poverty—The First Great Reform.

Furnished free in any quantity—also by Clarence Darrow, Land and People.

SAN FRANCISCO, 530 Pacific Bldg.

Good Health.

(By H. E. Pastor, M. D.)

The "A B C" of Bathing.

"Know ye not that ye are the temple of God, and that the Spirit of God dwelleth in you. If any man defile this temple, him shall God destroy." Which shows, that the idea of personal cleanliness (moral as well as physical) is primitive and as old as the race itself.

The human body is in process of building up and breaking down during every moment of its existence from its first feeble cry to its last expiring breath. Food, drink and fresh air furnish the building-up elements, and the eliminating organs of the body rid the system of its broken-down products. One of the most important of these excretory organs is the skin, which brings to the body's surface much waste matter in solution, the moisture passing off in insensible evaporation mainly, leaving a deposit of offensive matter on the body's surface, which, while it may elude the sense of sight, rarely escapes the sense of smell. The bath is employed primarily to remove this odoriferous and pore-clogging deposit, and no self-respecting person who regards his own comfort and the comfort of his intimates will neglect this sanitary habit. Don't strain the politeness of friends to the breaking point. The bath is a good deodorizer, and better than attar of roses as a sweetener. Take it early in the morning, and cold, if you are strong; in the evening before going to bed, and tepid, if you are debilitated or tired. Ten or eleven o'clock in the morning is, however, the best time of the day, and if you are a lord or lady of leisure you cannot devote this hour to a more sacred use. The cold sponge bath is the safest—using preferably, salt water, with or without soap, and it should be of short duration, followed by a brisk rub with a coarse towel. A cleansing tub bath, with soap and hot water, should be taken once a week, just before retiring; and this should be religiously followed the next morning with the customary cold sponge bath to harden the skin and remove susceptibility to catching cold. Some refinements of this highly healthful practice will be touched on in a future issue.

HEALTH BRIEFS.

No one is too poor to keep clean.

Health is an asset never sufficiently esteemed—until lost.

A careless spitter should be swatted like the careless fly.

Don't wait till tomorrow to reform an unhealthful practice; tomorrow never arrives.

If you value your eyes, don't be too lavish in patronizing the picture show. It cares more for your money than your eyesight.

Ill-health is Nature's punishment for some infraction of natural law, consciously or unconsciously committed. She's slow to act, but you can't elude her.

Cultivate habits of health. The right habit makes the job easy, and leads to longevity; the wrong habit is a short-cut to the cemetery over yonder on the hill.



"Young man, the best tonic for you is the right kind of food. I suggest for Breakfast

Ghirardelli's Ground Chocolate

It's easily assimilated — it's extraordinarily nutritious — and it is supremely delicious."

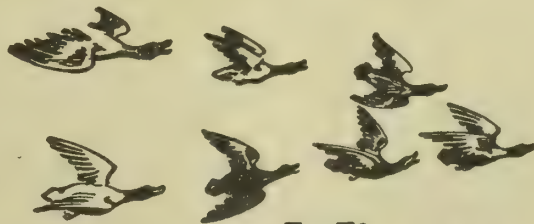
It comes PROTECTED—as all chocolate should—in ½-lb., 1-lb. and 3-lb. hermetically sealed cans.



Since 1852

D. GHIRARDELLI CO.

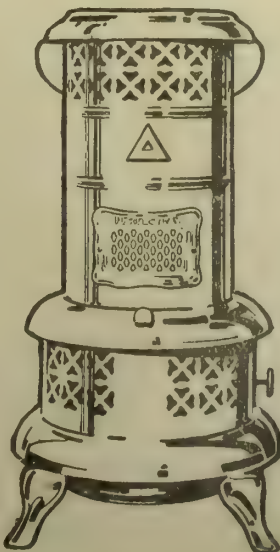
San Francisco



Winter is coming

Cold, rainy days—then you'll appreciate the cosy, cheery warmth of a good oil heater.

Can be carried easily and safely from room to room. One gallon of Pearl Oil gives 9 hours of steady, odorless, clean heat.



Perfection Oil Heater

Dealers Everywhere

STANDARD OIL COMPANY
(California)

SAN FRANCISCO.

San Francisco, Oct. 18, 1916.

Wheat.

Buying for export has been very heavy in the East, and advances there are reflected in the northern market, with slight advances locally on some grades.

[First-hand prices on strictly first-class grain, San Francisco.]
 Sonora wheat \$2.20@2.25
 Northern club 2.20@2.25
 Cal. club, cti. 2.20@2.25
 Northern Bluestem 2.50@2.55
 Northern Red 2.30@2.50

Barley.

Spot barley remains very firm, with an active jobbing demand and more or less inquiry for export and Eastern shipment. No further advance is noted, however.

Shipping, cti. \$1.80@1.85
 Choice feed, cti. 1.75@1.80

Oats.

Red and black seed oats are rather scarce, and red are quoted at a rather sharp advance. White are slightly easier, and feed oats remain steady as before. Prices quoted on seed are for re-cleaned stock, from dealers. Feed prices are for first-hand offerings, San Francisco.

Red feed \$1.80@1.85
 Red seed 2.15@2.20
 White 1.70@1.75
 Black seed 3.00@3.25
 Texas Red seed 2.40@2.50

Corn.

Most of the Egyptian offered so far is in poor shape, according to local dealers, and they are rather slow in taking hold of it, though prices are pretty firmly held in the country.

[First-hand prices on strictly first-class grain, San Francisco.]
 Eastern Yellow, cti. \$2.10@2.15
 Milo Maize Nominal
 Egyptian, new 1.80@1.85

Beans.

The bean market is still spasmodic and unsettled, with crop conditions imperfectly known. While reports from some sections indicate slight damage, others are very discouraging, and dealers state that almost the entire crop in some lines will show damage. They are accordingly unwilling to buy except on very close inspection, and growers are holding off a little in anticipation of an advancing market. The shortage has already brought some sharp advances, the only decline being on pinks. One interest has been paying \$8 for small whites threshed before the rain, but these are now believed to be all cleaned up, as well as old-crop stock. It will probably be several weeks before the market gets down to a definite basis. The Michigan crop is reported as being good and prices there are \$5 per bushel, or \$8.30 per hundred.

[First-hand prices, on wharf, San Francisco.]

Bayos, per cti. \$4.75@5.00
 Blackeyes 4.25@4.40
 Cranberry beans 5.00@5.20
 Horse beans 3.25@3.50
 Small Whites (south) new crop 7.50
 Large Whites, new crop 7.00@7.25
 Pinks 5.25@5.50
 Limas (south) 5.40@5.50
 Red Kidney 6.50
 Mexican Reds 4.90@5.00
 Tepary beans 4.25@4.50

Soybeans.

Alfalfa is declining, with larger offerings. Quotations are for re-cleaned or guaranteed seed, free from dodger, etc.; average prices to growers about 5c less, depending on quality and location. Melilotus alba is very scarce and high.

[Wholesale prices, S. F.]
 Alfalfa, per lb (guaranteed) \$1.18@1.19 c
 Oregan Vetch 4.45@5 c
 Melilotus Indica 7 1/2 c
 Melilotus Alba 23 c
 Bur clover, re-cleaned 12 1/2 c

Hay.

Arrivals have decreased sharply, probably owing to the rain, but with light local demand little is being drawn from warehouses. There is little export business, and country business is reported quite active, but the city demand is very slack. Green feed is coming up rapidly in the country, and will avoid the necessity of feeding a great deal of hay. Straw is in strong demand and, higher.

[Wholesale prices per ton, carload lots, San Francisco.]

Wheat, No. 1 \$13.00@14.50
 No. 2 10.00@12.00
 Tame oats 11.50@15.50
 Wild oats 10.50@13.00
 Barley 10.50@13.00
 Alfalfa 10.00@14.50
 Stock hay 8.50@9.50
 Straw, per bale 45@65

Feedstuffs.

[Wholesale prices per ton, carload lots, San Francisco.]
 Beet pulp, per ton Nominal

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
 Prices Quoted as Paid to Producers.

Alfalfa meal, per ton \$18.00@19.00
 Bran, per ton 26.00@27.00
 Oil Cake Nominal
 Coconut cake or meal 23.00@25.00
 Cracked corn 44.00@45.00
 Middlings 35.00@38.00
 Rolled barley 37.00@38.00
 Tankage 45.00
 Rolled oats 35.00@36.00
 Rice middlings 30.00@32.00

Potatoes, Onions and Vegetables.

Delta potatoes are again coming in freely, but supplies are not excessive and prices are firmly held. Stockton holders of onions are asking \$2.50 per cti., and the local market, though rather slow to follow, is higher. Sweet potatoes are higher. Tomatoes are still offered freely.

Celery, Alameda, bunch 10c
 Cucumbers, lug 50@75c
 String Beans 2@3c
 Lima Beans 2@3c
 Summer Squash, lugs 50@75c
 Eggplant, lugs 30@40c
 Peas, lb 6@8c
 Tomatoes, lugs 35@50c
 Rhubarb, lugs 75@1.00
 Potatoes, cti, Delta \$1.50@1.75
 Salinas 2.25@2.35
 No. 2 75@1.00
 Sweet Potatoes, per cti. 1.75@2.00
 Onions 2.00@2.40
 Garlic, new crop, per lb 3@5c

Poultry.

Prices show a general slump, with chickens arriving freely from State points, and a good deal of Eastern stock carried over. Turkeys also are lower, with increasing arrivals, while Belgian hares are higher on increasing demands.

[Wholesale prices, S. F.]

Turkeys, live, lb. young, large 24@25c
 Old, large 23@24c
 Broilers, 18 lbs. to doz. and less, lb. 26@28c
 do, over 18 lbs. to doz. 22@23c
 Fryers 20@22c
 Hens, extra, per lb. colored 20c
 Small leghorn 15@17c
 Smooth Young Roosters, per lb. (3 lbs. and over) 22@24c
 Squabs, per lb 35@40c
 Geese, per lb 14@15c
 Ducks 14@15c
 Old 13@14c
 Belgian Hares 11@12 1/2c

Butter.

Prices have fallen back a little this week, remaining practically stationary. The submarine raid is blamed for shutting off of Eastern inquiry, which may be resumed at any time, and with little export business arrivals are ample for local needs.

Thurs. Fri. Sat. Mon. Tu. Wed.
 Extra 33 1/2 33 33 33 33
 Prime 1st 32 1/2 32 1/2 32 1/2 32
 Firsts 32 32 32 32 31 1/2

Eggs.

Last week's sharp advance has not been well maintained, though the market is still rather firm, with production light at all nearby points.

Thurs. Fri. Sat. Mon. Tu. Wed.
 Extras 48 47 1/2 48 48 1/2 48 1/2
 Sel. Pul. 43 43 43 1/2 43 1/2 43 1/2

Cheese.

Monterey cheese is slightly higher, in sympathy with the recent advance in flats. The latter, as well as Y.A.'s, remain steady as last quoted.

[S. F. Dairy Exchange prices.]

Y. A.'s, fancy 18 c
 Fancy Calif. Flats, per lb 16 1/2 c
 Monterey Cheese 16 1/2 c

Deciduous Fruits.

After a week of poor and damaged offerings, local supplies are again showing attractive quality and the movement is improving. Strawberries are an exception, and prices are still low. Apples stand steady as before, with a great deal of stock being stored by first-hand holders. Bartlett pears are firmer, all stock coming from storage, and winter nells are somewhat of a factor in the market. Figs are much lower, with liberal offerings, largely off-grade. Cantaloupes have been in oversupply, poor stock, no demand, prices are hardly quotable. Most lines of grapes are lower, though firmer for several days past.

[Wholesale prices, San Francisco.]

Huckleberries, lb., fancy 8@10c
 off grade 6@8c
 Strawberries, chest \$3.50@5.00
 Cranberries, Cape Cod, bbl. 9.00@9.50
 Apples:
 Bellflower, box 60@75c
 Jonathans 85@1.00
 Newtown 85@1.00
 Pears, Bartlett, bx, No. 1 2.00

Winter Nellis 1.25@1.75
 Persimmons, box, dbl. layer 75@1.00
 Pomegranates, lug 1.00
 Quinces, lugs 40@50
 Figs, Cal. black box, double layer 75@85
 White, single layer 60@75
 Casabas, crate 75@1.25
 Watermelons, doz. 1.50@2.00
 Grapes, Malaga, lug 65@75
 Muscat, lug 1.00@1.25
 Thompson, lug 75@1.00
 Tokay, lug 75@1.00
 Black, lug 75@1.00

Dried Fruits.

The general market continues in very healthy condition, as far as demand is concerned, with an active movement into consumption in the larger markets, as well as a good deal of export business on several vessels now leaving for Europe. Apples are rapidly being absorbed, and evaporators are getting as high as 7c for the best stock. The expectations of growers as to 15-cent apricots have also been fulfilled, though there are now very few with anything to sell at this price. Black figs have moved up another notch, with heavy loss reported to the white varieties not dried before the rain; output will be extremely short. The shortage of small prunes has forced the price up to 6 1/2c, and 6c is now offered for large sizes, with holdings in the country becoming rather scarce. The Association has advanced the price of peaches from 1/2 to 3/4c on all grades. The Raisin Company announces 100 per cent delivery on contracts for London layers and fancy clusters, other grades being short as formerly reported. [Net to growers, bulk basis, f. o. b. shipping point.]

Apples, new crop 6 1/2 @ 7 c
 Apricots, per lb. 1916 14 1/2 c
 Figs, white, 1916 None offered
 Figs, blk 5 @ 5 1/2 c
 Calimyrna, 1916 None offered
 Prunes, 4-size basis, '16 6 @ 6 1/2 c
 Pears 6 1/2 @ 7 c
 Peaches: Standard yellow 6 c
 Muirs 6 1/2 c

Almonds.

The Almond Exchange stock is now practically all sold out, and almonds are moving in a jobbing way at an advance of about 2c.

Groceries.

Two more jumps have taken place in sugar, which is now held at a \$7.45 basis, and flour is up to \$7.80 and \$8.20 per bbl. Compound lard is up 1c per lb. Condensed milk is up 10c per case, and canned meats are also higher. Advance of 2c per gal. reported in salad oil, matches are expected to advance Nov. 1.

Horses.

Local market dull and featureless.

Special Livestock Market Report.

San Francisco, Oct. 18, 1916.

There is no quotable change in any of last week's prices, though cattle are getting scarcer in California and the supply from over the mountains does not equal the demand. Prices tend to rise. Hogs are still of grain-fed quality, stubble stock being continued on grain. Sheep movements equal the demand. There is no movement in wool except a few small lots being bought in the country at about prices quoted.

[Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.]

Steers, No. 1 6 1/2 @ 7 c
 No. 2 6 @ 6 1/2 c
 Cows and Heifers 5 1/2 @ 6 c
 No. 2 5 @ 5 1/2 c
 Bulls and Stags 4 @ 4 1/2 c
 Calves, light 8 @ 8 1/2 c
 Medium 7 @ 7 1/2 c
 Heavy 6 @ 6 1/2 c
 Hogs, grain-fed:
 100 to 150 lbs. 7 1/2 c
 150 to 250 lbs. 8 1/2 c
 250 to 325 lbs. 8 1/2 c
 Prime Weaners 6 1/2 @ 7 c
 Spring Lambs, f. o. b. country points \$5.25@5.75

Wool.

Red Bluff, year's 25@27c
 Mountain, fall 13@14c
 Sacramento Valley, year's 19@25c
 Mendocino, year's 31@32c
 Mendocino, 7 months' 26@27c
 Southern, year's 18@21c
 Southern, 7 months' 13@16c
 Southern, fall 9@11c
 Imperial Valley, year's 17@19c
 Imperial Valley, 7 mos. 14@15c
 Nevada 21@23c
 Fall wool 10@20c

Los Angeles, Oct. 17, 1916.

CATTLE: A steady market and fair demand continues to be had for all good fleshy and fat steers. Fat cows and heifers also in fair request. California and Nevada furnished most of the supplies and gave us some very good grass cattle. Killers were all in the market, and while bidding steady prices, the tone of the market was weak. Quotations are f. o. b. Los Angeles:
 Beef steers, prime, 1000 to 1100 lbs. \$7.00@7.75
 Stockers and feeders 5.50@6.00
 Prime cows and heifers 6.25@6.50
 Good cows and heifers 6.00@6.25

The principal matter of interest is a sale of 500 horses and 250 mules, said to be mostly young stock of light to medium weight, to be held the latter part of this week at Wheatland, by the E. C. Horst Co.
 Drafters, 1700 lbs and up ... \$ 250
 Drafters, 1550 to 1650 lbs ... 150@200
 Chunks, 1350 to 1500 lbs ... 150@175
 Wagon horses 1050 to 1350 lbs 110@150
 Green Mountain range horses, 950 to 1200 lbs 20@75

Hides.

Steers 19@19 1/2 c
 Cows 17@19 1/2 c
 Light hides, 25 to 48 lbs. 19@19 1/2 c
 Kip 21@22 c
 Calf and veal 27@28 c
 Dry Hides 31@32 c
 Dry Kip 34@35 c
 Dry Veal and Calf 36@40 c
 Pelts, long wool \$1.75@1.90
 Short wool85@1.10
 Horse hides, wet, large, ea. 5.00@5.50
 dry, large 3.00@3.50

LOS ANGELES.

Los Angeles, Oct. 17, 1916.

Butter.

Receipts California by rail for week ending Tuesday, October 17:
 1916 260,800 lbs.
 1915 285,100 lbs.

The high prices of last week checked consumption and with weaker markets east, extras sold down Saturday 1c to 33c, at which price the market has ruled steady since. This is 7c higher than a year ago. Receipts are a little lighter this year than last, to which with a marked shortage in the cold storage stock, must be ascribed this advance, rather than any increase in the demand.

Wed. Thu. Fri. Sat. Mon. Tu.
 1916 34 34 34 33 33 33
 1915 26 26 26 26 26 26

Eggs.

Receipts by rail as reported to the Produce Exchange for week ending Tuesday, October 17:

1916 1012 cases
 1915 835 cases

There was a further upward movement in this market the past week. Receipts were light and the street demand held up very well, taking the current receipts. Cold storage stocks here only fair, while in the Central West and East they are over 800,000 cases short of last year. Hence the market has been getting no assistance from that quarter, compelling trade to depend upon nearby production and causing buyers to bid up well to get what they want. Railroad receipts for the week 1012 cases and estimated by truck 700 cases, total 1712 cases against 1595 cases by rail and truck same week last year. Wednesday under better receipts and weaker markets East, prices broke 2c, fresh ranch case count selling at 48c.

Fresh ranch case count 48c
 Pullets 40c
 Daily quotations on 'Change:

Wed. Thu. Fri. Sat. Mon. Tu.
 1916 48 50 50 50 50 48
 1915 40 40 40 40 40 40

Special Deciduous Market Report.

[By J. L. Nagle.]

Sacramento, Oct. 16, 1916.

All markets on both Malagas and Tokays are unusually high, and in fact the demand exceeds the supply everywhere. Though considerable damage was done by the recent rains to the first crop, the quality of the second crop, which is unusually fine, has to a large extent offset the damage.

Drum and keg packing of Emperors is in full swing and practically 85 per cent of the output has been sold in advance, at prices that will average net to the grower in excess of \$30.00 a ton.

The following prices have ruled for the week:

New York.—Tokay grapes averaged \$1.62; Malaga, \$1.21; Muscat, \$1.35; Clairgeau pears, \$2.48.

Chicago.—Tokay grapes, \$1.76; Malaga, \$1.35; Cornichon, \$1.54; Persimmons, \$1.52.

Boston.—Tokay grapes averaged \$1.75; Malaga, \$1.47; Cornichon, \$1.97; Muscat, \$1.47.

Total shipments to Oct. 16, 14,763 cars; total shipments same date 1915, 13,449 cars.

Poultry.

Receipts continue light and altogether local. No eastern poultry coming in. Broilers in good demand and higher and so are fryers. Young roosters bringing more money. Hens, ducks, turkeys and geese unchanged and all in fair demand. We quote from growers:

Broilers, 1½ to 2 lbs.24@25c
Fryers, 2½ to 3 lbs.20@22c
Hens, over 4 lbs.19@20c
Hens under 4 lbs.15@16c
Ducks14@15c
Geese13c
Roosters, 3 lbs. up (soft bones) 20c
Turkeys, heavy, 12 lbs. and up..21@22c
Turkeys, light16@19c
Squabs, live, per doz.\$1.50@3.00
Dressed3.75@4.85

Hay.

There is no change to note in this market from a week ago. It continues very dull. All kinds are being neglected. Receipts the past week were

not heavy, yet at the same time were more than enough for the demand. Each day saw more or less hay carried over unsold. Receipts past week 150 cars. We quote f. o. b. Los Angeles:

Barley hay\$14.00@16.00
Oat16.00@18.00
Alfalfa, Northern13.00@14.00
Alfalfa, local15.00@16.00
Straw7.00@7.50

Walnuts.

The movement of walnuts to market is still light owing to unsettled weather. Some few are coming in and demand good and market firm at quotations.

The associated prices this year and last are:

No. 1	1916	1915
No. 2	\$15.50	\$13.50
Budded	12.50	10.50
Jumbos	19.00	17.00
Jumbos	17.50	16.50

Orchard run 3c per pound less.

Special Citrus Market Report.

Los Angeles, Oct. 17, 1916. Shipments of oranges from Southern California from Nov. 1, 1915, to Oct. 15, 1916, 31,031 cars oranges and 6,777 cars lemons; against 32,802 cars oranges and 6,683 cars lemons same time last year.

Shipments from Central California from November 1, 1915, to October 15, 1916, 5,402 cars of oranges and 150 cars of lemons, against 5,650 cars of oranges and 207 cars of lemons same time last year. Light supplies and the lateness of the season caused a higher market at the East the past week, and demand very good both for oranges and lemons. The falling off in the receipts of other fruit and larger demand for them also helped the market and caused buyers to take hold more willingly. Locally the market keeps dull. Only old stock on hand. No new oranges in yet. Desirable sizes in fair demand, but all others very dull. Lemons much neglected.

New York, Oct. 16.—Sixteen cars of Valencia and three cars of lemons sold. Oranges and lemons about 25c higher. Weather partly cloudy. Valencia averaged \$3.20 to \$6.45; lemons averaged \$2.90 to \$5.30.

Boston, Oct. 16.—Seven cars sold. Market stronger and higher on both oranges and lemons. Valencia averaged \$3.30 to \$5.20; lemons averaged \$5.10 to \$5.60.

Philadelphia, Oct. 16.—Four cars sold. Market strong and higher. Valencia averaged \$2.30 to \$4.95; lemons \$3.65 to \$4.65; grapefruit \$3.65 to \$4.30.

San Francisco, Oct. 13.—Nine cars Valencia, one car mixed and one car of lemons sold. Valencia fully 25c higher. Lemons also 25 per cent. higher. Weather cloudy. Valencia averaged \$3.25 to \$5.45; grapefruit, halves \$1.00 to \$2.35; lemons \$4.40.

Boston, Oct. 13.—Four cars sold. Market is doing better. Valencia averaged \$4.00 to \$5.05.

WEEKLY BUTTER AVERAGES.				
Cents per pound for Extras.				
Week Ending	San Francisco	Los Angeles	San Francisco	Los Angeles
Jan. 2	28.60	28.00	28.80	28.80
" 9	25.33	26.65	26.00	28.16
" 16	27.50	27.83	26.83	28.10
" 23	30.66	28.25	30.66	28.50
" 30	28.66	36.33	28.00	36.66
Feb. 6	26.88	30.25	26.80	32.33
" 13	26.74	31.40	27.30	33.25
" 20	29.00	32.00	27.16	32.00
" 27	29.10	30.90	27.00	35.25
March 6	27.00	24.08	25.25	24.16
" 13	24.66	29.91	24.00	28.83
" 20	23.00	28.33	22.50	27.16
" 27	22.91	28.50	23.00	28.08
Apr. 3	23.00	28.50	22.23	28.83
" 10	23.08	29.31	32.00	28.00
" 17	23.00	27.33	22.00	27.50
" 24	23.00	25.25	22.00	25.00
May 1	23.08	24.33	22.00	25.33
" 8	23.00	24.10	23.08	25.00
" 15	23.16	24.58	23.00	25.66
" 22	23.75	25.00	23.25	25.00
" 29	23.08	26.50	23.00	26.50
June 5	23.90	25.50	23.00	27.00
" 12	24.08	25.83	23.83	27.00
" 19	25.16	24.50	26.00	25.91
" 26	25.50	24.50	26.16	25.91
July 3	25.83	24.60	26.16	26.00
" 10	26.21	26.40	26.00	26.60
" 17	26.58	25.83	26.00	26.00
" 24	25.41	26.00	25.50	26.00
" 31	27.00	26.00	26.00	25.91
August 7	27.00	26.16	26.00	26.00
" 14	27.00	26.50	26.00	26.00
" 21	27.50	26.50	26.00	27.95
" 28	28.00	27.25	26.00	28.50
Sept. 4	28.00	30.00	26.00	30.50
" 11	28.00	30.20	26.00	32.00
" 18	27.00	30.41	26.00	31.09
" 25	26.50	30.41	26.00	30.50
Oct. 2	25.91	31.66	26.00	32.16
" 9	26.91	32.91		
" 16	27.00	33.50		

WEEKLY EGG AVERAGES.				
Cents per dozen for Extras.				
Week Ending	San Francisco	Los Angeles	San Francisco	Los Angeles
Jan. 2	38.50	35.60	42.00	35.00
" 9	32.66	31.41	35.16	32.00
" 16	31.00	30.33	30.33	30.75
" 23	30.50	34.83	30.00	34.33
" 30	28.16	36.33	26.66	36.66
Feb. 6	23.33	35.66	23.75	35.50
" 13	23.00	28.90	25.10	28.00
" 20	23.60	23.66	23.58	20.33
" 27	21.40	20.30	20.80	18.50
March 6	20.50	18.33	19.00	18.00
" 13	20.66	19.50	19.00	18.91
" 20	21.00	20.00	19.66	19.08
" 27	20.83	21.41	18.50	20.83
Apr. 3		21.75		21.00
" 10		22.00		21.00
" 17	22.00	21.16	23.08	20.91
" 24	21.80	21.83	22.25	22.58

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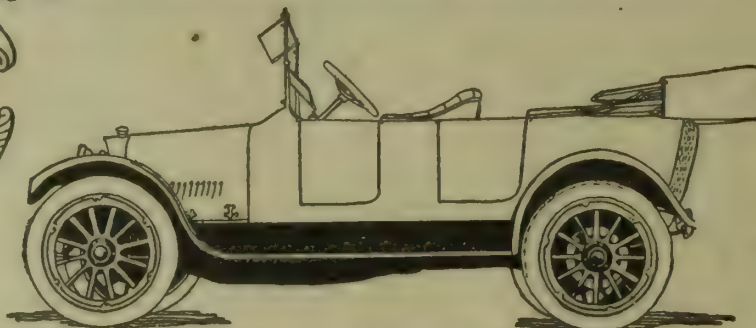
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REO PERFORMANCE—reliability, dependability, uniformity of performance of all Reos, of whatever model or price—is the result of the taking of infinite pains in the designing, the making and the inspection of the Reo product.

IT'S THE LITTLE THINGS that count—not the big ones.

ANYONE—A BOY EVEN—can make a motor that will be "different." Or an axle, a transmission or a set of springs that might impress the tyro as new and wonderful.

BUT TO MAKE ANY of these vital units better—that is the task—that should be the aim. It has always been the Reo aim.

INFINITE CARE in the fabrication and then in the inspection, and finally in the testing of the assembled whole—that is the secret of Reo success in making, not the most but the best, automobiles.

IF THERE ARE 2000 PARTS in a motor car; and if there's an average of four machining operations on a part—that's 8000 chances for something to go wrong!

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"THOSE PESKY LITTLE TROUBLES that are always happening with other cars, are unknown to the Reo owner," says one Reo dealer, "and that's why the demand for Reos is so great."

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"THE
GOLD STANDARD
OF VALUES"

THE PACIFIC RURAL PRESS

SAN FRANCISCO

OCTOBER 28, 1916.

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 LOS ANGELES

How Ornamental Exotics Reached Here.

Fifteenth of a Series of Sketches in Which the Editor Presents Suggestions, Drawn from Long Experience, of What Californians Have Done and May Do for the Advancement of California Agriculture.

UST as California sprang, full-panoplied, into the sisterhood of sovereign States, without tarrying in a territorial purgatory, so California was bedecked, almost from the date of her American birth, with exotic vegetation from all quarters of the globe. Endowed by the Creator with native vegetation of unique grandeur, novelty, variety and charm of form, hue and growth-habit; enriched by the padres through introduction of the world's most important semi-tropical fruits, California came to her union with other American States clad in plant beauty beyond that of other States—"as a bride adorneth herself with her jewels."

First Display of Exotics.—The language is florid, as becomes the theme, and has glowing precedent, as the reader may now see. In 1851 there was an exhibit in San Francisco at which there was a wonderful display of fruits, vegetables, grains and forage plants, a prominent feature of which was an announcement by A. Williams, the orator of the occasion, that C. A. Sheldon "has this day received from Valparaiso a choice assortment of rare and valuable exotics—the entire stock of a greenhouse, including (aside from fruiting plants), fifty varieties of jessamines, four of African hibiscus, eight of chrysanthemums, twelve of althea, wax-plants, pinks, cacti, eighty-four dahlias, and over one thousand rose bushes." And the orator continued: "There is scarcely a fruit or plant, a shrub or a flower of which any land can boast but what is embraced within the limits of California—a bright, particular star in the constellation of States, the crowning gem in the tiara of freedom"—which is surely going some, oratorically and exotically.

Why Such Haste?—Exotics came to California in volume and variety and with speed unknown to new States, and why? The argonauts were men of high emprise. They were spenders of which this continent has never seen the like—either before or since. Unprecedented prices waited for plants, both from those who wished the plants themselves for local growth and from those who only desired their symbolism. Gallantry was at its apex and cried aloud for expression. Gold slugs and nuggets, plaques and jewelry became too trite for showers upon operatic and terpsichorean stars whom the populace worshipped and for other inferior luminaries by whom they were entranced. It was a time when knighthood was in flowers. Beyond such sensational outbreak of demand for rare bloom, there was the brisk call for exotics for homes and for home gardens. It was a grand joy to newcomers to know that plants which they had never before seen, except under glass, surpassed all memory of their size and vigor in the open air in California. And so the early Californians demanded exotics, of which they knew something in their old homes, so that they would have something by which to measure the capacity of their new homes. And they all had money to pay for what they yearned for. It is not strange, then, that trade was brisk, nor that it drew exotics from everywhere. This is the reason that Mr. Sheldon, aforesaid, bought the full of a Chilean greenhouse and shipped it bodily to San Francisco, as has already been noted, before the State was a full

year old perhaps. Think of it; if we include the work of others at about the same date, there was probably a shipload of potted plants sent to a community reputed to be largely flannel-shirted, with its trousers in its boots. There never was such a thing before in the world!

Whence Came Exotics?—Seeds, bulbs, roots, scions and living plants came to California from every country which sent gold-seekers. It was a popular movement, induced at first by trade opportunities and by native-plant love, dictated by desire of all to have something of the old home installed in the new home. Very soon another motive was added, viz., to establish plant industries in California, which were important in other countries. Quite a number of pioneers who came for gold revisited their old homes to secure collections of plants with which to establish production new to this continent. The State staked some of these undertakings and men of wealth freely indulged in similar ventures, even larger in their money requirements. And beyond these large undertakings, nearly all individuals brought something. Quite a number brought as wives the girls they left behind them, and they, themselves the loveliest exotics of pioneer days, brought their dearest posies with them, of course. And so, by prairie schooner, and by real ship from Mexican ports, from



A Marvelous Display of Indian Azaleas—10,000 Blooming Plants Grown at Cottage Gardens Nurseries, Eureka, Calif.

Panama or "the horn around"; across the Pacific from the Orient, from the islands of the southern seas—from everywhere, came exotics from all the world's climates, and found congenial home in California—the strictly tropical under glass, all others in the open air.

Which Exotics Came First?—The data which the writer has now in hand do not make it possible to determine priority in the arrival of particular plants, after the inrush of Americans in 1849. We know that from 1769, during several following years, probably, the padres introduced from Mexico (and possibly direct from Spain also all the commoner deciduous and evergreen fruiting plants. We also knew that the few Americans who came to California during the two decades before the gold discovery in pursuit of peltry, trade, Spanish land grants (with or without wives attached), and finally for war and conquest, made homes, for the adornment of which many plants were brought from Mexico and Central America. These forerunners of American occupation must be counted first in appreciation of California. They were in part of American and in part of European origin. William Wolfskill planted citrus trees in orchard as early as 1838 in Los Angeles, and during the years immediately following that

Continued on page 458.)

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EDITORIALS

HUMIDITY OF THE SOUTH COAST.

ONE crosses the mountains now, from the upper Salinas valley to the old town of San Luis Obispo, to find the higher foothills, on the coast side, verdure-clad, and the coast valleys below stretching away like newly-made lawns. This is not common to see so early in the autumn because it is exceedingly rare that early rains on the south coast are so copious, and it is reasonable to expect that the four to six inches of precipitation before the middle of October will hold the new growth until still more water falls—thus giving abundant fresh pasture to replace the dry feed which was ruined. But there is a darker shade to the situation in the loss which has fallen on the bean growers in this southern coast region, which is so great in the bean world. Far and wide, from the very dunes of the shore up the valleys extending toward the mountains, one sees hundreds of acres of lawn-like verdure marked with black dots in regular lines, as though the provident lawn-makers had cleaned up thousands of corrals and dropped the scrapings in little piles convenient for spreading. If that were the fact we surely could claim high efficiency in the improvement of pasture land for these coast-side farmers. But unfortunately the fact is otherwise. What now has so much the distant appearance of manure piles is really much of the bean crop which had been root-cut and raked to wait for the threshing, which will probably never come for much of the crop. Dank and blackened now, decay will probably overtake much of the product. Drying conditions have not been good. The oldest inhabitant refuses to recall so thick and wet a fog as has prevailed since the rains. Thus many lost beans must be added to the lost raisins and other penalties which follow Nature's indulgence in a different sort of autumn from that which the prophets prescribe.

SANTA BARBARA AND THE NURSERYMEN.

WE ARE writing in Santa Barbara, whither we have flown to be early at the opening of the annual convention of the California Nurserymen's Association, which will occur after this issue has gone to press. We find much interest manifested in this assembly of plant-loving propagators and distributors of horticultural foundation-material. The nurserymen were in at the very beginning of agricultural development which is now making California so rich—and beautiful from the point of view of cultural achievement. It is the progenitors of the present generation of nurserymen to whom credit must be given for the remarkable achievements with exotic plants which we have joyed to sketch on other pages of this issue, and the nurserymen of today are zealous to continue and extend the work of their commercial and horticultural ancestors. This they are doing with much of the same spirit and industry which made great achievements possible in the early days. The size of their establishments, the total number of them, the investment they make in lands and buildings, the amount of money which they disburse to their employees are all proportionate to

the results which they achieved in co-operation with the exceptionally favorable growing conditions which California affords, and place this State very high in the rank of baby-plant production in the United States. As representatives of this benign and delightful industry, the people of Santa Barbara are preparing a very warm welcome for the nurserymen and women. They can understand their spirit and appreciate their achievements, because Santa Barbara is, as goes the slogan, "the Mecca of Plant Lovers," and the local professors and amateurs in plant beauty are confident they can show their guests of this week much to delight their hearts and strengthen their hands in the multiplication of desirable growths for the adornment of highways, parks, grounds for recreation and education, etc., as well as for ministrations to the joys of those who bring enthusiasm to the beautification of private homes. And Santa Barbara could hardly feel otherwise than thus toward an organization of plant growers and distributed in local gardens, than any other section of the State has larger collections of the most interesting exotics and more intelligent and appreciative amateurs in plant collection in both large and small ways. It has been claimed without contradiction that Santa Barbara has more genera and species of exotic plants showing their mature charms and more of their offspring widely distributed in local gardens, than any other section of the State. We presume it is also true that no other section of equal population has exchanged more wealth for plant treasures than has Santa Barbara. And so it comes about that Santa Barbara is preparing really a florid welcome for all plant-lovers who shall come this week from beyond her mountain and ocean boundaries. The city and its thriving suburbs have been doing much of late in the way of welcomes to those who have undertaken pilgrimages from social and fraternal motives, and more grand panjandrum of world-wide orders have floated on the wings of decorated motors through her suburban shades than have spread their regalia in any other California residence town, and yet none of these startling experiences have dulled her deep and sincere satisfaction that those who give their lives to the growth of plants of use and beauty should choose to assemble beneath her affectionate hovering. We see all this in advance, and therefore we expect for the nurserymen's association a most notable convention.

POTASH FROM THE OCEAN.

COMING wealth from sky and sea is now above the horizon. We refer, not to the possibilities in aeroplanes and submarines, when the close of the war consigns these new engines of civilization to more peaceful pursuits. There will be plenty of time for such efforts at foresight when the end of the war draws nearer. There seems at the moment to be no hurry about it, for we have been beaten at the only game of prophecy we ever took a hand at. We did say last winter that the war would end before the prunes came home—which we mention now simply to make forgetting easier. But there are other treasure-seekings of sky and sea which seem surer to make for peaceful wealth than flying and diving. So we skirted the Santa Barbara channel the other day and saw the outcroppings of kelp floating idly on the dawdling azure, we remembered that results are accruing from the co-operative effort between the U. S. Department of Agriculture and the Los Angeles Chamber of Commerce to determine how much patriotic American potash can be harvested from our kelp beds and how it should be undertaken. This seemed to be necessary study to settle kelp practice and to allay the fears of the fishermen who were disposed to claim that if we dragged all the kelp from the ocean for potash we should have no fish left for phosphate, and so in paying Peter we would be robbing Paul. And so the government put up \$175,000 for expenses, and the Los Angeles Chamber of Commerce helped to spend it wisely. We judge this has been done because we now have a formula for kelp-farming which will gather the crop and save the roots, and probably save the fish also, for they will be undisturbed in the basement of the kelp forest. Briefly, the way it should be done is to cut kelp with reciprocating knives or shears at depths not greater

than six feet; to permit harvesting at any given time in certain sections only, giving a bed a rest of six months for re-growth; to impose a tax of one cent per ton of kelp, using the fund, estimated at from \$12,000 to \$15,000 a year, for strict policing and supervision. The report claims that the present method of harvesting is to attach a wire to two power boats and pull it through the bed. This uproots much of the kelp, and new ocean currents prevent the kelp from acquiring new "hold fasts" on the floor of the ocean. Also much of the kelp is not picked up and is a total loss. It looks as though the coming legislature might have something to say about the kelp-farming of the future.

NITRATE FROM THE SKY.

ALTHOUGH apprehension of the decadence of the Chilean nitrate supply is being allayed by reports of discovery of new abundance of it in that country, the government is pursuing its quest of captivity of atmospheric nitrogen. It seems that inasmuch as availability of immense water power is the first essential in a plant for extracting nitrate from the atmosphere, for which it is planned to expend \$11,000,000 by the government, the construction of such a plant in California is intimated by Hoyt S. Gale of the United States geological survey. California has a chance for this establishment because of the vast amount of water she has, high up in the mountains, which will insist upon its natural right to run down hill, and is willing to turn wheels on the way and generate all the electricity that can be used in shooting the air. It is by no means certain that California will secure this establishment, for there are other mountain States which have high-up water. It is well enough to speculate on the chances of such endowment. Besides the direct advantage of having abundant short-haul nitrate for agricultural uses, there is possibly an indirect result which might be made of value. Theoretically, taking nitrogen from the air makes the relative percentage of oxygen greater. Therefore, there should be within certain distance of the extracting plant an atmosphere of exceptional stimulating effect on those who breathe it. It would be unnecessary for resort managers to advertise ozone as an alleged product of forest vegetation, thunder storms, etc. They could get the by-product of the nitrogen plant piped directly to their establishments, for we hold it to be reasonable that super-oxygenated air can be had by taking nitrogen out as well as by pumping oxygen in. The only drawback which occurs to us at the moment is the prospect of higher meal-rates, because of the fierce appetites which oxygenated guests would acquire.

TO STEAL THE MAKIN'S.

ALL our readers who are contemplating rural credit should be reminded that the government is complaining that financial grafters are trying to roll up for themselves profits from the rural credit plans recently enacted by Congress to smooth the pathway of farmers to millionaire-ship. It is the clear intention of the law that farmers desiring to secure the benefit of the new law should create their own machinery of organization. This is for the double purpose of restricting operations to real farmer borrowers, and to rule out all cost of promotion so that farmers should pay the lowest possible interest rates. And yet, it is announced from Washington that sharks already infest rural credit waters, and "one of the greatest financial frauds the United States has known" is threatened. Some time ago the Loan Board announced a ruling that no proposed joint stock land will be chartered if it has spent money for promotion. In the face of this ruling, it is said, promoters have continued to sell stock in proposed land banks and to take parts of the proceeds for their own services. One of these concerns failed before it could even have applied for a charter, but it has sold stock to the amount of several hundred thousand dollars, which farmers had paid for so-called "stock" in the organization. While we have urged our readers to begin organization of "loan associations," in which borrowers only are entitled to membership, we have also distinctly stated that such associations issue no "stock" and can sell nothing of the kind. Later "land banks" will be organized in which borrowers

will be required to stock up to 5 per cent of their loans, but that has nothing to do with the affairs which are now being fraudulently promoted. The Loan Board has also telegraphed from Washington this warning, which ought to be clear enough:

Farmers who borrow through the national farm loan association are not required to pay any advance commissions. So all of these enterprises requiring payments from farmers are declared by the board to be fraudulent, and the attention of the department of justice has been called to the matter and an attempt will be made to bring the offenders to justice.

HIGHWAY ROBBERS.

ANOTHER kind of farm robbery is that practiced by auto marauders along the highways. There has been some effort made to check the robberies in the citric districts by the auto-tourists, and surely this kind of depredation should be ended. But the invasion of orange groves by winter residents seems to be acting under the influence of picturesque temptation which would defend the robbers in their own eyes, probably, as an extenuating circumstance. Still it should be punished as a greivous trespass upon rights and

property, which must be well paid for. But something worse than a fine is needed to requite low-down thievery, such as is reported by an auto driver who says he was hired to carry a party for ten days through California valleys. During the entire ten-day absence from San Francisco anything that could be stolen from a farmer's field was taken without compunction. To stop the machine in the road, pick a basket of peaches, dig a half sack of potatoes or acquire quantities of other produce was apparently considered legitimate business. They carried a gun which they employed, not for the purpose of shooting game, but to shoot turkeys, chickens, ducks and geese. They did everything but invade meadows and dairies and milk the cows. About all they actually took with them was a few cans of condensed milk. Everything else they stole from the farms along the highways. Of course farmers must defend themselves against such depredators. If there are not laws enough already, there will be a legislature in session this winter. Owing to the particular escape facilities which such thieves possess it may be necessary to make their work more dangerous than common stealing.

willing to pursue your plan of cultivation and buy seeds of both winter and summer growing legumes, as your experience showed you which came most abundantly under your conditions and at the times needed to make an all-the-year green cover, you would come nearer to realizing your desires both for the land and the pigs. We do not say that it would be good for the trees.

Home-Made Squirrel Poison.

To the Editor: What is the best home-made squirrel poison?—R. A., Sanger.

This is answered in "Second Thousand Answered Questions in California Agriculture," as follows:

The best poison to use is strychnine, the barley being coated with it in accordance with the "Government formula," as follows: Whole barley (re-cleaned), 18 lbs.; strychnine sulphate, 1 oz.; soda (bicarbonate), 1 oz.; saccharine, 1 oz.; thin starch paste, 1 pt.; corn syrup (Karo or equal), 2 oz. The best results are obtained by scattering the poisoned grain on the ground early in the morning, back of the hole, not upon excavated dirt that the squirrel has thrown out. It should not be spread before a rain or when the ground is wet, as the poison will be washed off and no results obtained. It should be widely scattered so that the squirrel will be compelled to pick it up a grain at a time and place it in the cheek pouch.

Cover Crop for New Clearing.

To the Editor: What cover crop for November or December planting would be adaptable and advantageous to land cleared last spring of live oak, white oak, and manzanita, in the chalk rock formation of Paso Robles, about to be planted to pears and almonds, to be plowed in in the spring; and should you advise a mixed crop, kindly indicate the proportion, and what would be a fair seeding per acre, and whether it would not be too late to plant mellilotus at that time?—D. W. L., San Francisco.

Mellilotus wants a seed bed and irrigation, which you do not seem to have. November would be a little late any way. Try bur clover, 20 pounds per acre, or horsebeans as recommended in another article. The bur clover will not need harrowing, but ought to have a fair show against the weeds and grass that will be pretty thick by November. Vetch would probably be good.

Roots for Almonds.

To the Editor: Which would you advise for almond root, bitter almond or myrobalan? The soil is inclined to be adobe.—A. McH., Chico.

Either the sweet or bitter almond seedlings are good and are chiefly used, most growers declaring that they can see no advantage in one over the other. The peach is also good for the almond. The myrobalan has been used to some extent and has been supported by some growers, but we understand that some large propagators who at one time made a point of adapting the almond to a wet soil by using myrobalan have changed their minds. We do not consider the use of the myrobalan sufficiently demonstrated to be dependable.

Strawberries and Raspberries.

To the Editor: Can ever-bearing strawberries and raspberries be set out soon after the first rain? There is very little frost in my garden. Will the young raspberry plants that come up around this summer canes set out last spring be good roots to set out, or would the whole root be better?—S. A., Carpinteria.

Surely the best time to set out such plants under your conditions is as soon as the soil is deeply wet by the rains. The raspberry shoots you speak of will do to start with if you get them with a root-start and handle them carefully. If you are buying plants you ought to get all the wood which grew last summer—shortened back, however.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., October 24, 1916.

STATIONS	Past Week	Rainfall Data		Temperature Data	
		Sensonal To Date	Normal To Date	Max'm	Min'm
Eureka	00	1.90	3.32	62	42
Red Bluff	00	3.35	2.02	82	44
Sacramento	00	1.00	1.18	78	44
San Francisco ...	00	2.04	1.24	72	48
San Jose	00	1.59	1.05	74	36
Fresno	00	1.58	.82	80	48
Independence	00	1.11	.72	76	32
San Luis Obispo...	00	3.72	1.45	78	44
Los Angeles	00	3.34	.63	72	50
San Diego .....	.18	1.12	.43	66	50

By the Editor QUERIES AND REPLIES

Inquirers Must Give Full Name and Address.

Beet Pulp Balances Alfalfa.

To the Editor: What is the proper way to balance a ration for a family Jersey cow, using alfalfa hay and beet pulp? What is the food analysis of the latter? Would beet pulp be a good thing to feed chickens if short of greens?—C. R. M., Sebastopol.

Prof. F. W. Woll of University Farm, Davis, answers this on the basis of dried beet pulp as follows: This feed contains, on the average, about 4 per cent digestible protein and 65 per cent digestible carbohydrates and fat, and is, therefore, a low-protein or starchy feed and supplements alfalfa hay very well. Twenty-five pounds of alfalfa hay and five pounds of beet pulp will make a balanced ration and supplies sufficient feed for a good dairy cow. Somewhat better results will, however, be obtained by feeding a mixture of two or three concentrates rather than beet pulp or any other feed alone, say a mixture of beet pulp, cocoanut meal and barley, in the proportion of 3 parts of beet pulp to 1 part of the two other feeds. At present market prices for feeding stuffs, beet pulp and cocoanut meal are much cheaper than either barley or mill feeds, and the more pulp included in the mixture, the cheaper the ration will be. Beet pulp is not especially palatable to stock when fed alone, although cattle and sheep will eat it readily when once accustomed to it. It may be fed either dry or soaked in water, preferably the former.

Beet pulp is not a good chicken feed, mainly on account of its relatively high content of fiber, and will not take the place of greens in feeding poultry when fed wet.

Lime for Orchard.

To the Editor: When is the proper time to apply lime to an orchard, and what kind is most economical? Can hydrated lime be applied to a clover lawn without injury?—C. R. M., Sebastopol.

Ground limestone is least expensive, but does not act so promptly as hydrated lime which is harmless. Apply whichever form you prefer, as soon as you determine that the soil is at all acid and before plowing if convenient. Apply so winter rains won't wash it away. If there is danger of leaching, the quicker acting form will probably be best. If it is for lightening of heavy soil other than correction of acidity, the hydrated lime gain is considered best.

Prune Tree Cavities.

To the Editor: In my 40-acre orchard of 20-year prune trees, a larger proportion have a cavity in the main fork of the tree. It is quite large and deep in some cases and collects water, leaves, etc. I have heard of filling the cavity with tar or asphaltum or cement.—J. H. L.

Whatever you put into the cavities, shave out every vestige of decay, or it is likely to proceed after the cavity is filled up. The principal trouble

with cement fillings is that with heavy crops or swaying trees in wind, cracks may be opened which will admit water and spores of decay. This may be prevented by inserting screw eyes on the insides of big limbs, one to four feet above the filling, and drawing them tight with heavy wires so there will be no giving while cement is being tamped in or afterward. It may be better to mix as much as convenient of fine dry redwood sawdust with hot asphaltum; and after cleaning and disinfecting the holes, pack it in with a hammer or heavy tamp. If the trees should spread, it can be further packed at any time.

Ripe Seed and Green Feed.

To the Editor: Please give me a proper idea of sowing a twelve-acre orchard with two objects in view: first, to build up the soil; second, to do it economically and at same time make plenty of feed for sucking pigs and small shoats. I mean to plow three furrows on each side of every row and run a harrow over it once a week. Let the middles all grow till seed is ripe enough to grow for next year's crop. The soil is inclined to be light clay, hill land. Old hogs would be fenced off from orchard and sucklings have a "creep" to get to the feed. How many kinds of plants should I sow and how much per acre? Is it proper to let pigs run on the orchard all summer which would get a summer's growth on both pigs and crop and have seed ripen before it is turned under?—Subscriber, Sebastopol.

You have planned a very complicated machine which will require very favorable conditions and adjustment of parts for its working and always be in danger of slipping a cog somewhere. The design seems to be to get plants which will make green feed winter and summer without irrigation and ripen enough seed in the fall to start again on the same contract, year after year. We are not sure that we have any such annual plants. The plant which will do most toward making seed while its growing top is being eaten off, is bur clover because that shoots laterals and makes seed-balls soon after starting, and keeps on growing beyond them—therefore it can be grazed above and make considerable seed blow—if not grazed too close. But bur clover will make good winter growth and go dry early in the summer and give you bare land until the seed is started by fall rains. Thus you fail to get the summer greens which is a part of your scheme—though you will get greens from it during fall, winter and spring and keep the land seeded with it. Theoretically, if you could get your land seeded with bur clover and Dakotah vetch, you would get from it the summer verdure and keep the land seeded with it also—but we do not know where you can get the seed, unless you find it growing for your own gathering.

If moisture enough remains in the land you can get summer greens with cowpeas, but they will have to be re-seeded every spring in most places, and that is what you wish to escape. If you were

University Rejuvenates Old Orange Trees

[Written for Pacific Rural Press.]

Twenty acres of commercial orange orchard planted near Riverside on level land in 1891, had been declining steadily of late years. According to R. McBride of the University Citrus Experiment Station, it produced an average of 28 fruits per tree in 1914-15. In 1915-16, it produced a little better than 3 1/2 boxes per tree, as vouched for by Gordon Wallace and C. M. Clark, also of the Experiment Station, which took charge of the orchard in April, 1915. It now has a crop equal to last year, including more inside fruit; though Riverside county in general has 80 per cent of a crop and many orchards in this district have not over 25 per cent. The leaves are of better color and have less mottling. The soil is mostly underlaid by hardpan at 18 to 48 inches and by river sand at 9 feet.

The trees had not been pruned since the freeze, and were barely alive when the University undertook to rejuvenate them. In 1914 they were badly infested with scale, but were fumigated that fall. The University gave it three degrees of pruning in successive sections of four rows each. About 20 trees were not pruned at all. Last September, and the year before, those not pruned heavily averaged more fruit than those pruned moderately or lightly; but fruit on the unpruned trees was scratched by the dead twigs.

The orchard was laid out in 42 plots for various treatments. Each plot is separated from the next by a row of whitewashed trees which are being used for extra pruning experiments. Each plot has different fertilizers except every fourth one which is a "check" plot untreated for comparison. Half of each plot except a few has a winter cover crop.

On one plot, alfalfa has been growing since the start, one-third having no fertilizer, the next having

blood and nitrate of soda, and the next third of this plot has superphosphate, sulphate of potash, and gypsum. The alfalfa is mowed every month and laid in a constantly enlarging circle around each tree, being left as a mulch. Results from the alfalfa are not showing up as yet. But a plot where 150 pounds alfalfa hay was plowed under with 20 pounds rock phosphate takes double the water after the first irrigation; and in cultivating, it has no bottom. Two plots have both summer and winter covercrops of buckwheat, cowpeas, and melilotus.

The most noticeable change has come on the plot basined, mulched with straw, and fertilized with blood, superphosphate, and sulphate of potash. Hardpan is nearest the surface here. When the soil tube was first used here, it could scarcely be pulled out, but now the soil is much more mellow. One plot has manure in trenches two feet deep around the drip of the tree. One line of plots is fertilized with 10 cubic feet manure per tree and with rock phosphate and plowed 10 inches deep every spring. Other fertilizers and lime are being tried on various plots.

Three lines of underground pipe cross the orchard and each plot drains independent of all the rest to avoid mixing fertilizers, and other complications.

Soil samples for moisture content are taken before and after each irrigation at 1, 2 and 3 foot depths, and some at 4 feet. The usual irrigation run is 48 hours every 4 or 5 weeks, but some plots are watered for 24 hours twice as often. Two mulch plots are irrigated by furrows, four by basins.

Almost every cultural problem of the owner of declining orange trees will have at least a tentative answer in a year or two.

Coast County Orchard Cover Crops.

[Discussion Begun in Last Week's Pacific Rural Press by John J. Fox.]

Horse Beans.—I have grown horse beans in Napa Co. six years and they do well—remarkably well in good ground and the nodules on the roots are as large as those seen on melilotus roots. Moreover, the horsebean has a large, strong taproot that will penetrate the plowsole and help drain the soil. It is frost-resistant and does not do so well in warm weather and almost always gets a black bean aphid on the terminals. The principal objection to the horse bean at present is the difficulty of planting the seed we have seen, which is large, flat, and very irregular in size. It is known as the Broad Windsor and is a poor sample of this improved variety which is largely used in Europe as a vegetable.

The horse bean proper, which is used so extensively for horses and sheep in Europe, is much smaller, less flat and sufficiently regular in size to pass through a corn planter. I have been trying for the past two years to get shipment of these beans from England, but shall probably not get them till the war is over.

The largest and best—the winter bean—I have known to attain a

height of 8 feet and produce 56 bushels of seed to the acre weighing 65 pounds to the bushel. The meat contains very little saccharine or fat-forming matter, but almost as much protein (gluten) as rye. This applies to all the horse beans.

Culture.—I should plant them now, and the amount of seed to the acre would vary according to variety of bean and the quality of the ground. As a cover crop, I should plant 200 lbs. to the acre and not less than 100 lbs. to the acre in the orchard even on strong land. The rows in tree row can be 30 inches apart and need not be cultivated in our county. They do not do so well in hot weather. If, however, they are grown as a field crop for seed they should be cultivated and cut at harvest time, not pulled. I always plowed my beans in here—dropped them every 3rd furrow. This awkward and time-taking method of planting cannot, however, be recommended. In England I planted the field beans with an ordinary drill. Perhaps a lima bean planter would answer to plant the variety we have—the Windsor. As soon as I can, get a shipment of Tick Beans, I will

send a sample to your office.

We should also try the Mazagan Bean and Tick Bean—the latter a comparatively small seed, but a very heavy producer. The extra number of seeds for the space they occupy would make them very economical to plant. If the crop is matured, the straw is valuable as a fertilizer and a fine absorbent in the stable, but of little value for anything else. The horse bean is one of our future cover crops.

GRAPE GROWERS' OBSERVATIONS.

Loss of fertilizer by leaching where the subsoil is porous is indicated by a vineyard underlaid by hardpan owned by F. H. Booth of Fresno county. He has fertilized high places and watched effects on vines to which the fertilizer had run along the hardpan. The limit was very noticeable.

A Thompson vine belonging to B. H. Fisher of Fresno county was so badly frosted last spring that it died back to the stump. One bud started from an old spur close to the ground and the trunk was cut off 3 inches above ground. Four small canes grew from the end of the spur and two from the base bud. One of the latter became over 1/2 inch in diameter. The other became an inch in diameter one way and 1 1/2 inches the other.

Malagas color better and bring about \$100 a car better price where grown on light soils, as observed by A. B. Cate of Fresno county.

UP-TO-DATE FRUIT INFORMATION.

[Written for Pacific Rural Press.]

The most compact and up-to-date information on citrus and apple culture in California is that contained in the report of the Cal. Fruit Growers' Convention held last February at San Bernardino. The report is just off the press.

The most up-to-date information on deciduous fruit and grape marketing, rural credits, how to use the College of Agriculture, and improvement of nursery stock will be contained in the papers to be written and read by highest authorities at the California Fruit Growers' Convention to be held at Napa Nov. 13-17 inclusive as per programs elsewhere in this issue. The first two days are for the county horticultural commissioners, but the public is invited.

PROGRAM STATE FRUIT GROWERS' CONVENTION.

Nov. 15, 10 a. m.—Report of Committee on Legislation. The Dried Pear Industry, Fred G. Stokes, Kelseyville; and Frank T. Swett, Martinez.

Nov. 15, 2 p. m.—Weaknesses in Our Fresh Fruit Standardization Law, F. B. McKevitt, California Fruit Distributors. Practical Application of the Standardization Law with Grapes, Fred P. Roullard, Fresno. Practical Application of the Law with Deciduous Fruits, H. E. Butler, Penryn. The Future of the Wine Grape Industry in California, E. M. Sheehan, Sec'y State Viticultural Commission. The Future of the Raisin Industry, Jas. Madison, Cal. Associated Raisin Co.

Nov. 16, 10 a. m.—The Prune and Apricot Growers' Information Bu-

reau, J. H. Bone, San Jose; Harry Dunlap, Napa; J. C. Shinn, Niles. Standardization of the Apple Under the Act of 1915, F. S. Jerome, Watsonville Apple Distributors.

Nov. 16, 2 p. m.—Scientific Distribution of Fruit, Col. Harris Weinstein. The New Peach Growers' Organization and What It Means to the Peach Grower, J. C. Rorden, California Peach Growers, Inc.

Nov. 16, 7:30 p. m.—The California Farmer and the College of Agriculture, Dean T. F. Hunt, College of Agriculture, Berkeley.

Nov. 17, 10 a. m.—Disposition of Fruit Below the Established Standard, H. C. Rowley, San Francisco. Improvement of Nursery Stock, A. L. Wisker, Grass Valley; Geo. C. Roeding, Fresno; Leonard Coates, Morgan Hill.

Nov. 17, 2 p. m.—Marketing through the Parcel Post, S. Glenn Andrus, Sacramento. Rural Credits, Dr. Elwood Mead, University of California.

SANTA BARBARA APPLES.

[Written for Pacific Rural Press by Chas. F. Bauman.]

A private label, careful handling, and a good location on the sandy loam mesa overlooking Lompoc Valley, Santa Barbara county, brings Chas. Beutebaugh 50 cents per box more for his apples than his valley neighbors get, though all are packed and shipped by the same people.

"The Famous Mesa Apples" are grown on two mesa orchards where drainage is perfect and wind blows less. One orchard is 20 years old, the other, eight years. They consist mostly of Bellflowers, White Winter Pearmain, and Jonathans. The young orchard has averaged from the beginning over \$35 per acre according to Mr. Beutebaugh. The old orchard averages 10 boxes a tree.

He is particularly proud of his Winter Bananas, grafts for which were put on Jonathan stubs. The trees are very widespreading, admitting lots of sun, and adding high color to the sweet juicy apples. The fruits are almost twice the size of Jonathans, more solid, and yielded in greater quantity.

Individual records of the trees are kept.

WINTER BARTLETT PEARS.

To the Editor: Will Winter Bartlett pears do well on rather heavy soil wet until late in spring, located near Stockton? Would it be advisable to set 7 acres to have a late pear on the market when the summer Bartletts are gone? Are they raised to any extent? How do they keep? I am told that only the summer Bartlett will do well in the San Joaquin Valley.—H. B., Stockton.

[The only Winter Bartletts we know are on well-drained land not in the San Joaquin Valley. Summer Bartletts are very often planted in draws too wet for most other fruits and Winter Bartletts on the same root should do as well. The standing of the variety is not yet established. We know one man who added 40 acres to his original 20 acres after the latter came into bearing. The fruit is considerably less attractive and coarser than the summer variety. We have eaten some in February which had been stored simply in the farm cellar. There is an attractive market for the few that are now produced. Pears thrived in the San Joaquin Valley years ago until the blight cleaned them out.]

Modern Walnut Packing Plant.

[Written for Pacific Rural Press.]

One of the best-equipped walnut packing houses in California (except for lack of a cracking machine) is that of the Fullerton-Placentia Walnut Ass'n, of which Arthur Staley is Secretary. It costs 3½ per cent of the gross sales last year for expenses of the local house, including interest on some money borrowed for the investment.

Nuts are received from the growers, in sacks which are weighed and stacked inside the house on low tables so they can be picked up with lemon trucks. Each man's crop is kept separate, and after they are dumped to begin their journey through bleachers, graders, etc., to the car, an interval of about two minutes is given so that all the No. 2's, culls, and blanks picked out at the suction from that lot can be weighed and recorded separately.

They are dumped onto a large-mesh wire screen which is agitated to carry the nuts forward under a suction hopper which picks out all trash which has not fallen through the screen, and also picks out the shrunken-meated nuts, so the cracking test becomes high. These lightweight nuts are screened off and sacked. The air is drawn on through a chute, by a revolving fan which forces it over a furnace to be used later to dry the dipped nuts. A damper regulates suction force according to the general character of the nuts.

Bleaching.—Those which pass under the suction hopper run directly into the revolving churn-like "bleaching drum," passing through at the rate of three tons per hour, each nut remaining in the dip 1½ to 3 minutes, according to H. A. Thatcher, House Manager. Longer soaking and less capacity are required with badly weather-stained nuts. One man attends the bleacher and the furnace which heats air for drying the nuts.

The bleaching mixture is a patented formula owned by the Cal. Walnut Growers Ass'n, for the benefit of all its locals. It is made of chloride of lime and monohydrate crystals of soda mixed with a solution of sulphuric acid. It is made up ahead of time in two cement tanks of 600 gallons each, being stirred by a machine-run propeller. The salt bleach has been discarded because salt-bleached nuts tend to draw moisture from the air. The sulphur dip does not work well unless the nuts are smooth.

The nuts coming out of the dip are shaken over a screen to take out halfshells, etc., and remove excess dip water. A belt and bucket ele-

vator dumps them into one or the other of two graders, high up. These are horizontal revolving cylinders of wire mesh of 1 1-64-inch diameter. Nuts which fall through are dried and weighed separately as No. 2's. Each grader has a capacity of 1½ tons per hour, and an extra grader is set up when "budded" nuts are to be handled.

Drying.—From the grader, the No. 1's are distributed into four driers beside the one used for No. 2's. These driers are 20-inch metal cylinders about 20 feet long, sloping downward from the level of the grader. A wire mesh lines the inside of the pipes, being held 1½ inches clear of the metal by wooden strips. Protruding about three feet into each of the driers is a 6- or 8-inch pipe connected to a manifold through which the rotating fan mentioned above forces air which has been heated so it keeps the temperature in the driers at 90 to 100 degrees F. The driers are rotated by chains and sprockets so the nuts get a good rolling downhill in the hot air. They are usually dry when they tumble out onto a wide belt which carries them past several people who pick out the remaining culls, spotted and cracked nuts. An elevator distributes them to slatted hopper bins in the peak of the building. This allows ventilation and further drying if necessary.

In the last of September, the Fullerton-Placentia Walnut Growers' Ass'n was shipping out two or three cars daily. These are packed from the slatted bins into sacks of 4 to 100 pounds, the sacks resting on scales for exact weights. The packer is near the door through which nuts are loaded into cars for the East, 240 100-pound sacks per standard car.

Power to operate all the machinery is supplied by two electric motors of 7½ h.p. each.

Inspection.—Since the Cal. Walnut Growers' Ass'n markets the nuts under a quality guarantee, they inspect every carload before it is shipped out. Their inspector for Orange county is C. S. Head, who often visits each packing house in the county twice a day; and always, once per day.

A double handful of nuts is taken from every tenth sack. These are shaken together to mix them and 200 picked out at random and cracked by the inspector. Count is kept of light and amber colored meats as well as bad nuts. The percentage of bad ones is considered representative of the car. A four-pound sample of the whole nuts remaining is sent to the Central Association with the report for that carload.

The sample cracked in our presence showed 145 light meats, 45 ambers and 10 bad, making a "cracking-test" of 95 per cent good. Report is also made on the bleaching, size, and appearance of the nuts for information of the Association in selling that car. The minimum requirement this year is 87 per cent good. Last year it was 85 per cent. All shipped from the Fullerton-Placentia Walnut Ass'n this season have tested 90 per cent or above.

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How Ornamental Exotics Reached Here.

(Continued from first page.)

date various other fruits were planted in the central part of the State by Dr. Marsh, John Wolfskill, George C. Yount and others. Probably most of these planters took their start from the gardens at the missions, though Mr. Wolfskill brought apricots from Mexico. In the late forties the "black pepper tree" was planted both in Los Angeles and San Jose—the early reporter mistaking our now popular Chilean pepper for the pepper of commerce—as many new comers have done since his time. Early in the fifties more plants were brought from Mexico and Central America and at that time the sapota, aguacate and mango were seen growing in Los Angeles. In 1851 R. W. Bourse of Stockton brought an oleander from Mexico, and a visitor in 1857 says of it: "It is the largest and finest oleander we have ever seen. It has grown to enormous size and sheds its fragrance all over the garden." No wonder it impressed the visitor who had probably never seen an oleander before

except as an Eastern house plant. And this reference must cover all the sensations which giant open air callas, geraniums, lemon verbenas, fuchsias, etc., gave the pioneers and continue to produce on the minds of new-comers to the present day.

Exotics Which Came with a Rush.

—As already intimated, exotics came in such quantities with the American pioneers that just what they were and just when each of them came is not now determinable. Probably all of the exotics which were being carried about the world seventy years ago reached California at about the same date, because as already shown, plant importers brought whole green house collections and had them suitably housed and were actively trading in them remarkably soon. The house plant collections at the east, whence most of the stock came, had undergone great enlargement during the '40s and a new American interest had arisen in growing under glass everything of tropical and semi-tropical requirements, which botanical explorers, travellers and commercial prophets made famous. California received immediately all that European and East American collectors had secured during several previous decades of ransacking the five continents and all the islands that lay between and around them. We have therefore to consider exotics en masse and note what California did with her acquisitions.

It will, of course, be remembered that California received as "house plants" many broad shrubs and tall trees, acacias, palms, araucarias, ficuses, bamboos, fruits tender at the north, etc., etc., which went almost at once to the open air because they needed no protection and so it was only for plants strictly tropical or for blooms of high quality that glass was provided. And yet it is evident that before 1856 the San Francisco florists had notable establishments. Official reports of the State Agricultural Society for 1856 to 1858 present these records:

H. A. Sontag & Co. of the Mission district of San Francisco are celebrated for the excellence of their roses and other choice shrubbery. It is doubtful whether a more extensive or finer collection than theirs can be found this side of Europe. Besides large open garden they have three glass houses, 120 to 165 ft. in length. They are constantly importing all the rarest and choicest varieties of plants to be found in other parts of the world.

James O'Donnell had two houses filled with choice plants and he was a pushing sort of a man for he took

premiums at State Fairs at San Jose, Marysville and Sacramento for the best and largest collections of potted plants.

W. C. Walker is also credited with having one of the largest and rarest collections of fine plants: in fact, it is doubted whether it can be excelled in any of the Atlantic States. No expense is spared in introducing the newest and rarest kinds. It augurs well for the cultivated taste of the public which appreciates and sustains an establishment that requires so much time, labor and expense to support it. Mr. Walker also had a large greenhouse full of exotics and ample open-air cultures.

Besides these three establishments, which are cited because the largest and because of their function in the distribution of exotics, there were others of the same kind. There were also popular recreation gardens and private gardens and plant houses of notable conservatories like that of John Center, which was filled with choice plants and had a fine fountain in the center—and all this within five years from the gold discovery, for they were all reclaimed from the sand dunes, built and planted some time before the record was made.

Although it is natural that there should be greatest activity in exotic plants in San Francisco where there were most people and where gold and gallantry were freest in expression, there were also exotics of the ornamental class to be found in abundance and profusion in Oakland, San Jose, Sacramento, Stockton, Marysville, and at other points, as quickly, though in less amount, than in the metropolis.

The Most Popular Flowering Exotics.—The most popular exotic flowers of California's first decade were roses, camellias and dahlias. This claim is based on the fact that special premiums were offered for displays of these flowers at the fairs of the early '50s while others were not particularized. Just what this preference was based upon it is not easy to determine. Were they the most popular exotics everywhere at that date or was it because their bloom seasons in the open air in California were different and practically covered the year. It is an interesting question to remember and to answer as one may feel confidence.

Little need be said of the supremacy of the rose: it exists to the present day. It is interesting, however, to note how soon the early California propagators worked largely with the best roses of their time. A. P. Smith of Sacramento (who was really the first man to start a California nursery; even before the gold-rush) had in 1857, 12,000 rose plants of 200 varieties; L. Prevost of San Jose had in 1858, 20,000 rose plants of 120 varieties; W. S. Osborne of Los Angeles had 20,000 plants of 118 varieties, and so on with many other growers.

Of the popularity of the camellia with the pioneers one can hardly say more than that it was as highly prized then as it is now neglected. It was splendidly grown in the open air in San Francisco, but the pioneer leader with the camellia was A. P. Smith of Sacramento of whom an official report in 1858 says: "No man has been at greater expense with

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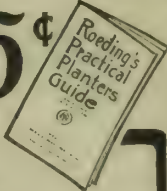
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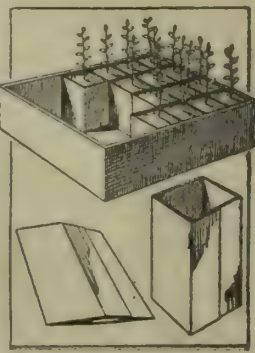
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camellias nor succeeded so well." He was at that time credited with 2000 plants of 200 varieties. When Mr. Smith's establishment was dismantled, early in the '60s probably, his camellias, some of which had reached a height of ten or twelve feet, were transplanted to San Francisco by E. L. Reimer and produced abundant blooms some of which were sold at \$100 each, for their popularity was then still strong. It is probable that some of the large camellias in the Sacramento gardens, from which blooms are now sold at a nickel each for the buttonholes of California legislators, are from the old collection at Smith's Gardens so famous in the '50s among visitors to the State capital.

The early popularity of the dahlia when the bloom was chiefly the formal rosette of our grandmothers is not easy to understand, and yet W. C. Walker had in 1856 a collection of 100 varieties which, "cultivated in the shaded sandy loam of San Francisco, far excelled any noticed in this country or elsewhere"—as the visiting committee said of them. The tremendous popularity of the dahlia at the present day is therefore but a recrudescence of the excitement of sixty years ago, but our grandmothers could surely not have imagined the size, gorgeous colorings and abandon in form and attitude recently assumed by the flower whose self-restrained primness commanded their admiration.

How the Pioneers Used Exotics.—As the pioneers sought exotics grandly and lavishly, so they used them picturesquely and gorgeously. A few brief extracts from the records of 1856 to 1858, indicate what was to be seen in those days. A charming place must have been Hock Farm, the home of John A. Sutter, who was a pioneer of pioneers. It was situated on the river bank about six miles below Marysville, on the river side of the residence, of which it is written:

The well arranged ornamental grounds are laid out in the old English style and present a scene of rare beauty and interest. There are 120 distinct species and varieties of evergreens gathered from the equator to the highest latitudes in which vegetation thrives. There are fine Oriental cypresses together with rare and beautiful shrubs all being well arranged and presenting beautiful effects.

The account given in 1857 of the home of J. W. Osborne in the Napa Valley is rather more dazzling. It is as follows:

The house is new, large, convenient, unique, plain, rich, droll, labyrinthian and unfinished. It is of the Elizabethan style, applied to a Swiss suburban villa, surrounded by East Indian verandahs and topped out with a touch of the Burmese pagoda covered with a China-built roof. It is all very pretty, surrounded by hedges, clumps of trees, evergreens and shrubbery. It is approached from the road by three wide avenues, half a mile long, bordered by ornamental shade trees.

But even more striking, in landscaping if not in architecture, is the layout of Dr. T. J. White in 1858, the site of which is now in the center of the business district of Los Angeles:

The dwelling is situated about three hundred yards from the street and approached by a drive bordered by noble English walnuts and luxurious pomegranates to within a hundred feet of the house where it branches and encloses an oval con-

taining a large fountain, ornamented with shells, coral, evergreens and flowers. On either side of the fountain, in a triangular form, there is another fountain embowered as is the central one. The whole plat between the house and the street, about 300 yards square, is laid out with serpentine walks and set with ornamental trees and shrubbery presenting a view from the elevated porch of the dwelling which is both picturesque and beautiful.

There are many more instances of the arrangements which the pioneers made for using their wealth of exotic plants, but these will serve to indicate their devotion and interest. Another phase of the attitude of the pioneers toward beauty in its various manifestations is shown by the following paragraph from the report of an official visit-

ing committee in 1857:

One and a half miles above Marysville on the Yuba river is the farm of C. Covillaud. The proprietor being absent, his wife volunteered to show us the place and upon our objecting that the sun was too hot for her comfort she broke off a branch of a tree, to supply the absence of a parasol, and continued to lead us on, from point to point, explaining the designs and proposed improvements and many objects of interest, with a true womanhood which scorns all aristocracy not founded on the faithful prosecution of some laudable calling. The place contained 1200 ornamental trees. The approach to the residence was on either side skirted with double rows of ornamental trees intermingled and entwined with a great variety of standard and climbing roses producing an effect at once unique and beautiful. There was also a broad corri-

dor surrounded and shaded by a luxuriant growth of clematis, indigenous and exotic.

Thus the early-day records present to us the pioneer woman in her environment of exotic plants in the lofty calling of home-making in a new State. Probably no single material fact has given our women more courage and comfort in their homes, and more cheer amid difficulties to be overcome, than the gift of the world's best plants for California home adornment and the delight which they manifest in their new environment.

The Railroad Commission has denied the application of the railroads for a rehearing of the recent decision lowering freight rates on paddy rice.



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Enforcing Strawberry Standardization.

[Written for Pacific Rural Press.]

Of the 180,000 crates of strawberries shipped out of the State from the 2,000 acres of commercial plantings in Sacramento county between April 1 and May 26 last spring, 6,800 were condemned for Eastern shipment under the Standardization law, with great benefit in holding up prices. One grower, warned several times, was arrested, plead guilty, and had his fine suspended during good behavior.

Last spring was the beginning of enforcement of this law. It provides that berries for inter-state shipment shall be packed in uniform packages of dry quart and dry pint, and shall be reasonably uniform in size, quality, and maturity throughout each container, practically free from insects and fungous diseases, and all packages except subcontainers must be stamped with the name and address of grower and locality where grown.

The berry districts were divided into five, one for each inspector. All of the inspectors were under the direction of Deputy Horticultural Commissioner F. C. Brosius. Early in the season the picking was done by day work and this facilitated the inspection.

Hard green berries, distorted ones, and small ones were used in bottoms of containers of all sizes and shapes. The district attorney said 10 per cent variation in size was reasonable, but the growers said more; and 25 per cent was allowed as a starter, though not over 15 per cent was encouraged because that is the Canadian law, where many of our berries go. To make 12-ounce baskets, too many green berries would be put in. These would color, but not sweeten en route. Many growers were using each other's crates, which had to be stopped, or relabeled.

There were about 180 berry growers, each with his own packing shed on a patch of ½ to 20 acres. At height of season, growers with over four acres were forced to employ contract pickers; and if any of these were fired for doing poor work, the rest would quit. It was hard for a Japanese boss to adequately supervise 20 or 30 pickers and this made inspection more difficult.

Picking could not commence until dew was off, or the berries would get white whiskers and rot en route. Inspectors visited the pickers and packers in the fields from 7 a. m. to 3 p. m., giving instructions, inspection, and advice. As many as 7,000 crates would be loaded on cars in a day between 3 p. m. and 9 p. m. at which time loading had to cease for the day. Several crates from each wagon load would be inspected at loading shed to see that instructions had been followed.

It was hard to get the proper 12 oz. net weight in boxes at first, for the berries had to be packed tighter than before. Jessies, which are lighter and softer than the Dollar, had to be packed higher.

Lots of green berries were colored by the north wind before they were sweet enough, and the inspectors had to watch for these. Overripe berries would arrive on eastern or northern markets soft and black, so

they were condemned and shipped to local markets where they were used before spoiling.

A complication arrived May 7 in shape of a frost. Ripe berries picked that morning oozed moisture from the whole berry. They had to be assorted and were sold in San Francisco the next morning, still in good shape. Berries picked the evening of May 7, which had ripened during the day, held up in good shape for distant markets. Less damage was done where the ground was most moist.

Lots of folks in Sacramento told Mr. Brosius the inspection work was helping the local berry business greatly, due to improved habits of picking and packing enforced for distant shipment.

Nothing has been done as yet about minimum weight of containers; but it will be discussed this fall while considering improvements of the law.

PRUNE ORGANIZATION PROMOTERS.

Mr. Hugh S. Hersman, president of the First National Bank of Gilroy, a large owner of orchard property and a former Santa Clara county supervisor, has been charged with the promotion work of the Prune and Apricot Growers' Selling Agency. Mr. Hersman and associates are now planting more than 300 acres of prunes of Pacheco Creek, where they have recently purchased a tract of land.

Mr. Hersman will be backed by the following committee: Messrs. W. G. Alexander, G. M. Fontaine, Geo. Howes, O. A. Harlan, W. E. Blauer, V. J. La Motte, A. Kammerer, Nathan Lester, Chas. E. Warren, C. C. Spaulding, Geo. Glendenning, H. G. Coykendall, I. E. Pomerooy, Royal Cottle, V. A. Hancock, Ed Carey, E. B. Scott, F. E. Goodrich, P. J. Dunne, O. B. Wood, J. W. Chilton, J. P. Munger, J. H. Bone, R. P. Van Orden, S. E. Johnson,



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J. Denike, John A. Fair, I. A. Ball, Jos. T. Brooks, H. T. Curry, H. G. Keesling, J. S. Williams, Leroy Anderson, Lawrence Russell, C. H. Whitman, E. K. Clendenning, J. H. Harkness, B. W. Folk, Mark Grimes, J. H. Garner, J. B. Bullitt.

Heavy Yielding Hairy Peruvian Alfalfa.

[Written for Pacific Rural Press.]

Peruvian alfalfa under irrigation produces consistently better yields than other varieties. The Arizona Experiment Station announces that the hairy type of Peruvian alfalfa produces one and one-quarter to one and one-half tons more hay per acre

per season than the smooth Peruvian, which is probably a hybrid of the hairy type with common alfalfa and which itself yields better than the latter. This is principally due to the great abundance and greater size of leaves which grow upon it.

In 1899, the United States Government, through one of its representatives in Peru secured a small quantity of this seed which was distributed among some of the leading alfalfa growers in Arizona and California.

Characteristics. — Following is part of a report by D. C. Aepli, superintendent of the Arizona Experiment Station.

"In the variety test of alfalfa at Yuma, the hairy type of Peruvian again stands out in striking contrast to the remainder. The contrast here emphasizes the ability of this variety to grow at a low temperature and hence gives heavier crops than others in the late fall and early spring, and in most sections producing practically the year round, thereby giving the farmer the maximum yield from his land."

During the writer's investigation of the hairy type of Peruvian alfalfa he found that this variety thrives as well in an altitude of 4000 to 5000 feet as it does below or at sea level—having seen it planted and grown in Arizona, Imperial Valley, and Inyo county.

In the early stages of its growth, and also during the colder winter months, it has a very prominent coating of fine fuzz or hair, giving it a silvery appearance. This fine hair acts as a protection to the growing plant at the time when it is really needed, and gradually disappears as the warm weather comes on. It produces large leaves from the top to the very crown of the plant—which is not true of the other varieties of alfalfa—and as the leaves of the alfalfa contain the greatest and best part of the food value of the entire plant, this is the most important reason why the hairy type of Peruvian alfalfa shown be grown.

Conclusion.—One rancher has 160 acres planted exclusively to this variety. In asking him how he liked it compared to the smooth Peruvian and other alfalfas, the writer received this reply: "Well, I think enough of it to plant 80 acres which I am just getting into shape." Another rancher said, "I have planted the Chilean or common, also the smooth Peruvian, but I find that my hairy Peruvian is by far the best. It produces more hay, and my stock relish it."

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Layne & Bowler Corporation
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Certified Seed Potatoes.

Potato yield per acre in California has been steadily decreasing, due to disease and poor seed. Several hundred acres of seed potatoes now being grown under State inspection will be certified if they reach required standards.

[Written for Pacific Rural Press by W. V. Shear, Stockton.]

The yield of potatoes in the great potato-growing sections of the State has rapidly decreased in the past few years. This decrease in production has reached a point where the industry has become unprofitable to many, if not most, growers even at the high prices now prevailing for potatoes.

It would seem almost self-evident that good seed stock must be one important way in which the situation can be improved. The State legislature of 1914-15 passed a law known as the California Certified Seed Potato Act, which establishes a standard for good seed potatoes. The movement for the production of good seed potatoes in California is, therefore, well under way, and several hundred acres of such stock are being grown the present season. Of course these few acres will produce but a small fraction of what would be required should all potato growers in the State demand good seed. California has the honor of being the first of the States in the West to take up this matter of certified seed potatoes.

Certified Seed Standards.—Potato fields showing a mixture of more than two hundred and fifty hills per acre of any other variety or varieties, or showing more than five hundred weak hills, or more than fifty hills affected with blackleg, shall be disqualified for certification unless the mixed and weak or diseased hills are removed from the

field. The crop shall be disqualified if more than five per cent of the hills weigh less than 30 per cent of the average weight of all the hills.

The potatoes when graded shall be free from infestation of eelworms, larva of tuber moth, or infection of wart disease or powdery scab, and shall be practically free from net necrosis or infection of late blight. They shall be, in the judgment of the inspector, free from serious infection of scab or Rhizoctonia. They shall not contain more than eight per cent light infection of wilt diseases and not over two per cent deep infection of wilt. They shall also be free from any mixture of colors or distinct types, and shall be reasonably sound and free from cuts or bruises or second growth, and shall conform in shape to the varietal type. Not over five per cent of the tubers shall weigh less than one and three-fourths ounces and not over five per cent shall weigh more than twelve ounces.

In order to determine whether the potatoes attain this standard three inspections are necessary, one during the blooming period of the plants when freedom from certain diseases and purity of stock can best be determined. Another inspection is made when the plants are nearing maturity to determine freedom from infection of other diseases and uniformity of productiveness, throughout the field. A third inspection is made when the stock is

being graded to determine purity of stock, freedom from tuber infection of various diseases, and proper size. The cost of these inspections is borne by the grower.

Cost of Production Great.—It is evident that the cost of producing certified seed is much greater than the production of the ordinary miscellaneous assortment of so-called seed potatoes, which often represent nothing more than what may properly be called the culls from ordinary potato fields.

The next step in securing better yields of potatoes throughout the State is to educate the growers that it is a profitable investment for them to buy this good seed at a price which it is necessary for the producer to get in order to make good seed production a remunerative undertaking.

Care for Crops from Good Seed.—It must be borne in mind, however, that good seed poorly planted in poor soil and poorly cared for is likely to prove a poor investment. But for the grower who wants to give his potato field proportionately good care, the best of seed should be considered the only kind to plant, for without it his efforts will be in large measure wasted.

It should not be expected, however, that all "Certified" potatoes have an equal value for all localities and all purposes. Certified potatoes necessarily differ as to varieties, strains, and localities where grown—all of which may affect the results when planted in other localities and under other soil and climatic conditions. But potato growers should welcome the opportunity which certified seed affords to begin right by using what is known to be good seed stock.

MORE NAPA SCHOOLS.

To the Editor: It is because your article in Pacific Rural Press on the rural school campaign as conducted by the Napa County Farm Bureau has brought results that I take this occasion to tell you about it.

At a meeting of the Carneros Farm Center, W. L. Mitchell, director, had a copy of the Press, in which your article appeared, and read it to the people present. He then opened a campaign for a better school for Carneros with the result that on September 1 the people voted 51 to 6 for a \$5000 bond issue. The money thus raised is to be used to construct a modern, reinforced concrete, tile-roofed school house which will contain all modern equipment. This building will be erected in the near future. Please accept my congratulations and thanks for having written such a splendid article and having given it the valuable space which you did in your paper.

H. J. Baade.

Napa County Farm Adviser.

BROOM CORN SEED.

To the Editor: What is the value of broom corn seed for chickens as compared to gyp corn?—W. D. C., Laton.

[Practically the same value if allowed to mature. If picked immature for the straw, the seed is likely to be shriveled and of relatively less value because it will be mostly hulls which are mostly valueless fiber. Do not feed any one kind of grain sorghum all the time. Chickens do better on a variety of feeds.]

Canadian farmers are confident that wheat will reach the unheard-of figure of \$2 a bushel this winter.

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4 inches deep



2½ acres a day—one man and two horses. Ground is hard before it all gets plowed. The moisture dries up and crops can't grow. This wasteful method is no longer necessary.

15 acres a day—one man, one Yuba. Ground is plowed while in perfect condition—as it crumbles it retains the air and moisture. This economical method is approved by experience.

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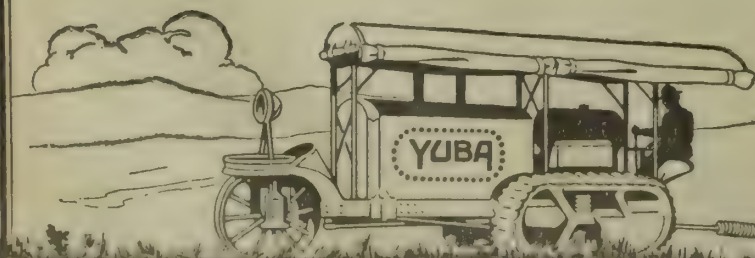
Gentlemen: Kindly send me a copy of your booklet, "The Yuba Ball Tread Tractor."

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P. O. Box	Fruit..... Rice.....
Town	Grapes..... Alfalfa.....
State	Grain..... Hay.....
Size of Farm..... Acres	Hops

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10 inches deep

"Eureka" is Not a Clover.

To the Editor: Several communications requesting information in regard to a new and wonderful forage plant, called "Eureka clover," prompt me to state what the possibilities of the plant are from an agricultural standpoint.

The name "Eureka clover" is misleading as it is in no sense a clover, nor can it compare with the true clovers in feed value. It is commonly known in agricultural literature as "sachaline," *Polygonum sachalinense*. It is a native of the island Sachalin, north of Japan in Russian territory. It was introduced into cultivation as early as 1869 and first considered as a forage plant in France. Since that time, about every decade or so, it is much advertised and extravagant claims made for it. We have before us at this time one of these circulars, which says the plant "extracts nitrogen from the air and potash from the deep soil and fertilizes itself."

Sachaline is a member of the buckwheat family, *Polygonaceae*, to which belong such well-known plants as rhubarb and our common weedy docks. The plant itself is not unlike a huge buckwheat, often reach-

ing a height of eight to ten feet. The leaves are very large and coarse, frequently one foot or more long and half as broad. It does not extract nitrogen from the air, for so far as is known, only the legume family has this power. It is also more likely to use up the potash in the soil than it is to add that substance to it. When once established, it has been known to become a veritable pest, as it is a vigorous, strong perennial. Where other things can be grown for forage, it should not be planted. Stock like it, but it has no special features in this respect over grasses and clovers.

The circular states that it yields from 300 to 400 tons per acre. Ordinarily the yield is from 8 to 16 tons of green matter to the acre.

It has been tried at many American experiment stations, but is not considered worthy of cultivation except as an ornamental. The *Cyclopedia of Horticulture* recommends it for planting in rough places where a thick covering is desired.

It might be found useful under some unusual conditions and circumstances, but to introduce it as a farm crop on good, arable land would

certainly be a mistake.

P. B. Kennedy.

Grass & Forage Plant Investigations,
University of California.

[This plant was quite widely distributed in California about 1893 and condemned as worthless for ordinary forage purposes.—Editor.]

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PLOW NOW, WITH A GROUND HOG

By a system of weighting it works in Hard Ground, where other plows fail.

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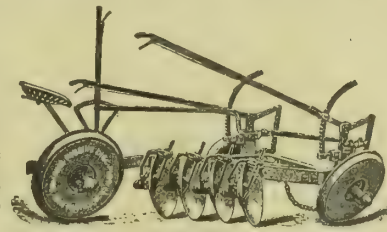
Orchard and Farm Plow

for small tractors, has no levers to interfere with limbs—no slow, cumbersome Worm Gear.

Write for Circular R.

SPALDING-ROBBINS DISC PLOW CO.

625 Market St., San Francisco



PROGRAM CONVENTION OF COUNTY HORTICULTURAL COMMISSIONERS.

[Napa, Cal., Nov. 13, 1916.]

The public is invited to these discussions of the latest developments in vital problems.

Nov. 13, 10:30 a. m.—Beneficial Insects of Most Economic Value, Harry S. Smith; Injurious Insects and Their Control, E. O. Essig; The Mealy Bug in Vineyard and Orchard, R. L. Nougaret and Wm. Wood.

Nov. 13, 1:30 p. m.—Pear Thrips, J. W. Mills; Some Aspects of Citrus Pest Control, H. J. Quayle; Cover Crops in Deciduous Orchards, W. M. Mertz.

Nov. 13, 7:30 p. m.—Fungus Diseases of Deciduous Fruits, Ralph E. Smith; The Little Leaf Disease of the Vine, F. T. Bioletti.

Nov. 14, 9 a. m.—A State-wide Campaign Against Weeds, J. B. Hickman; Report of Legislative Committee on Proposed Amendments to Horticultural Laws, O. E. Bremner

Nov. 14, 1:30 p. m.—How Our Horticultural Laws Affect Fruit and Produce Merchants, Dudley Moulton; Application of the Standardization Law and Suggestions for its Improvement, Hon. Geo. W. Ashley and C. K. Turner.

Nov. 14, 7:30 p. m.—Discussion of Any Subjects of Interest, in charge of D. D. Sharp.

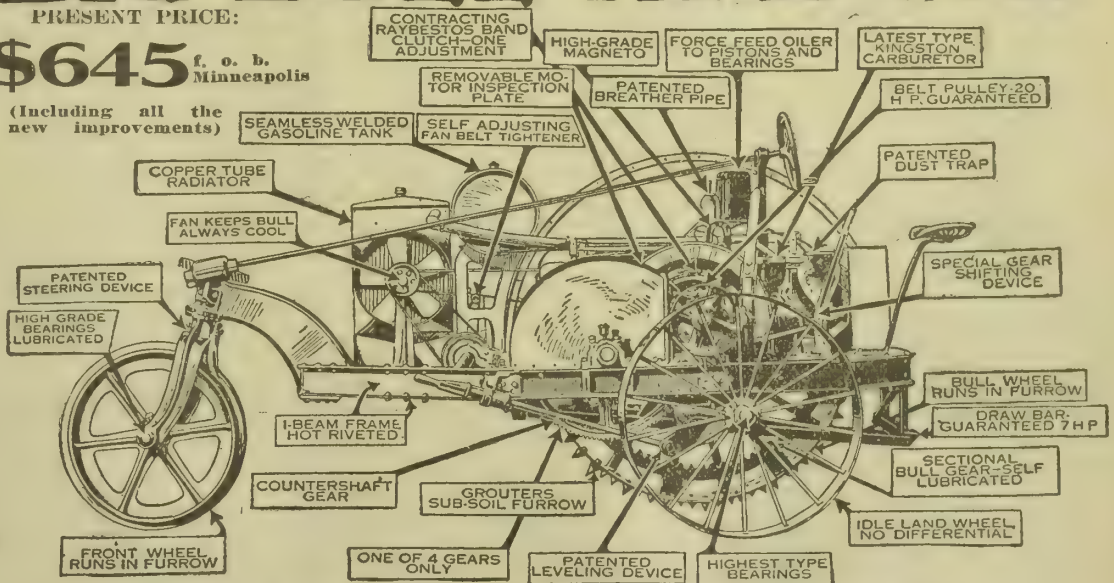
The bean growers of the Goleta district plan to hand-pick their crop. Much of the Southern California lima bean crop is on adobe land. Clots of adobe cannot be kept out of the beans, and when these approximate the size and shape of a bean no machine can separate the two. There are also discolored beans that have become damp or crushed in the thresher. The mud-discolored beans and those injured cannot be caught by any machine built to sort for size and weight only. Growers have, therefore, installed a hand-picking belt table at their warehouse and planned to set a crew of men or girls to work on the job. This will cost one-twentieth of a cent per pound extra.

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Superphosphates Increase Alfalfa Yield.

[Written for Pacific Rural Press.]

One of the interesting experiments in alfalfa growing tried out by A. B. Humphrey, on his ranch near Escalon the past year, was the application of 200 pounds of superphosphate per acre on alfalfa planted the year previous.

In spreading the superphosphate a wagon was used having a distributing box on the rear end but not extending out over the wheel tracks and as the driver drove back and forth over the field he followed the wheel tracks of the previous trip. In this manner at regular intervals over the field small strips were left bare, the harrow which was later used not spreading it thoroughly.

At the time of the writer's visit the second cutting was almost ready to mow, and without knowing of the experiment, we saw quickly the long thin rows across the field on which

the alfalfa was from six to ten inches shorter than on the main field and upon inquiry we learned of the experiment. Mr. Humphrey estimated that the superphosphate had increased the yield of the first and second cuttings fully 75 per cent on sandy loam soil that is naturally adapted to alfalfa and on which heavy tonnages are the rule. Furthermore it was thought that following crops would be equally as much benefited.

But to get such results it is necessary to harrow the phosphate in directly after spreading as was shown on a separate check where the same amount had been applied but where no harrowing had been done. The alfalfa on this check at the time of our visit was no higher than on adjacent checks where no fertilizer had been applied.

Dry-Farmed Sorghum.

To the Editor: I send you two heads of sorghum: dwarf white milo and feterita. These are average size and condition of heads on my crop—though cut a bit green. There is nothing at all remarkable about either the samples or crop except the method of raising.

I had about five acres this spring which was above my water level and covered with a rank growth of weeds. I had expected to plow it up and let it lie until fall, but at the last minute drilled in sorghum. It was turned over without disking and harrowed twice before sowing. Since that time I harrowed it every two weeks after it came up.

The stand is thick; the feterita in particular has averaged five to eight or more stalks to a stool. The milo too has made a rank growth.

The land is far above any sub-irrigation and is the well-known "sandy loam" supposed to be "grained out." The strange part is that I have better corn than my neighbors who have used water two to three or more times with frequent cultivations!—G. L. H., Wintop.

[What you have experienced is just what sorghum ought to do. It will make more growth with the same water than any other plant, if it has enough heat. For a grain crop it is better without too much water, though when cut green it will use lots of water, making successive crops of green fodder. Your sample heads show you have had conditions just right for grain. Your neighbors probably used too much water for a grain growth. But you must remember that though sorghum will use water to such advantage your plants had moisture enough: if there had been less it would not have done so well. Sorghum is therefore a good plant for dry farming, but it must be good dry farming, which does not lose too much water.—Editor.]

REMOVING REDWOOD COLOR AND TASTE.

To the Editor: How Can I prevent a new redwood tank from coloring the water and making it taste of redwood?—D. L. T., Ripon.

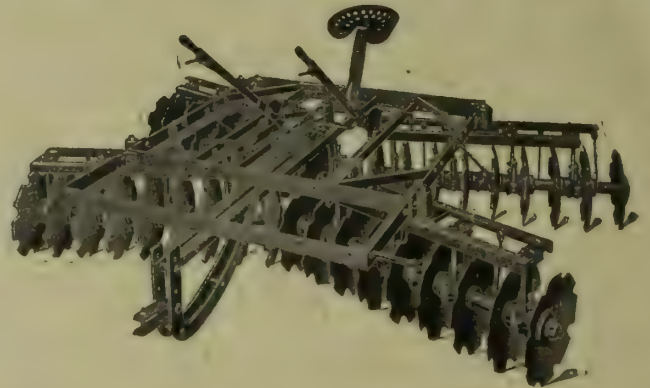
[Answered by F. H. Flood, Redwood Manufacturers' Co.]

A new redwood tank can be prevented from coloring the water and making it "taste of redwood," in one of two ways. The first method is to fill the tank two or three times, allowing it to stand for an interval of two or three days, or as long as possible, before emptying. Of course, this cannot be done if time is essential.

This method is effective, for it dissolves the coloring matter from the wood, after which the water remains perfectly clear and tasteless, and can be used for a great many years—in some instances as long as 65 years.

The second method, which is quicker than the first, is to mix a sort of thick paste from slaked lime with water. This should be applied with a brush to the inner surface of the tank, coating it in the same manner as would be done if it were painted. After this is done, fill the

IMPERIAL Double Disc Engine Harrow



SPECIFICATIONS:

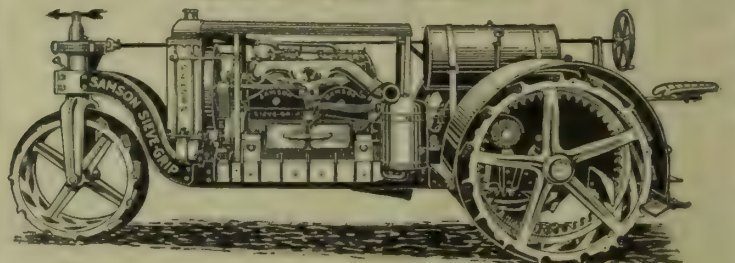
Axle, 1 1/4 inch square steel; Frame, 5/16x3 inch angle steel, double reinforced at the corners. Discs, 18 inch extra heavy, cutaway, 8 point. Bearings, hard maple with hand oil cups.

The principle of this machine is that of two Disc Harrows, one out-throw and one in-throw, built together under a strong, rigid, heavy angle steel frame. The forward Harrow works exactly like the ordinary Disc Harrow in cutting the ground and throwing it outward from the center. The rear Harrow works in the opposite direction, cutting the same ground and throwing it back. The result is equal to that secured by two workings with an ordinary Disc Harrow, but the soil is more thoroughly pulverized and the surface more effectively leveled. Requires but little more power than single disc of same width.

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tank with water and allow it to stand for a day or two. The lime will settle to the bottom, after which the tank should be emptied and cleaned out. The lime neutralizes the stain, which is an acid one and after this is done clear water will be obtained. If hot water is available, the chemical reaction is hastened and a lesser time will be consumed in effecting the neutralization.

THE POTASH SITUATION.

[Written for Pacific Rural Press.]

While the agricultural need for potash fertilizers in California is subject to question, there continues a more or less urgent demand for it; but the supply is practically exhausted. We called up several fertilizer companies recently to locate some potash for one of our subscribers.

The German imported sulphate of potash, the form in which we used it mostly before the war, containing 50 per cent potash, was quoted at \$300 per ton, with practically none available. The Utah deposits are turning out about 25 tons per week of 40 per cent potash @ \$250. One or two companies are selling their limited supplies only to those customers whose trade is valuable in other ways. One lot of a few tons was located near Los Angeles for our subscriber. There are large undeveloped deposits of potash in Spain. The cement factories of Southern California are turning out considerable quantities as a by-product. California seaweed has been heralded as a source of fertilizer; but all the potash made from this is used for other purposes and is too expensive for fertilizers. A Spanish chemist announces in the Consular Reports that sea water evaporated for common salt, contains valuable potash very cheaply obtained from the water by further evaporation after the common salt has been deposited. This has not become commercially developed. Meanwhile farmers may seek means of unflocking the potash reserves in their soils.

GRAIN SORGHUM ON ADOBE.

To the Editor: What would be the most profitable to plant next April on adobe land that is to be plowed for summer fallow next Feb. or March—Feterita, milo or Egyptian corn? Will any of these injure my summer fallow for the grain crop to follow? How deep should I plow?—T. S., Byron.

[Answered by Prof. B. A. Madson, University Farm, Davis.]

All of these crops can be grown even on adobe land if proper precaution is taken to prepare a good seed bed and get the crop well started. Milo, however, is to be preferred, followed by Egyptian corn and feterita in the order mentioned.

It is advisable, where crops of this character are to be grown, to plow the land in the fall, allowing it to lie rough during the winter and then work it down to a good seed bed in the spring. The crops should be planted about the middle of April, in fact a little later planting is usually advisable on heavy soils than on light soils. In plowing the land in the fall I would recommend that it be plowed at least eight inches deep to break up plow-sole, and to provide a large volume of loose soil for the absorption of

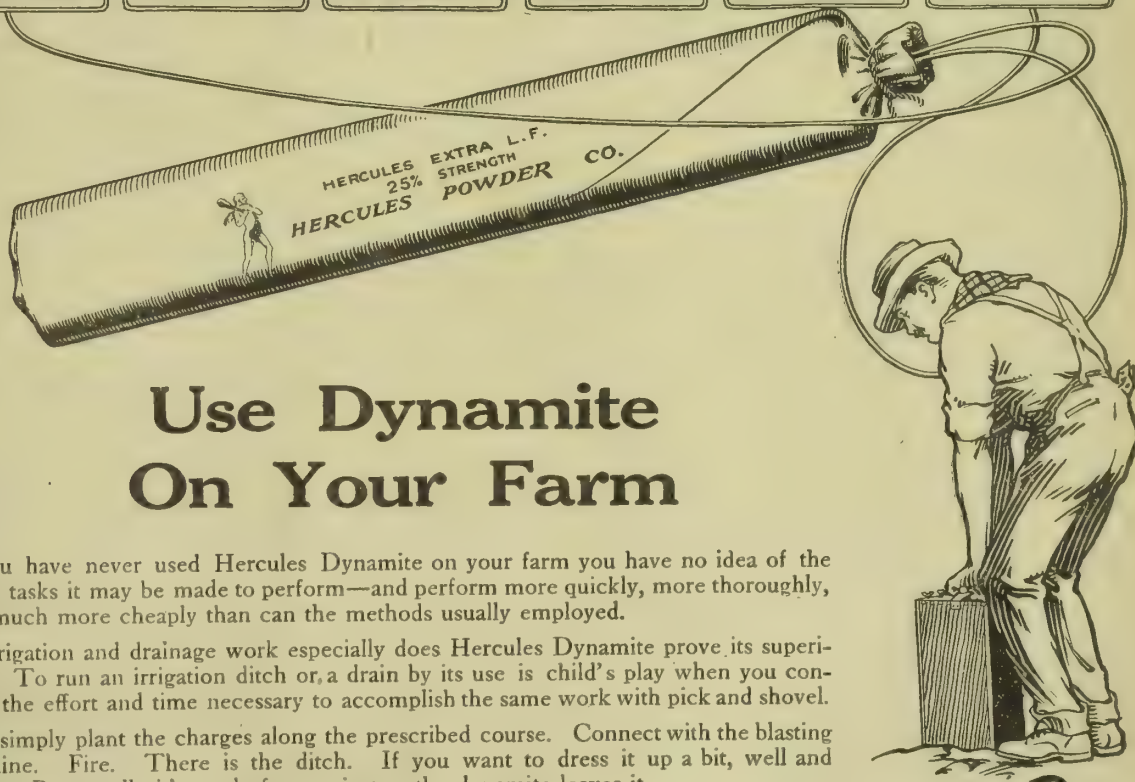
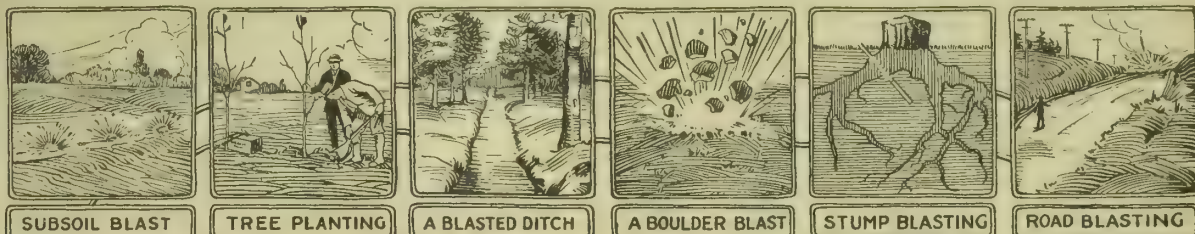
the moisture, as well as for the rooting of the young plants.

If the crop is to be succeeded in the fall by grain, the yields of wheat or barley will not be so large as if the land had not been cropped to grain sorghums, but better results should be obtained than if following a cereal.

Two years ago there was not an acre of sugar beets in San Joaquin county. Now there are from 10,000 to 13,000 acres, and for the 1917 season a much larger acreage is assured.

LIME DOLLARS
MEANS
WHEN USED ON YOUR
Free Booklet.
PACIFIC LIME AND PLASTER CO.
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MOCOCO
SUPERPHOSPHATE
is a splendid fertilizer for
ALFALFA, WHEAT, ORANGES, PRUNES, ETC.
The Mountain Copper Co., 332 Pine Street, San Francisco



Use Dynamite On Your Farm

If you have never used Hercules Dynamite on your farm you have no idea of the many tasks it may be made to perform—and perform more quickly, more thoroughly, and much more cheaply than can the methods usually employed.

In irrigation and drainage work especially does Hercules Dynamite prove its superiority. To run an irrigation ditch or a drain by its use is child's play when you consider the effort and time necessary to accomplish the same work with pick and shovel.

You simply plant the charges along the prescribed course. Connect with the blasting machine. Fire. There is the ditch. If you want to dress it up a bit, well and good. But usually it's ready for use just as the dynamite leaves it.

HERCULES DYNAMITE

is also most valuable for the work it does in subsoiling—an operation which, by the way, can be performed by no other means.

Every progressive farmer is familiar with the almost phenomenal crop results that have been obtained by subsoiling. Many, however, have not yet tried it on their own land. How about you?

In your own interest, in the interest of your farm, you should write us for a book which we have prepared

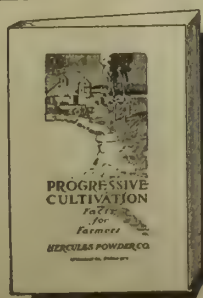
on the subject of the use of dynamite on the farm. It is called, "Progressive Cultivation", and sent free on request.

In it the subjects already mentioned, also many others such as tree planting, road building, land clearing, etc., are fully discussed and the best methods to follow carefully explained.

You will find the book well worth having. Write for your copy today. Please use the coupon below.

HERCULES POWDER CO.

CHRONICLE BUILDING,
San Francisco, California



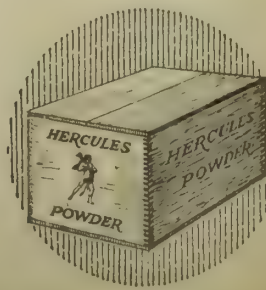
Hercules Powder Co.,
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Gentlemen:—Please send me a copy of "Progressive Cultivation".

I am interested in dynamite for.....

Name.....

Address.....



General Agricultural Review.

FIELD CROPS.

The Oakdale Cannery will begin to pack pumpkins December 1.

Considerable alfalfa hay was damaged by the rains, and the fifth cutting in many places will not be baled.

Sugar beet-growing is favored at Perris. A large acreage is planned by the American Sugar Beet Company.

Cotton consumption in the United States this year has averaged, thus far, more than 500,000 bales a month.

The Spreckels Sugar Company sent out checks to the amount of \$60,000 recently as second payment on beets to growers in the Manteca section.

It is reported that the San Joaquin Valley Sugar Company will pay the freight on all beets received from all parts of the valley to its mill on an equality.

Antone Baptiste, at his Somis ranch, succeeded in harvesting 116 100-pound bags of lima beans this season from a start of six single beans three years ago.

Between 600 and 700 acres of the Frank Sanders ranch in the Westport district near Modesto have been leased to two Japanese of Salinas, who will plant it to sugar beets.

Dyer & Co., of Cleveland, Ohio, sugar beet factory experts, have accepted the contract for the erection and equipment of the \$1,000,000 sugar refinery on the Whitehall Estates, near Tracy.

Rice growers are complaining of the depredations of mud-hens and will ask the next Legislature to repeal the provision of the game laws now protecting them.

Geo. J. Burris says he has discovered in the mountains east of Forest Home a potash and aluminum deposit. He says the aluminum will pay for mining the rock and the potash will run about \$30 to the ton.

The Pacific Rice Growers' Association controls 61 per cent of the rice to date in the State, which assures their success this year. Mr. Virden or Mr. Stephens will leave for the South the middle of the week to engage competent graders and rough rice experts.

Thousands of acres of the great "pocket" lying between the Modesto Irrigation District and the San Joaquin river, are being put in shape for rice cultivation, six miles west of Modesto this season. The services of an expert rice grower have been secured for the management of the new venture.

Plans whereby potash from the deposits of Seales lake, in San Bernardino county, will be marketed, have been completed, it is announced. It is believed that potash cheap enough for farmers' use will be available in the early spring. At present potash is out of the market for agricultural purposes.

The directors of the Southern Rice Growers' Association established prices for the new season as follows: No. 1, fancy Honduras, \$3.50; No. 1, Honduras, \$3.35; Blue Rose, \$3.25. Price minimums on lower grades were fixed as follows: No. 2, Honduras, \$3.20; No. 3, Honduras, \$3; No. 4, Honduras, \$2.80; No. 2, Blue Rose, \$3.15; No. 3, Blue Rose, \$3; No. 4, Blue Rose, \$2.80.

Cotton planters in the Imperial Valley are feeling the shortage of pickers. Cotton at 17 cents this year means a large increase in cotton acreage next year. Some buyers have already guaranteed 12½ cents a pound for 1917 cotton. A good many fortunes will be made this year in this staple. Ten million dollars derived from the cotton crop is the prospect for Imperial Valley farmers this year.

Hop growers and handlers are urged by the U. S. Dept. of Agriculture to make certain that the sulphur they use in curing is free from

arsenic. The presence in occasional shipments of American hops of minute traces of this poison, introduced by the use of impure sulphur, has lead at times to rejection of shipments, especially in cases of exports to foreign countries with rigid standards. Investigation just completed, establishes definitely that impure sulphur is the source of the toxic ingredient.

The Pacific Rice Growers' Association is circulating for signatures an agreement pledging the signers to place the selling of their rice crop in the hands of the association. It sets forth that the future of the rice industry in California is menaced by various Asiatic interests offering to sell their present crop for \$1.50 per cwt., when it costs the average grower \$1.35 per cwt. to raise same. Many large land owners, renters and agents of large tracts of land to be planted to rice in 1917, are signing this agreement.

DECIDUOUS FRUITS.

The Stewart Fruit Company of Porterville expect to ship about fifteen cars of pomegranates this season.

E. R. Pennebaker of the Stewart Fruit Company recently distributed \$6000 to the peach growers of Kings county in the form of a bonus.

The U. S. Dept. of Agriculture, co-operating with the California Fruit Growers' Exchange, has worked out a uniform system of accounting for local associations.

The Fresno county ordinance, extending the orange test of "eight to one" to all orange shipments from Fresno county, has been passed by the Board of Supervisors.

Since the Citrus Protective League was discontinued, its secretary, F. O. Wallschlaeger, is in charge of the statistical department of the Calif. Fruit Growers' Exchange.

John J. Foss, of Napa Co., gave a demonstration of tree surgery for orchard trees last week, and the attendance and interest shown has far exceeded his expectations—numbers of machines coming every day.

Herman I. Graser will spend about a month in Placer Co. helping Farm Adviser E. O. Amundsen. He will devote his time to giving demonstrations in pruning, control of peach thrips and the use of lime.

The American Embassy at London reports respecting American canned, bottled, preserved, and dried fruits, that the requirements of the British Foreign Office that they must reach the Atlantic seaboard by overland route in order to be permitted entry has been suspended.

Off of eight acres of 20-year-old Adriatic fig trees W. I. Hiatt of Zamora has about eighteen tons of dried product to show for his present year's proceeds. These have been sold at five cents a pound or approximately \$225 per acre. More over the same piece of ground, between the rows, produced about 12 tons of Sultana raisins that will increase the acre production to considerably over three hundred dollars for the current season. Mr. Hiatt this year increased his Sultana plantings fifty acres. His experience causes him to prefer this grape over the Thompson Seedless. "In this district they certainly out-produce the Thompson," says Mr. Hiatt. "Besides this they shatter far less in harvesting and also are much less subject to mildew."

CITRUS, NUTS, SEMI-TROPICAL.

Live Oak district is coming forward as a producer of almonds. Some important shipments were recently made.

All the almonds of the Sutter Almond Growers' Association have been shipped out, and its season's work finished.

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WHEREVER you are you can turn to a Firestone man and get the tires of Most Miles per Dollar.

The news of Firestone quality has traveled everywhere. The demand is universal. The most business-like dealers have established themselves as Firestone men. And backing up these dealers is the vast Firestone Organization.

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ANTHRACNOSE
SHOT-HOLE FUNGUS
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ORCHARD BRAND LIME SULPHUR SOLUTION is the best material known for general dormant spraying.

ORCHARD BRAND BORDEAUX MIXTURE PASTE is the most economical form of this standard fall fungicide spray.

ORCHARD BRAND CRUDE OIL EMULSION possesses great penetrating power and is an exceedingly efficient dormant spray for killing scale insects, aphids eggs, etc.

ORCHARD BRAND products are scientifically made from formulas that are the result of exhaustive research and expert knowledge.

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Dept. P 1, San Francisco.
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☐ APPLES ☐ WALNUTS
☐ PEARS ☐ CHERRIES
☐ PRUNES ☐ ALMONDS
☐ APRICOTS

I have acres in orchard.

Name

Address

Packing of 1916 olives started at the Tulare County Growers' Association cannery last week.

Present indications are that the orange crop of Tulare county this year will be from a week to ten days earlier than usual.

From 4 1/2 acres of Adriatic figs on the J. E. St. Louis Ranch near Colusa 30 tons of dried figs were harvested this year. The trees are 25 years old and touch in the row, though set 40 feet apart.

A carload of Fair Oaks oranges is en route to New Zealand. The shipment was made up of immature fruit, which will be ready for the table by the time it reaches New Zealand.

The University of California will hold a "Citrus Institute Week" at Riverside from Monday to Friday, November 20 to 24, inclusive. The University's orchard experiments will be demonstrated by scientists of distinction.

Word comes from Oroville that interest has been awakened in an early ripening olive grown from budded stock obtained from a parent tree in Palermo. These trees produce the true Mission olive, but ripen three weeks earlier than the common variety.

To guard against citrus canker, an absolute quarantine against all imported citrus fruits, trees, buds and scions has been established by Acting State Commissioner of Horticulture George P. Weldon. Formerly quarantine was imposed only upon citrus fruits coming from Florida. The new order is directed against all states.

Replying to inquiries from abroad, R. M. Tooker & Co., wholesale brokers of dried fruits, etc., San Francisco, inform us that this year, with conditions as they are, caused by the unusual early rains, there will probably be no black figs obtainable in California, certainly not enough for shipment to foreign countries.

A. T. Emory of Whittier, who is visiting in Kentucky, has sent home from Henderson, Ky., a sample of Sicilian lemons he found on the market there. It is scrawny and unattractive and much inferior to the California lemon. The merchant from whom Mr. Emory obtained the lemon says it cost him \$7.50 per box, while the California lemon would have cost him \$8.00 per box, hence the preference given the foreign lemon.

GRAPES.

The California Associated Raisin Company are able to make 100 per cent deliveries on the Muscat orders that have already been received.

In response to reports of an unknown disease affecting a number of raisin-grape vineyards in the vicinity of Dinuba, Visalia, Exeter and Parlier, the State Board of Viticultural Commissioners is about to conduct an investigation.

Sales or attempted sales of approximately 250 tons of raisins to outside packing companies, which were contracted to the California Associated Raisin Company by sixteen growers, has led to the filing of a like number of suits by the association, on charges that the contracts have been broken.

Probably the most popular exhibit with country people at Fresno Fair was that of Horticulture and Viticulture. Grapes were the major part. No grape exhibit equaled that of Frank Henry and A. B. Cate, though the Kerman booth had a cane with 16 bunches weighing 40 pounds, grown by J. W. Shuey. Henry & Cate had an arm from a Malaga vine, the arm of which had 39 good first crop bunches and 35 mature second crop bunches.

MISCELLANEOUS.

The bright warm weather of the last two weeks has been a great help to the farmers of Kings Co. A great many who did not expect to save any raisins are going to market over 50 per cent. Tons of hay that

were in the shock or windrow has been dried out and stacked. It is pretty black, but by going through a good sweat it will make good cow feed. Buyers are not objecting to the discolored Egyptian corn that is being marketed now. Grasses of all kinds are getting a good start and this is promise of a great deal of feed for winter pasture unless we have an unusual long dry spell at this time.

J. C. Galloway of Modesto writes us: "I have a little patch of Sudan grass near my barn that I have cut five times. It was sprinkled with a garden hose twice. Each crop was heavier than the preceding. I have fed it to my cows green, half dried,

and dry with no apparent injury to them."

The regular monthly meeting of the Sacramento Valley Development Association was held at the Plant Introduction Station, Chico, with a good attendance. The banquet in the evening was a very pleasant affair. Dr. B. T. Galloway, Director Cornell University Experiment Station, was the guest of honor.

The United States Bureau of Labor Statistics recently reported that of 210 brands of bread that retailed for 5 cents and weighed 15 ounces or over on May 15, only 14 remained at the same price and weight on September 15. Wheat

was 31 per cent higher in price on September 15 than on May 15.

Twenty-four champion boy farmers of California, who won this month's trip in a special car by defeating 1100 competitors in the University of California's annual crop-growing contests for high school agricultural clubs, have set forth on a 9,000-mile journey. They are to be led by Prof. B. H. Crocherson of the University on a visit to the most famous orchards, breeding-farms, and agricultural industries of America, so as to bring back to California the stimulation of knowledge of the best methods in farming in other parts of the country.

Same HUDSON SUPER-SIX Again Breaks Ocean to Ocean Record

On Return Trip Across America It Beats Best Previous Time and Establishes World's Endurance Record

The same Hudson Super-Six Touring Car which ran from San Francisco to New York in 5 days, 3 hours and 31 minutes, started back from New York on its arrival there and again made the transcontinental trip in shorter time than any other car ever made it.

Last spring the wonder record for the one-way trip made by a famous eight was 2 1/2 days longer than the time required by the Super-Six.

No other automobile ever made the round-trip against time. Yet in both the going and return trips the Hudson Super-Six lowered the best previous one-way record.

In a little more than 10 days the Super-Six covered 6,952 miles.

Counting all stops, and slowing down to the speed restrictions of 350 cities, towns and villages each way, the average time from San Francisco to New York and back to San Francisco was almost 700 miles a day.

In the last leg of the return trip, between Elko, Nevada, and San Francisco, heavy mountain rains were encountered. In the going trip that distance was covered in 20 1/2 hours. On account of the rain and mud, 35 hours were required on the return. Under similar road conditions as were met in the going trip the return would have been under 5 days.

Hudson Holds Every Worth-While Record

There are no important world's records which refer to a stock car that the Hudson Super-Six hasn't won. The best former records are too easy for the Super-Six. The events are too easily won. For instance, in the 24-hour record, 1819 miles, it exceeded the best former record by 52%.

And the Super-Six made the best time in the world's greatest hill-climb up Pike's Peak. The best time for 100 miles. The greatest distance covered in one hour and the fastest time for a stock chassis at the rate of 102 1/2 miles an hour.

Such Endurance Is Convincing

Here we prove again that the Hudson Super-

Six has more endurance than we have ever claimed for it.

What can be more convincing than that round trip across the continent made with a Hudson Super-Six light weight 7-passenger phaeton? Previous records were made with roadsters and stripped cars, but the Hudson at all times carried three, and sometimes four, passengers, and with its baggage weighed in excess of 5,000 pounds.

No Engineer Hopes to Excel It

Remember that the Super-Six is a Hudson invention controlled by Hudson patents.

A hundred cars have motors of like cylinder capacity. Many cars have more cylinders. But in the Super-Six vibration has been reduced to almost nothing. That adds 80% to efficiency.

The Super-Six is not one of the passing sensations. Ours is not one of those claims to motor supremacy which yields in a year or two to another. Mark what these records mean. There is plenty of evidence now to convince you that it cannot be superseded.

Save \$175 Now

For many reasons, now is the time to get a Hudson Super-Six.

In the first place you can get delivery now. Last summer thousands had to wait, and thousands must wait next spring.

Then by buying now you can save \$175. The price will be advanced December 1. The models will not be changed. You get the same Super-Six motor, the same wonderful chassis, and the same beautiful body. Your car you get now will be identical with those we shall sell after December 1, except for some minor details.

Phaeton, 7-passenger . . . \$1475
Roadster, 2-passenger . . . 1475
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Touring Sedan \$2000
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HUDSON MOTOR CAR COMPANY, DETROIT, MICHIGAN

Mechanical Power on the Farm.

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of your experiences and troubles.

THE FARM A FACTORY.

[From Address by C. W. Ward at Humboldt County Farm Bureau.]

Taking the proposition that the farm is a factory, it follows that the machinery to run that factory is of as much importance as the machinery in the shoe factory is for the manufacture of shoes.

The best and most thorough machinery for cultivation is none too good. Of course it costs money, considerable capital. So does the boot and shoe machinery cost money, but the boot and shoe manufacturer takes care of his machinery and does not allow it to be exposed to the weather and destroyed. So the modern farmer must invest capital in the best and most practical machinery; he must put up buildings and give that machinery proper care.

The Farm Tractor is thoroughly serviceable and practical. It is an expensive machine and one that must be properly cared for. If you own a tractor you cannot afford to leave it out in the field over night or during rainstorms. It should be provided with a building to shelter it at night and from storms. In this building there should be a work bench with a certain number of tools so that the engineer who runs the tractor will be able to take care of his machine and do whatever light repairing and tightening up of bolts and joints that may be necessary in order to keep his machine in first class condition.

Community Tractor.—The small farmer will say, "A tractor costs too much, my farm is too small." The owners of large areas of land are able to manufacture agricultural products upon a basis of cost with which the small farmer must compete. Consequently I would recommend serious consideration by this Farm Bureau of the problem of inducing a combination of small farmers to purchase one of the smaller and less expensive farm tractors. There are a number in the market which cost less than \$2500 and this means merely the investment of \$500 each for five different small farmers.

The 30 horsepower tractor we have upon the Cottage Gardens does the work of approximately seven heavy teams. The cost of the seven teams under present prices is a little more than the cost of the farm tractor and all of its machinery, including plows, disc harrows, and land leveler. The horse in plowing walks at about the rate of 1½ miles per hour and plows only one furrow. The tractor travels at the rate of 1½ to 2 miles per hour, plowing five to six furrows. The tractor continues this speed in plowing throughout the entire day, while the span of horses gets pretty tired at two or three o'clock in the afternoon and mighty anxious to quit.

Tractor Plows Deeply.—In the climate of California, where it is necessary to pulverize the soil deeply in order to give the roots opportunity to extend deep to reach sufficient moisture to carry it through

the dry season, this ability to cultivate deeply is one of the strong points of the modern farm tractor. Plant food must be distributed throughout all parts of the soil which are reached by plant roots in order to produce the best crops; and it must be put into the soil in such condition as will become available for plant consumption. In shallow cultivation, putting nitrogenous plant foods into the soil and plowing them only three or four inches deep, is simply a waste. On the other hand, if nitrogenous manure is plowed under deeply, say 10 to 16 inches, and this process of plowing thoroughly distributes the nitrogen throughout the entire mass of cultivated soil, it is only necessary to keep up the continuous surface cultivation, producing the well known dust mulch three or four inches in depth, which arrests evaporation, retaining the nitrogenous manures underneath the mulch where the plants can use them.

ALFALFA PASTURING IN MONTEREY COUNTY.

[Written for Pacific Rural Press.]

Healion Bros. of Monterey county are among those dairymen who have found pasturing more economical than cutting the alfalfa and feeding green.

True, they are on a rented ranch where the damage to alfalfa by pasturing is of no concern to them, but nevertheless they do not believe that the alfalfa has been damaged to any extent by pasturing and they would do the same thing if the ranch was their own.

But you want to use care in pasturing, both for the land and the cow's sake. They never pasture when the land is wet from irrigation, preferring to wait till the plants have put out a heavy growth, then stuffing the cows well with dry feed before turning out. This, they find, is almost a certain preventive against bloat and the cows keep up in their milk flow better than when fed in any other manner they know.

The 142 acres of alfalfa in the ranch they farm is all irrigated from a pumping plant and underground cement pipe distributing system. Once started in the spring the pumping plant is never stopped, surface distribution being rather slow with the galvanized iron pipe which it is necessary to use.

Besides the field set aside for pasturing an immense amount of hay is stacked each year, six good cuttings being the rule, the hay cutting and stacking following back of the irrigators all season.

In the winter this hay in connection with concentrates is all fed out, enough cows being kept to consume it. As a rule this calls for between 100 and 110 head, the average production of which is around 22 pounds of four per cent milk. Improvement in this yield is expected, however, as purebred Holstein bulls are in use and the herd gradually being improved on that account.

"HEADQUARTERS" FOR WOOD PIPE AND TANKS

TANKS

WINE TANKS

FERMENTING TANKS

WATER TANKS

OIL TANKS

PIPE

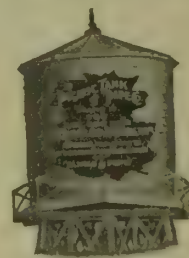
WOOD STAVE PIPE

IRRIGATION PIPE

MACHINE BANDED PIPE

SEWER PIPE

WATER PIPE



WRITE FOR ILLUSTRATED CATALOG

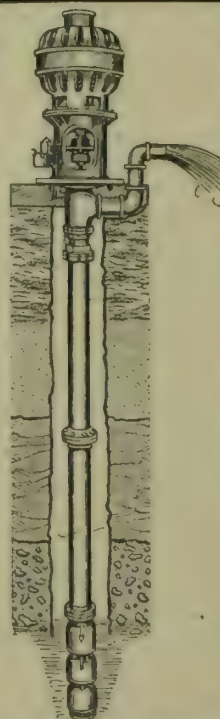
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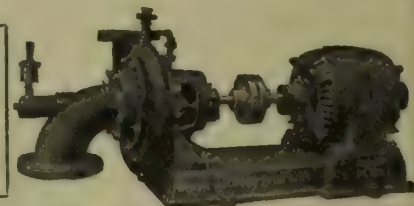


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No valves to pack or plunger rods to get out of order. For use in any well ten inches in diameter or over.

A complete line of irrigating pumps of all descriptions, horizontal and vertical for belt drive or direct connection to electric motor.

Prices as low as are consistent with good quality and workmanship.

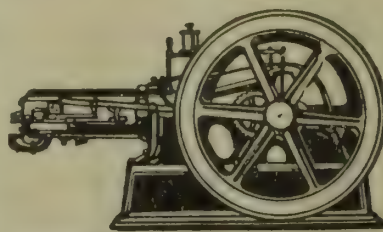


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are invited to visit our Fresno salesroom freely, and without obligation.

as compared with 250 to 750 for most other engines. That's one of the reasons for the superior efficiency and durability of

Commercial Engines

A size suitable for every need, and backed by a Real Guarantee—written. Made in the West for Western conditions and sold at a reasonable price.

Send for our big catalog which explains the engine situation most thoroughly, and simply.

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When you buy a rubber belt you should know what service it will give you or have the belt service guaranteed by a responsible firm who will make good in case the belt falls down. Every belt-buyer should know how to judge a rubber belt, and we would like to send you a free sample of Test Special together with our folder that will tell you just how to judge a rubber belt so that you may know just what service you will get from any belt you buy.

Fill out the coupon and mail it to us and we will recommend a belt that we will unqualifiedly guarantee to do your work satisfactorily. We have had seventy years' manufacturing and selling experience.

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Send me samples of Belting that you will guarantee to give satisfactory service on my work and quote prices delivered at _____ Cal.

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Revolutions per Min. { _____
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Kind of Mach- { _____
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A pocket memo booklet giving speed and power tables will be sent FREE to all who mail this coupon.



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Water Troughs,
Windmills, Frames,
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Prices the lowest.
BROWN & DYSON
640 So. Center St.,
STOCKTON, CAL.

RAISES BEANS WITHOUT PLOWING.

[Written for Pacific Rural Press.]

"I have never found anybody that could tell me why we should turn land over," said F. E. Barnard of Los Angeles county when asked what is the philosophy of his "Barnard chisel" manufactured by the Killefer Co. for use with tractor engines.

Mr. Barnard farms 2500 acres of beans and has land that never was plowed. The only excuse for plowing is when weeds get ahead of the various cultivators.

The "chisel" consists of a strong frame holding about nine subsoiler standards with small double points which loosen the ground about a foot deep. One of his half dozen track-type tractors pulls this through the dry ground right after threshing and before the rains, tearing up a strip about 8 feet wide and breaking all big clods because the standards are not far apart. When rains come, they do not puddle the surface, being held there by a hard plowpan, but immediately sink away into the great subterranean reservoir opened up by the chisel. The loosened soil has every opportunity to aerate or weather without hurting the crop as extra-deep plowing might. The water there is shaded by a cultivated mulch on top and is not easily evaporated. Roots of the plants each year find a greater supply of plant food easily reached.

LOCATING IRRIGATION WELL.

To the Editor: I was informed yesterday that without fail water can be located by a scientific instrument as well as by the willow switch system. What do you think about it? I am very anxious to get a good well for irrigating and I am told water is scarce here.—F. J. K., Cupertino.

[The only scientific instrument which will locate water as well as a willow switch (which is not at all) is the machinery with which to sink a small test hole to a promising stratum. This is the practice in some sections of the State and enables you to measure the flow before you put down the expensive well. Ask your nearest neighbors who have wells in all directions from you, how deep they went, how near the surface the water comes in their wells, and how much of a flow they get. Then you can estimate how far your test well will have to go.]

PART OF TRACK ROTATES, RE- MAINDER MOTIONLESS.

To the Editor: A party told me that all the surface of a tracklaying tractor that is on the ground is still until the engine passes over it, and yet the machine is running. I can't get that through my head.—F. E. P., Guinda.

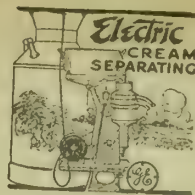
[When you see a track whose sections in contact with the ground are not still, you will see the dirt fly as we did on some overloaded tractors at the Puente demonstration. Set a stick in the ground at a joint in the track while a tractor is running and prove for yourself that it doesn't move until the engine has passed over it.]

HARVESTER CYLINDER SPEED.

[Answered by J. W. Givens, Lingard.]

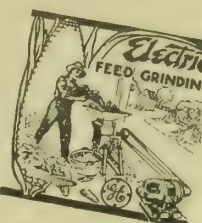
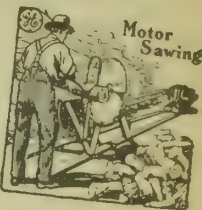
To the Editor: What is the cylinder speed of an ordinary horse harvester?—E. B. B., Fresno.

[Cylinder speed varies from 800 to 1300 r.p.m. It is better to run it fast in tough or weedy grain. The



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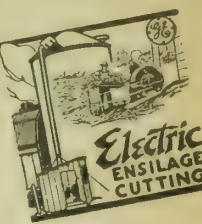
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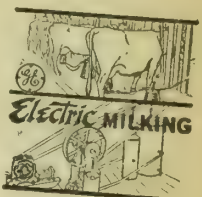
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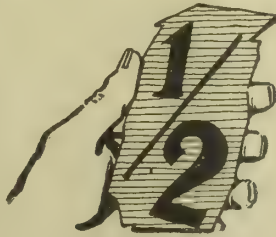


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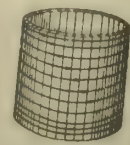
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MICA AXLE GREASE

number of bars will also help determine speed. In the East, they are coming to a 15-bar cylinder, but in San Joaquin Valley it is usually 10 or 12 bars.]



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Thirty-five years in this business in Stockton.—A 500-gallon tank, \$8.00. A tank 6 ft. x 2 1/2 ft., \$7.50. Other tanks equally cheap. I deal direct with the consumer, saving 10% to 25%. All sizes in stock. Clear dry redwood direct from the mill. Write for price today. Latest improved machinery. Doors, Windows. Frames, Mouldings.
W. F. WILSON, STOCKTON, CAL.

How not to hitch plows onto a tractor was well demonstrated at Puente by one driver who overloaded his machine and could not pull the plows with the required side draft. The furrow wheel of the plow repeatedly climbed up on top. He tried running one track in the furrow, but that was worse yet.

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Circular containing 100 mechanical movements mailed free.

Livestock Facts and Fancies---VI.

[By the Editor.]

Enough has been said in previous talks, at least for the present, about the superior qualities and increased values of purebred individuals and how one should proceed by careful effort to recognize and appreciate it. There is another way in which we like to seek demonstration of the powers and values which may be concentrated in purebred animals and that is to observe how what marked effects they produce upon the livestock of a community, a district, a state or a nation, when they are introduced and used in a wise way for the improvement of the "common stock of the country," while a sufficient number of them are kept pure so that the influence of breeding in the purebred may be kept constantly at work during a period of time. Nearly every one has observed this, and so it need not be laboriously argued or demonstrated. Every one has seen forms change, weights increase, speed improved, milking made heavier, etc., etc., in each kind of animals, according as such improvements are desirable in the purposes for which they are kept. In addition to such personal observations, there is the general evidence of increased value which is found in the advanced estimation of the livestock of a state or county by those who are officially employed in the valuation of livestock as a national asset. Before the values of domestic animals became so sharply advanced by trade considerations as manifested by demand and supply, as it has during the last decade, there was in operation the steady increase in the intrinsic value of the animals themselves through the process of "grading up" by the use of purebred sires of different breeds upon the females of common stock. If one looks back through the records of several decades he will find increasing value of this kind duly employed in official valuations. It was of course only the generalized experience of all who had to do with the placing of price by buyers and sellers, with the weighing of animals of different ages, etc. It was an official recognition of the common experience that better animals are worth more either in growing, feeding, buying, selling or in eating. Better animals are worth more money and are easier to get to be worth it—if a man proceeds with any decent amount of intelligence and care in doing it.

But these things are too general to be more than mentioned in passing. What we particularly like to contemplate as a broad demonstration of the potency and value of purebreds, is the experience of Californians during the first decade of the development of this State. As shown with some detail in the Pacific Rural Press of September 16, the foundation stock of California in the cattle line was the so-called Mexican, plus the Texan, plus a small fraction of better common stock from the Mississippi Valley and farther east. At the very first a distinction was made between these classes. The Mexican which we found here, and the Texans which were driven in to fill the great de-

mand for meat for the miners, were both emphatically condemned and the man who had "good American cows" was in the nabob class, because he was seen to be on the way to better things. In the exhortation to increase dairying, when butter was worth a dollar a pound, this picturesque sentence was written by a pioneer: "Get good cows: discard all that have a mixture of Spanish breeds: you may as well choose oxen."

And they did get better cows, both for dairying and for the making of better beef. Shorthorns and Devons came first and made the impress of progress upon the despised Mexican. They imported also the best purebred horses, sheep and swine. The results attained were remarkable. A writer in Hutchins Magazine, in October, 1859, said this:

At one time it was a matter of some anxiety whether or not our supply of beef cattle and sheep would not decrease by overconsumption to justify fear of famine in fresh meats, but though population has greatly increased and consumption therefore is heavy, such has been the ratio of increase that our markets have been well supplied and still the number of animals of the finest breeds has been nearly doubled. Many of our horses already compare favorably with the celebrated stock of Kentucky and of Tennessee. Quietly but surely has progress been made with live stock of all kinds and with very profitable results. Therefore all should take courage to renew efforts and assist in progress that shall be lasting.

And all this was done in about five years after the introduction of purebred animals.

Another writer in a pioneer journal, the San Francisco Alta, also in 1859, gives other notes of progress:

The purchasing and raising of blood stock has not only become of extensive interest among our regular stockmen but many importations have been made by general farmers. The draft horse and racer of old England have their blood relatives on our ranches. Bakewells and Merinos, Southdowns and Leicesters are found in our flocks and Durhams and Devons in our pastures. Aside from direct importations by sea, among the herds that have crossed the plains we have many cattle from choice herds of Ohio and Kentucky.

There never was probably so sharp a contrast between good and poor animals as when these purebreds walked out upon the California plains, to be measured in the pioneer's eye beside the despised Mexican cattle.

It is hardly wonderful that the suggested contrast should have drawn gold freely from the pioneers. Gold was dirt: these animals were noble: they embodied the better things which the early Californians yearned for in a new American State, and the pioneers called to the world for them, with this result, as noted by a writer in the California Culturist, in the year already cited:

There is probably no State in the Union where more pains are taken or where money is more freely lavished upon the purchase of animals of high blood than in California.

At first there was apprehension lest the purebreds would not be hardy. Much was said then about the purebreds being pampered and

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The blood lines of the herd are unexcelled, the foundation stock having been secured from the Topnotch Herds of the Middle West. Sows of fine quality, yet big and roomy. The sort that have large litters of vigorous pigs.

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GRAND CHAMPION SOW.
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all that, without thought that the pampering is not in the breed but in the man who keeps the stock for unwise or for temporary purposes. And there were sharp debates about it. In 1859 a Butte county cattleman, who did not give his name, wrote this:

I have since 1852 been engaged in stock breeding in northern California. Shorthorn grades I have invariably found to keep in good condition upon a smaller amount of feed than any of the native or common run of stock. Last winter I had a band of Shorthorn grades, common American and a cross between them and the native stock. Of the latter kinds I lost 18 per cent by starvation; of the grades not one. Because of half-starved condition many of common cows dropped small deformed calves which died when dropped. My neighbor lost 50 per cent of his calves this spring from that cause. I have not yet lost a calf from a grade cow.

And the editor who published the foregoing added this: "If the cross of improved breeds produced a

hardier animal, we can see nothing to be gained in a continuance of native blood in ill-formed carcasses. If they do not possess even the quality of hardiness or powers of subsistence on scanty forage, we can conceive of no reason for perpetuating them."

And they were not perpetuated. They were eaten when meat was high: they were killed for hides and tallow when meat could not be sold. Out of the depression in the early '60s, which nothing survived unless it was top-crossed enough to be "Americanized," there came the common stock which this writer found here in 1875 and considered as good as the common stock of New York State—which could not have been said of any other State stock west of the Missouri river at that date. Thus was the common stock of California transformed, within two decades, so that the old could no longer be recognized, except in remote localities perhaps, by the free use of purebred progenitors.

The Horse Makes a "Counter Attack."

[By Wayne Dinsmore, Secretary Percheron Society of America.]

Columns have been written to show that horses and mules are no longer needed in war by writers whose talents should be devoted to writing best sellers a la Chambers. It may bring some of them to earth to peruse the following figures from the U. S. Bureau of Foreign Commerce:

From September 1, 1914, to June 1, 1916, the United States exported 30,411 commercial automobiles, valued at \$81,295,986.00; 69,803 passenger automobiles, valued at \$57,623,261.00, and 22,502 motorcycles, valued at \$4,202,877.00—a grand total of 122,716 motor-driven vehicles, all kinds, with a total value of \$143,122,124.00.

Against these exports, which have caused the motor-driven knights of the fountain pen to indulge in ecstatic paeans of joy, regarding the elimination of horses and mules, the

cold figures show that during the same period—September 1, 1914, to June 1, 1916—611,790 horses, valued at \$134,943,456.00, and 167,387 mules, valued at \$34,198,955.00, were exported—a total, in value, of \$169,142,411.00.

This overshadows, very handily, the total of exports of motor-driven vehicles. To the exports of horses and mules, however, we must add the exports of wagons, valued at \$2,461,611.00; and of harness and saddles, valued at \$25,739,015.00.

The grand total for horses, mules, wagons, harness and saddles, exported during the 23 months ending June 1, 1916, comes to \$197,343,037.00—almost two hundred million dollars. This exceeds the exports of motor vehicles by more than fifty-four million dollars, and is conclusive evidence that horses and mules are not back numbers in war.

WORKING AND KEEPING BUTTER IN BRINE.

To the Editor: After buttermilk has been thoroughly washed out of butter and the salt worked into it, is it then ready for the table, or is it improved by standing awhile and then pressing out the water which the salt may have caused? How is brine made for packing butter for winter use?—T. S., Calistoga.

[It will not improve your butter to break it up again after it has become hard. It will be improved though by standing till hard before using. A satisfactory brine may be made by the use of cold water and salt, using all the salt the water will dissolve. After the brine is made, sprinkle a generous amount of salt in the bottom of the jar, set the butter in the jar and fill up with the heavy brine, being sure that it covers all of the butter.]

CHEAPENING STANCHION EQUIPMENT.

[Written for Pacific Rural Press.]

Economical but sanitary dairy barn construction is of growing importance to dairymen in this State and for that reason the method of hanging the patented iron stanchions at the Laurel Dairy in San Luis Obispo county is of interest.

As running water for flushing the concrete floors was desired in this barn, a two-inch pipe was run the entire length of the building. Valves were placed at regular intervals along this pipe and clamps made from which the iron stanchions were hung.

As seen in operation this pipe supports the stanchions and at the same time furnishes a water supply the entire length of the building.

PASTURING GRAIN SORGHUMS.

To the Editor: I intend putting some steers on Egyptian corn. Would like to know the best time to put them in to fatten, and to know if it is injurious in any way.—A. A., San Ardo.

[In the San Joaquin Valley, cattle are turned into green Egyptian corn about August. No damage results. Range cattle eat stalks and all to the ground—cattle from alfalfa or feed lots waste some of it. The grain has most nourishment and fattening value when practically mature; but at that time it has withdrawn most of the value from the stalks. Be careful not to pasture any of the grain sorghums which have sprouted after being severely checked by drouth or frost.]

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California's Greatest Grade Dairy.

Eight years ago this herd averaged 350 pounds of fat yearly. Last year 80 of the cows averaged 427 pounds. This was due to purebred bulls and culling poor producers as shown by cow testing. Every dairyman in California now has a chance to increase production in the same way and gain part of \$4700 in prizes besides other trophies, by entering the California State Dairy Cow Competition.

[Written for Pacific Rural Press.]

What will 30 years of continuous breeding to purebred bulls and selection accomplish in the way of production with dairy cows? And when it is done, how can you know it definitely without weighing and testing? There are few herds of dairy cattle that have been managed in this way for so long a time.

Because of this the grade Jersey herd of John Hansen of Humboldt county is one of the most interesting and instructive examples in this or other States; for it is the result of over 30 years' continuous breeding and selection; and what is more, the exact benefits in production are shown by the records of the Fernald Cow Testing Association.

The story is told by pioneer dairymen of Humboldt county that the Van Duzer herd, this name being taken from the founder of the herd,

to give over 300 pounds of fat, and of course many of them do this. Those that don't come up to this mark are disposed of.

The original cows in the herd were low testers; and for that reason the herd sires have been selected both for the quantity and quality of milk that their dams gave. By this means the test has been greatly improved, although Mr. Hansen states that the size of his cows has been gradually reduced owing to the introduction of "island type" bulls into the herd.

Feeding.—Like all Humboldt county herds, feed plays an important part in this high production. Here is a lesson for dairymen everywhere. Mr. Hansen attributes a great deal of his success to the large variety of feeds he uses and it is doubtless due to this variety more



was originally made up of Durham cows, selected for milk rather than beef production.

Some 30 or more years ago a registered Jersey bull was purchased and the heifers from this cross proved so superior to their dams that Jersey bulls have been used ever since.

The present herd comprises 80 to 90 cows. Eighty of them produced the surprisingly large average of 427.18 pounds of butterfat during the year ending February, 1916, one 18-year-old cow producing 635 pounds of fat and none of them giving less than 301.6 pounds.

Primarily the purebred bulls have been responsible for these great records, but testing and the selection of heifers has played an important part in recent years. This is evidenced by the fact that when first entered in a local cow-testing association eight years ago, the herd average was about 350 pounds of fat yearly.

Culling after Testing.—Since then the practice has been to make two cullings of heifers, the first one being done while they are still calves and based on the producing ability of their dams. Usually 25 to 35 of these are saved each year and these are again culled over during their first lactation period for production. Provided conditions are normal, a heifer with her first calf is expected

than to climate that all cows produce more in this region than elsewhere.

From the first of March to the first of August, clover and rye grass, both as a pasture and a soiling crop, are the chief feeds, together with some cocoanut meal. By the first of August the pasture is about gone. From then, through the winter, silage made from oats and vetch or barley and vetch is fed in connection with clover and rye grass hay, cocoanut meal, carrots, and beets. The carrots are fed during August and September, followed by the beets.

Mr. Hansen thinks that most dairymen in Humboldt county do not feed well enough during the fall months when pastures become poor. He has found the silo an especially important factor at that time of the year. So much so, in fact, that he will erect the second one this year.

The morning milk is sold and distributed in Eureka; and the evening milk is separated and the cream sold to the creamery. All of the cows in the herd have passed the tuberculin test.

In almost every district there are examples of herd improvement along the same lines pursued by Mr. Hansen, but no place has the writer ever found a more definite and sure policy than is shown in the management of this herd.

Insure your feed supply against early frost and rain with

REMCO SILOS

The early cessation of the rains last spring and their unusually early opening this fall should be a warning to all feeders of livestock, especially dairymen, to no longer neglect the addition of silos to their equipment.

It is not yet too late to order a Remco silo to save your crop of corn from the frosts likely to follow the early rains, or to save your last cutting of alfalfa.

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YOUNG STOCK FOR SALE

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DAVIS,

CALIFORNIA

While this herd is the highest producing lot of grade cows in the State, so far as known, Mr. Hansen expects to further increase the average production in the future.

To the dairyman that is undecided as to the advantages of purebred

bulls and a membership in the local cow-testing association or entry into the State Dairy Cow Competition, Mr. Hansen's experience should be most enlightening. To enter the State Competition, write Prof. F. W. Woll of Univ. of California Farm.

University Hog Feeding Results.

[By T. C. Jenkins, of University Farm Agricola, Davis.]

A green feed pasture is at all times necessary for economical hog-production. Self-feeders again receive the official stamp of approval. Coconut meal is a good partial substitute for barley, with barley at present top-notch prices. Milo maize seems to have great possibilities as a fattening food, in proper feeding mixtures. Good individuals of any of the four standard lard-type breeds will "lift the mortgages of the farmer"—it is proper care and feeding that make the real differences under average conditions. With average purebreds, average attention and average amounts of feed, 220-lb. pigs are easily possibly in 7 months.

The above statements may be given as the "headlines" of the 3 months' hog-feeding experiment at the California Agricultural Experiment Station at Davis, which ended Oct. 18. Ninety-six purebred Berkshires, Poland-Chinas, Duroc-Jerseys, and Chester Whites were divided into eight lots of 12 pigs each. On July 11 these animals, then averaging a little less than 4 months in age and practically 100 lbs. in weight, were started on the test. For the last three years, hog feeding experiments with the same feeds, etc., except milo maize, have been run at the University Farm and a bulletin may soon be issued covering the whole subject after such thorough research. Ninety-eight days later one lot averaged 254 lbs., a gain of 1.56 lbs. per day at an actual cost of 6.6 cents per lb. This lot was self-feeder fed on milo maize and tankage, and allowed to run on alfalfa pasture—the best of the eight lots. At the other extreme came those 12 pigs fed soaked rolled barley, without pasture, which averaged 193 lbs., or 0.9 lb. gain per day, at a cost of 9.6 cents per lb. Where would be the profit in this last case with pork around 8½¢?

All Self-Fed Lots Won.—Self-feeders again won. The four leading pens, as judged by economy of gain, were those that looked after their own needs through the "cafeteria system," and with an alfalfa pasture at hand to obtain exercise and appetites upon. Next to the milo maize lot came that pen fed rolled barley and coconut oil meal which gained 1.29 lbs. per day at a cost of 7.3 cents. This and similar tests tend to show that this oil meal, lower than other oil meals in protein, will well supersede part of the barley ration and now may be bought for \$20 per ton as compared with barley at \$32. Its fat content is about 10 per cent and its protein 20 per cent. The other self-fed lots were given rolled barley, and rolled barley and tankage, respectively, and the pork was put on both at a cost of 7.7 cents.

The next two pens were those fed on alfalfa pasture, rolled barley, and rolled barley and shorts—which made their gains at 8.7 cents per lb. The lots unpastured were the last of all and a poor last at that.

Weight was put on at over 9 cents per lb. Rolled barley and cut green alfalfa sounds like a good ration; and it might make money during years of low barley, but the cost per pound of gain was 9.1¢. The last lot has already been mentioned, soaked rolled barley without pasture, with a cost of 9.6¢, for \$32 barley means 1.6¢ per lb. of grain and these 12 hogs ate 6 lbs. per day to put on their 0.9 lb. gain. The leading pen ate 4 pounds of maize and 0.1 pound of tankage, with pasture, to put on their gain of over 1½ lbs. at 6.6¢.

Alfalfa pasture was figured at 20¢ per pig per month. All other feeds are figured at prevailing prices to any large buyer, though of course much of the feed was produced on the 800-acre farm at Davis. The protein (muscle- and bone-making) feeds of cut green alfalfa and tankage, were figured at \$2.25 and \$42 per ton respectively. The fat- and heat-making feeds of barley, shorts, oil meal, and milo maize came at 32, 33, 20 and 30 dollars respectively. The maize, which showed up so exceptionally well in this test, will be tried again in a number of feeding experiments of the University to check these results. It is of course an important feed in California in dry land sections.

The day after the conclusion of this important feeding experiment, Prof. J. I. Thompson took over 200 outside farmers and College of Agriculture Short Course students out to the cement-floored hog barn and there explained in detail all points in the research work just ended, with the animals present.

The Western Meat Co., which always encourages such practical experiment work, then took delivery of the 96 animals, will determine the shrinking and dressing percentages and will probably pay a premium of at least ½¢ per pound because of the uniformity and grain-fed-all-the-way pork.

All animals were University bred and raised and, on the whole, the four leading breeds showed up equally well in every way. No sickness, etc., spoiled the accuracy of the trials. All feeds were mixed in the various self-feeders except the tankage, which had a separate box—as did also, of course, the appetizers of salt, sulphur, slaked lime, and charcoal.

Chopped Alfalfa vs. Alfalfa Meal.—The next hog test, this winter, will experiment with chopped, regular-length, and "mealed" alfalfa, in conjunction with barley. Many just such practical and momentous experiments are now under way for other types of market animals under supervision by Profs. True, Woll, Thompson, and Miller, assisted by Messrs. Voorhees and Royce. All such experiments are run on a three-year basis so that nothing will be finally announced officially until the data is proved time after time at the University Farm.

Revada Guernseys BRED IN THE PURPLE



Junior and Reserve Grand Champion Cow at Sacramento.

Every animal on this farm is imported, and carries the blood of such noted sires as Governor of the Chene, Sequel's Monogram, and Governor of the Gree.

HERD BULL IMP, Ricardo of Edgmoor 34367

Nothing for sale at the present time, but we are booking orders for year-old bulls out of imported dams for 1917 spring delivery.

See Our List of Winnings at the California State Fair

REVADA FARM

B. E. NIXON, Proprietor.

Yountville,

Napa County, California

Montelena Herd Large Yorkshire Swine



MONTELENA BIG DICK, First Aged Boar and Reserve Grand Champion at Sacramento.

THE IDEAL HOG
FOR THE
PROGRESSIVE FARMER.

Young Stock for Sale.
Both Sexes.

A. L. TUBBS CO.

Calistoga, Cal.

Hillcrest Stock Farm

Thornton S. Glide, Prop.

DAVIS, CAL.

Shropshire and Merino Sheep
and
Shorthorn Cattle

Shropshires sired by rams imported by me from England.

HILLCREST LAD,
Imported 1911.

SHENSTONE CAVENDISH,
Imported 1913.

Individuals and Carload Lots.
A Few Shorthorn Bulls for Sale.



HILLCREST LAD,
1st Prize State Fair, 1911.

HOPLAND STOCK FARM REGISTERED SHORTHORN BULLS

REGISTERED BERKSHIRES (Boars, Bred Sows and Glts)
HERD BOAR, ROYAL POINTER 2nd, 191092, First Prize
Senior Yearling, P. P. I. E.
3 REGISTERED HOLSTEIN BULLS from High-Testing Cows.
SAN FRANCISCO OFFICE. 1210 FLOOD BLDG.

Live Stock and Dairy Notes.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

DAIRYING AND DAIRYMEN.

The new cow testing association in territory near Patterson is ready to begin its activities.

The dairy industry in the Oakdale irrigation district has doubled within less than a year.

The combination of high prices and plenty of feed makes the dairy conditions ideal at the present time.

A. M. Smith recently made the first importations of Ayrshire blooded dairy stock into Tulare county. His herd includes four heifers and a bull.

The sum of \$25,000 was offered by Miss May Irwin and refused by C. I. Hood of Lowell, Mass., for Sophie the 19th, the world's record Jersey.

Stanford Vina Ranch recently sold from its purebred herd of Holsteins, a young bull to Clara K. Morse, Live Oak. The calf is sired by Colantha Johanna Lad.

An average of seven cents more was paid for September cream this year than last by the creameries of Kings county. The returns for the month were \$185,000.

P. B. Vantress, formerly of Danville, Contra Costa Co., has established himself in the dairy business near Live Oak. He expects to get together a herd of from 25 to 30 cows.

After a ten-year period of idleness the Alpine Evaporated Milk Co. resumed operations Oct. 4. Manager A. R. Patrick hopes to handle at the Hollister condensary plant of least 30,000 pounds of milk daily.

A shipment of high grade livestock left Goshen for Minneapolis last week, consisting of 25 head of cattle, several horses, and poultry stock. It was consigned by B. B. Scott of the Dirk Dairy Farm to the Minneapolis Holstein Ranch.

The N. H. Locke Co. of Lockeford sends us the latest record of Empress Lass in the following words: "Her record to date is 11,956.4 pounds of milk and 637.1 pounds of butterfat in 301 days. She will raise two calves within the 12 months."

Complaints reached the State Department of Health this week that tubercular cows are being sold to butchers, to be slaughtered and sold for human consumption. Dairymen, it is said, are beginning to sell off tubercular cows, knowing they will not come up to the tuberculin test required by the new milk law.

The State has "mustered into service" all dairy inspectors available through the civil service commission to carry out the provisions of the pure milk law. Another examination will be held in San Francisco, Sacramento, and Los Angeles, Nov. 4. The salary is \$4.50 per day. Candidates must be familiar with the dairy laws of the State and skilled in the testing of milk, cream, and butter.

The Gotshall Cattle Loan Co. of San Joaquin county were purchasers of a number of good Holsteins at the Hanford consignment sale which together with those purchased by them at the Rivera sale in Los Angeles county will comprise the foundation herd for their newly acquired ranch on the Stanislaus river. Mr. Gotshall states that they expect to erect modern dairy barns and silos at an early date.

F. Stenzel announces two more Junior 2-year-old records by daughters of his junior herd sire, Dutchland Pietertje Creamelle, Lady Storm Creamelle, 22.07 pounds; and Estudillo Bonnie Creamelle, 19 pounds. These, with the California champion 2-year-old record and Korndyke Ornsby, who recently made a record of 19.33 pounds gives his sire four junior 2-year-olds with records av-

eraging 21 pounds—a record hard to beat.

The cattle-raising industry in San Joaquin county looks even more attractive since the San Joaquin county exhibitors carried off many awards at the 1916 State Fair.

Dairy farmers in the Lahontan dam district are going to make this territory known as high-class producers. On Oct. 7th at Fallon was formed the Truckee-Carson Project Cow-Testing Ass'n. This for the better conditions in general in bringing out the best quality of dairying and economic feeding. Mr. A. L. Baker was elected president; vice-president, P. T. Walker, and Mr. E. R. Eichler, a graduate of University of California Agricultural School, was elected treasurer and secretary. There are already 28 members in the association, and the prospects are that many more will enter. Mr. V. E. Scott, State leader in dairying, was chairman at the meeting, and it was through his good work that Nevada and this district are coming to the front in this work.

SWINE AND SWINEMEN.

Hog raising is one of the big features on the ranches in the neighborhood of Willows. A carload of Berkshires was received recently by Robert Wilson.

The Pacific Improvement Co. of Santa Barbara have 89 head of hogs looking in fine condition, which have fed on nothing but tules for the last four months.

Turbulent times down in Old Mexico have not entirely eliminated efforts to produce pork and beef, four purebred Poland-China shoats having recently been shipped into that country from Chowchilla.

On Sept. 15 prices of sheep averaged throughout the United States \$6.25 per hundred pounds, against \$6.22 a month ago and \$5.06 a year ago. Hogs averaged \$9.22 compared with \$8.61 a month ago, and \$6.79 a year ago.

The first auction sale of Poland-Chinas ever held in California by an individual breeder will be the one held on the ranch of W. H. Browning near Woodland some time in November. All of the stock to be sold traces back to A. Wonder.

An unusually large number of hogs are reported to be going from points in the Sacramento valley to Portland and other northwestern markets. Quotations there have been considerably higher than at California points for several months.

Escalon Polly, a daughter of A. B. Humphrey's Berkshire boar, Grand Leader, was Junior Champion and reserve Grand Champion at the Oregon State Fair. She was exhibited by F. R. Steele of Grants Pass, who bought her at the Sacramento Fair.

Homer Hewins, Calistoga, Cal., has lately purchased an excellent Berkshire gilt from Winona Ranch, Grants Pass, Ore. She is a daughter of Laurel Champion out of Berryton Belle 31st, one of the first prize young herd at the 1914 Oregon State Fair.

Winona Ranch recently shipped to F. B. Glenn, Willows, Cal., the junior yearling boar Winona Champion 5th, a son of Laurel Champion out of Lady Princess Lee 3rd. This boar was third junior boar pig at the 1915 Oregon State Fair; and is already a proven sire of good pigs.

Squire Wilkerson, a colored farmer of Lompoc, has five acres in the Magdalena canyon upon which he is raising successfully over 50 hogs. He feeds them almost entirely upon hog beans, which ordinarily sell for \$10 a ton, but Mr. Wilkerson beats that. He gets just

LIVESTOCK DIRECTORY.

Rates in this directory, 2c per word each issue; or if carried weekly for one year, 3 1/2 c per word.

SWINE.

Poland Chinas.

SMITH'S POLAND-CHINAS—Sows and gilts bred to Joker, First Prize Boar at the Wisconsin State Fair, 1915. These sows and gilts, sired by Iowa Wonder, who is a son of A. Wonder, the most celebrated Poland-China boar, living or dead. Litters from this mating are the best I have ever seen anywhere. Prices low quality considered. Will sell one or a carload. As a special inducement each purchaser will be given a year's subscription to the American Swineherd, the best swine paper published and a copy of the Handbook on the Sow; also a copy of the Pig Feeders' Manual. Geo. A. Smith, Corcoran, Cal.

MAKE BIG MONEY with our big-type Poland-Chinas. Smooth, easy feeders that make greatest weight in shortest time at lowest cost, topping the market at 225 lbs. in 6 months. 300 head, both sexes, all ages, reasonable prices. Some fine bred sows and gilts, and top quality young boars. Best Eastern blood lines. Satisfaction guaranteed. Ranch in Tulare county, but address owner, E. H. Whitten, Route 5, Box 647, Los Angeles.

YOUNG POLAND CHINAS, LARGE TYPE—Boar IBA Wonder won first and Reserve Championship P. P. I. E., weighing 730 pounds under 2 years and in breeding condition. 60-day special—fine young sows bred to IBA Wonder at very low prices; also weanling pigs, either sex. Satisfaction, or money refunded. W. A. Young, Lodi, Cal.

GRAND CHAMPION SUPERBA POLANDS—A few choice spring Superba boars ready for service. Sows bred to Superbas for fall litters. Prices reasonably low. Rough's Greenfields, Arlington Station, Riverside, Cal.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated, purchased to return crates. E. A. Hall, Watsonville, Cal.

REGISTERED POLAND-CHINAS—Prolific, papulous, profitable porkers. Choice boars now ready for service, \$25 each. Weanlings, \$15. Dr. J. A. Crawford, Hanford, Cal.

LAKEIDE STOCK FARM POLAND CHINAS—are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

FOR SALE CHEAP—One registered Poland-China Boar, No. 246455, 2 years old. Fine animal. R. R. 1, Box 34, Galt, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Linn, Linview, Route A, Modesto, Cal.

POLAND-CHINAS—One type combined with quality. Choice bred sows, gilts, boars. W. D. Truitt, Box 23A, Hanford, Cal.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

POLAND CHINA HOGS FOR SALE—Registration papers furnished free. C. A. Conley, Durham, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beaman, Lodi, Cal.

FOR SALE—Five brood sows, heavy with pig to registered Poland-China boar. R. R. 1, Box 34, Galt, Cal.

FOR SALE—One young boar, one young sow, registered Poland-China. R. R. 1, Box 34, Galt, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 27A, Davis, Cal.

KNOR HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

REAOAKS RANCH herd of registered Poland-Chinas. W. J. Hanna, Gilroy.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

Berkshires.

REGISTERED BERKSHIRES—World's Fair Grand Champion at the head of the herd. Also winners of Senior, Junior and Reserve Grand Champions. Stock of all ages for sale. Grapewild Farms, A. B. Humphrey, Prosser, Escalon, San Joaquin Co., Cal.

WINONA BERKSHIRES—Won at the 1916 California State Fair and W. A. B. C. eighteen prizes, with four firsts and two championships. F. R. Steele, Winona Ranch, Route 1, A Box 105, Grants Pass, Ore.

1005 REGISTERED BERKSHIRES—Line bred Rival's Champion's Best and Masterpiece pigs, \$15 each, trios \$40. Service boars, bred sows, and gilts at reasonable prices. W. H. Waugh, Riverside, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aired Boar, etc. Frank A. Brush, Santa Rosa, Cal.

BARGAINS IN BERKSHIRES—Write today for our Special List of high-class boars and open gilts. Both the offerings and prices will please you. Silver Birch Farms, Box P. F., Newport, Wash.

REGISTERED BERKSHIRES—Closing out. One boar (Baron Premier stock) \$25. Two sows (Masterpiece stock) \$40. Eight weanlings \$22. G. Richardson, Byron, Cal.

SPECIAL—Six good service boars and a few sows in pig to Premier Leader due to farrow in October. Geo. M. York & Son, Berkshire breeders, Modesto, Cal.

REGISTERED BERKSHIRES—For sale. Bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

REGISTERED BERKSHIRES of prize-winning blood. Write for description and photos. Imperial Stock Farm, Morgan Hill, Cal.

ROSE CROFT BERKSHIRES—Riverside Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Ferris, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

BERKSHIRES—Carruthers Farms. Marfield, Cal. Second annual sale, August 3, 1917.

REGISTERED BERKSHIRES—Brood sows. Also a few gilts. G. E. Shelford, Healdsburg, Cal.

REGISTERED BERKSHIRES—Weanling pigs. \$10 each. G. A. Casey, R. 7, San Jose.

CHAS. GOODMAN—Breeder of high-class Berkshire Swine. Williams, Cal.

BERKSHIRES—Butte City Ranch, Butte City, Cal. See our ad in another column.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

Duroc-Jerseys.

DUROC JERSEYS—My hogs won highest honors at State Fair, taking first prize herd, first prize sow, second prize boar. Were the largest of their age exhibited. Stock all ages for sale. Prices reasonable. Breeding and satisfaction guaranteed. Haden Smith, Route 1, Box 84D, Woodland.

DUROCS from River Bend Farm, St. Helena, Cal., are large type, smooth, rangy, with fine backs and deep cherry color. We sell only those we'd like to keep in our herd. Don't write us if you want cheap stock.

RANCHO RUBIUS DUROCS—A few choice gilts bred for October farrowing; also good service boars, tried sow and weaned pigs, priced right. Elmer Lamb, Ceres, Cal.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money makers. They grow faster. New England California Corporation, Ripon, Cal.

DUROC JERSEYS—Herd boars. E. M. N. Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

DUROC-JERSEY SWINE—Bred gilts, open gilts, one good service boar and a few young boars for sale. T. J. Walker, Perkins, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. M. Boudier & Son, Napa.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High class pure-bred hogs, both sexes, any age.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROC JERSEY SWINE—Frederick M. Johnson, Napa, Cal.

REGISTERED DUROCS—All ages. Either sex. W. A. Pack, Hollister, Cal.

REGISTERED DUROC-JERSEY SWINE—D. I. Hensley, Lemoore, Cal.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

Other Breeds.

BILLIKEN HERD OF IMPROVED CHESTERS—Prize winners at the State Fair. The Farmer's Utility breed. Size combined with quality; producers of big uniform litters of growling pigs. 15 bred gilts due to farrow in Jan. boars and sows of spring farrows; first class and extra well developed; best blood lines obtainable; prices reasonable and every one cholera immune. Write for special prices and circulars. C. B. Cunningham, Mills, Cal.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

LARGE YORKSHIRE SWINE—Gilts to farrow in September and October. Service boars and Spring pigs. Both sexes. Riverina Farms, Paradise Road, Modesto, Cal.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millap, Yolo, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

REGISTERED IMPROVED CHESTER Whites—Grizzly Bear Ranch, East Auburn, Cal.

DAIRY CATTLE.

Holsteins.

FOR SALE—A carload of very fine registered Holstein heifers. They are sired by bulls of great producing ancestry and from dams of splendid type and large production. Some are bred to Prince Juliana Walker, a First Prize son of Prince Gelsche Walker. Several will be old enough to breed next month. Some are calves. This is a great opportunity for some one who would like to start with a small capital as they will be priced low for a quick sale. I have an extra well-bred Korndyke bull to go with them whose granddam was a former World's Record cow. Write for full information of better some and see them at once if you are looking for a real bargain. Sold subject to tuberculin test. Geo. A. Smith, Corcoran, Cal.

REGISTERED HOLSTEIN BULL CALVES—Sired by Lorena Korndyke Alcarita, whose dam made 29.75 pounds butter fat in seven days as a four-year-old. J. M. Campbell, Escalon, Cal.

REGISTERED HOLSTEINS—Grandsons of King Seara and of world's record cow Creamella Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

REGISTERED HOLSTEINS—Have a few Bulls from El Prado Wayne Colantha, whose dams and sire's dams average per cent fat at 4 years is 5.01. See my stock at the State Fair. J. W. Benoit, Route C, Modesto, Cal.

REGISTERED HOLSTEINS—Sired by King Korndyke Hengerveld Ormsby 53823. Dam Pietertje Maid Ormsby 78051, world's record when made 55.56. Send for pedigree. Geo. Kounias, Modesto, Cal.

TULARE GUERNSEY AND HOLSTEIN FARM is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Hixon, Tulare, Cal.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

THE McCLLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

A SPLENDID 8-months-old Holstein bull with good A. B. O. breeding for \$135. K. W. Abbott, Milpitas, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. MORRIS & SONS Corp., Importers and Breeders, Woodland, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chino, Cal.

SUNNYSIDE HERD—Registered Holstein cattle, R. F. Guerin, R. 3, Box 58, Visalia, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN BULLS for sale Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto, Cal.

HOLSTEIN COWS for sale with records Dr. Stetson, Napa, Cal.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Calif.

Jerseys.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3 lbs. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dea Rios, R. 2, Modesto.

VENADERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly record. Guy H. Miller, Route 1, Modesto, Cal.

JERSEY BULLS—Serviceable age. Sons of Gerlie's Lad, who has two daughters that made over 600 lbs. butter as two-year-olds. A. A. Jenkins, Tulare.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

YOUNG REGISTERED JERSEY BULL CALVES at reasonable prices. O. J. Ames, Oakdale.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

FRESH JERSEY MILK COWS for sale. E. M. Locke, Lockeford, Cal.

Other Breeds.

GUERNSEY BULL CALVES from Grand Champion Bull. Also Hampshire Swine, both sexes from Grand Champion 700-lb. boar and Grand and Junior Champion Sow. Bella Vista Herd, J. W. Henderson, 1st National Bank Bldg., Berkeley, Cal.

REGISTERED BULLS by King Kornelvik Pontiac and out of A. R. O. cows. A splendid selection old enough for service. Write or call. J. H. Harlow, Woodland, Cal.

EDGEWOOD FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgewood Farm, Santa Fe, Cal.

BREEDERS OF REGISTERED SHORT-HORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellner, Shinn, Cal.

AVRSHIRE—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Rambouillet and American Merinos both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

KAUPKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshire.

CHAS. KIMBLE—Breeder and Importer of Rambouillet. Hanford, Cal.

HORSES AND MULES.

STOCKTON PERCHERONS again winners at Sacramento. Get next brother farmer H. C. Leonard, Producer, Stockton.

REGISTERED SHIRES—Black Hawk Stock Farm Importers and Breeders, Easton & Ward, Mendocino, Eureka, Cal.

FOR SALE—Registered Percheron Stallion. Address E. I. P. Horse Ass'n, R. 5, Box 32, San Jose.

BEEF CATTLE.

FAIR OAKS RANCH WHITE, Cal.—Young registered Shorthorn bulls for sale. Sired by Landover 379318, grandson of Imported Villager 295884.

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Palmdale Ranch Co., 320 Sharon Bldg., San Francisco.

REGISTERED HERFORDS—H. H. Gable, Diamond C Ranch, Berkeley, Cal.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

RYAN NEWMAN CO., Breeders of Registered Herefords. Newman, Cal.

GEORGE WATKINSON—Breeder registered Herefords. Dublin, Cal.

SHORTHORNS—Carmuthers Farms, Mayfield, Cal.

DOGS.

THOROUGHbred SCOTCH COLLIES—All bred from our noted prize winners. Have a few 3 months old puppies—very choice. Write us what you want. Brownvale Kennels, Redwood City, Cal.

MISCELLANEOUS.

DUROCS AND GUERNSEY BULL CALVES bred to 900-lb. boar. Ed E. Johnson, Turlock, Cal.

a little poorer grade after the threshers leave the field, for only the cost of hauling. These he cooks up in a cauldron to work extra fine for his hogs.

According to Prof. J. I. Thompson, who has just returned from a trip through the Middle Western States, the large type Poland China hog is by far the most popular type of the breed. He states, though, that quality is being combined with size and believes California breeders should give more attention to this phase of breeding. He also found that in Berkshires, California ranks right up to the top in quality, giving it as his opinion that our Berkshires are as good as any he saw at the Eastern shows.

Mr. Haden Smith of Woodland has just made the following sales: Boar to Geo. Rothney of Live Oak; boar to A. W. Bihlman, Live Oak; two bred sows, J. A. Sutton, Delevan; boar, Rio Bonito Orchards Co., Butte Co.; boar, H. M. Barngrover, Santa Clara; boar, E. A. Peabody, Vacaville; bred gilt, W. A. Hevener, Arizona. He also sold his boar, H. S. Royal Colonel, No. 200,237, who took second prize at the State Fair, to H. E. Boudier of Napa. Mr. Smith believes California can raise hogs equal in size and quality to anything produced in the East.

The Southern California Duroc Jersey Breeders' Association was organized at the Riverside Fair, 1916, for the purpose of presenting the merits of the Duroc Jersey to the public, and making Southern California a center for Durocs. In localities where all concentrate on one breed, better animals are produced and better prices obtained for stock than where breeders raise a number of different breeds. A prospective buyer will go a long way to see a group of breeders all raising the same kind of hogs where he would hesitate to make the trip for one herd.

BEEF CATTLE.

Eight hundred feeders have been sent from Oregon to be fattened on the Porterville Alfalfa Company ranch at Poplar.

Stock raisers of Monterey county are realizing the value of blooded stock and are getting only the best kind for their ranches.

A shipment of four carloads of steers, eighty-two head in all, were recently made by the Porterville Alfalfa Company to Los Angeles.

Yolo county stockmen are jubilant over weather conditions believing that this coming year will establish a new record for activity in output and sales.

The drives begun to rescue some 10,000 head of cattle caught in the mountains between the Kings and San Joaquin rivers during the snow storm of two weeks ago, have been successful. Little loss was sustained.

The Gibson Estate at Woodland recently sold two registered Shorthorn bull calves to the Newhall Land and Cattle Co., of San Francisco. The first named company will show at the Portland Livestock show in November.

To develop the stock-raising industry in California the San Francisco Cattle Loan Co. has been organized, and will lend money to

stockmen to enable them to market their cattle under the most favorable conditions.

SANTA ANITA SALE.

[Written for Pacific Rural Press.]

The first annual sale of the Santa Anita Rancho was held Monday, October 23, under most favorable weather conditions. The offerings, both by the Anita Rancho and the Edgemont Holstein Farm, owned by C. W. Anderson of Burbank, were a fine lot, showing good breeding, and many of them splendid individuals. The Baldwin cattle were mostly young bulls of high breeding. There was a good crowd in attendance, but not many buyers. Col. Ben A. Rhoades cried the sale and worked hard, but failed to enthruse the crowd. Bidding was slow, especially on the bulls, which were young. They failed to bring their worth considering their breeding. One bright spot in the bull sale was Paul Johanna Nig DeKol, a short two-year-old whose sire is brother to Sadie Vale Concordia 4th Pietertje, who produced 38.43 lbs. of butter in 7 days. He went to V. W. Bailey of Imperial for \$1500. Fourteen other bulls made an average of \$171.43, and 43 cows and heifers averaged \$289. Most of the cattle were taken by near-by buyers. J. J. Jeffries of Los Angeles got 27 good cows and heifers for which he paid \$270 to \$410.

The buyers are listed below:

Bulls: V. W. Bailey, Imperial; McAlister & Sons, Chino; C. F. Noland, Los Angeles; C. R. Taylor, Pasadena; G. C. Waterhouse, Chino; C. H. Merrill, Hines; E. P. Fay, Buena Park; F. H. Dailey, Imperial; Wm. Kertrick; A. L. Kraige, Los Angeles; and Arden Dairy, El Monte.

Cows and Heifers: J. J. Jeffries, Burbank; Mr. Bowen, Pasadena; McAlister & Son, Chino; G. C. Waterhouse, Chino; B. A. Rhoades, Los Angeles; L. B. Van Blarican, El Monte; and E. P. Fay, Buena Park.

THE HOLSTEIN SALE AT HANFORD.

The California Breeders' Holstein Sale at Hanford last week was a buyers' sale. A majority of the consignors expressed disappointment at prices received, while a number of the buyers were jubilant over their bargains. The buyers were mostly local breeders and dairymen.

The top price of the sale was \$710 for Aralia De Kol Pontiac Burke, a 32-pound bull consigned by A. W. Morris & Sons. H. E. Vogel of Fresno was the purchaser. The highest price for a cow was \$500 for Rosa De Oro Sarcastic, a blue-ribbon cow consigned by T. J. Gikerson. G. H. Loughery was the buyer. The average price was a little under \$250 per head.

Among the large buyers at the sale were Gotshall Cattle Loan Co., Ripon; F. M. Helm, Fresno; H. E. Vogel, Fresno; G. H. Loughery, Tulare; and J. K. Macomber of Tipton. Frank Morris was sales manager and Col. Ben A. Rhoades of Los Angeles, auctioneer.

POLANDS AVERAGE \$37 AT HANFORD.

[Written for Pacific Rural Press.]

At the auction sale of the Kings County Poland China Breeders last week 123 head were sold for \$4,550, an average of \$37 per head. There

was a good demand for the best hogs. The sale was topped by Bassett's prize boar Gold Boy, who went to J. L. Lane of Lemoore for \$135. The highest price for a sow was received for Wm. Bernstein's Candy Kid's Equal, who was bid in by J. K. Macomber of Tipton for \$115. The hogs of Mr. Bassett's consignment bred by him averaged \$59.00. Other good averages were as follows: W. Bernstein \$51. F. D. Ross \$48. The largest buyers were G. H. Loughery, Tulare, 11 head for \$385; J. W. Guiberson, Corcoran, 10 head, \$275; J. B. Lane, Lemoore, 8 head, \$337.50; J. A. Macomber, Tipton, 4 head, \$252.50; Dimmick Bros., Lemoore, 4 head, \$300.




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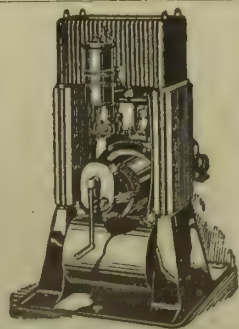
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[Answered by Dr. H. B. Wintringham, Petaluma, Cal.]

[Subscribers wishing an immediate reply should send money order for \$1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

PIGS HAD FITS.

To the Editor: Fat sleek pigs began to stagger, feet drew up, they couldn't walk, acted like having fits, mouths jerked and frothed, most of them died. Sows fat, getting milk and pasture with sunflower thicket for shade. How do measles affect pigs? What is the cause of young turkeys' crops getting so large or breaking down?—A. B., Visalia.

[Open some of the pigs and determine whether they are free from worms. Overfeeding will cause a distension and paralysis of the craw of fowls. This can be operated on by making the incision at the top of the crop, evacuating, and sowing up.]

MARE'S ANKLE SPRAINED.

To the Editor: A mare sprained her back ankle a short time ago. I kept it bound tight until she could walk fairly well, but the swelling does not go down.

The Inter-State Vaccine Co. says they can immunize a 3-day pig for life. Is this true?—E. L. I., Orland.

[Paint the ankle with tincture of iodine daily for three or four weeks. Do not know the vaccine people you refer to. Pigs can be immunized at this age but it is better policy to wait till they are weaned.]

HOGS RUN AT NOSE.

To the Editor: My hogs and those of a good many of my neighbors run at the nose, breathe hard, fall off on their feed, and sometimes die. They have a dry cough, and are sick all the way from two weeks to a year. No worms can be detected. Is it swine plague, and what can I do for it? It seems a little contagious as the suckling pigs seem to get it from the sow.—W. B. H., Riverdale.

[This is contagious pleuro-pneumonia and in a chronic form. Cures and treatments are of little use. Prevention by hygiene and sanitation are the only practical means of combating this trouble.]

MILKY FLOW FROM MARE.

To the Editor: An old mare has been losing flesh several months. She flows a milky substance almost daily. She is on dry pasture with a little hay. Has had but little to do for the past three months. Last March she had a bad cold, recovered in about three weeks, but has not been so well since.—A. T. M., Galt.

[Give this mare ½ oz. Fowler's solution and one dram fluid extract nux vomica twice a day in her feed. Douch her out daily with one gallon water containing ½ dram potassium permanganate.]

HORSE COUGHS.

To the Editor: A horse started to cough semi-occasionally nine months ago. It began to bother his breathing two weeks ago. He has had a number of spells of very hard breathing. It seems to start in his throat. When he coughs up phlegm, he doesn't cough for a long time again. Is fed sudan grass, alfalfa, oat and barley hay, and always has access to a stack of barley straw. Has grain only when working hardest. He is not poor, does not run at the nose, and never did but very little. Hangs his head very low when standing—seems very hungry all the time.—E. S. U., Hemet.

[Give this animal what he will eat. Give 10 grains potassium bichromate in solution twice a day, and keep this treatment up over a period of at least three weeks.]

FORK WOUND—HORSE SCOURS.

To the Editor: A mule was injured with a pitchfork just below and in front of her hip bone. Pus keeps flowing from it. A horse scours continually though I have tried different feeds. Seems worse when on alfalfa.—G. H. T., San Diego.

[There is a pus pocket on the mule, which must be drained. Have the horse's mouth examined and give him one-half ounce aromatic sulphuric acid in one-half bucket water twice a day.]

LUMP ON HORSE'S SHOULDER.

To the Editor: A young work horse has a knot on this shoulder caused from plowing last spring. Have worked him very little this summer, but the lump stays.—A. G., Santa Clara.

[The only way to remove this is with a knife. Consult your veterinary.]

SOW THIN, PIGS RUNTY.

To the Editor: A brood sow gets thin and pigs seem runty. Has been that way for several litters.—I. Bros., Orland.

[Have this sow tested for tuberculosis.]



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TRAPNESTS BREEDING HENS.

[Written for Pacific Rural Press.]

Trapnested hens for the breeding pen are the feature of Magnolia Poultry Farm in Riverside county. Pullets for trapnesting are selected at not less than a year old for size, vigor, mature development, shape, and for the large red comb which nearly always indicates good layers, according to Mrs. C. H. Hosford, who with her husband and the capable young Guy Wolcott, takes care of the Farm.

Only 200 to 240 of the best are trapnested, choosing the most alert and promising ones when they are beginning to lay. Only those laying 200 eggs or over are kept in the feature pen. Day-old chicks from these are sold at double the price of those from selected hens not trapnested. Last season six or seven lots of 200 to 250 each were raised from the trapnested hens. Their mothers, when seen late in September, 1916, were busy molting, but were scratching like mad in the well-littered open front house and in the orange-shaded yard. Their combs were bright red in striking contrast to the pens of many other farms seen about the same time.

The Trapnests.—Trapnests are made on the farm. They consist of boxes about a foot square and two feet long which project half way into the house which protects this lot of hens. They project half way out under an extension of the roof, under which egg-gatherers and nests are protected from wet weather. A partition across the center of each nest has a circular hole cut in it large enough to permit a hen to go through. A slatted door closes the henyard end. It slides up and down, being held up by a projecting eyelet which catches under the very short end of a stiff-trip wire. From the eyelet, this trip wire rises vertically an inch or two to the roof of the compartment and then horizontally back to the partition where it bends downward entirely across center of the circular hole. It is held in place loosely by staples into the roof.

When a hen enters the laying-compartment from the hen-yard end of the nest, she pushes the wire aside and that slips its end from under the eyelet tripping the door behind her. But her head is already in the laying-compartment, and she is not scared. The laying compartment is dark, and she stays there only long enough to lay; then goes back toward the light end of the nest without remaining to tramp and break the egg.

In September conditions, when

only a few of the hens are laying, and when the weather is cool, trapnests are opened four or five times a day; but when weather is hot, and in the heavy laying period, the hens are released every hour or two. As each hen is taken out, her number and her egg are recorded on a sheet of paper tacked to a light board which hangs by two little hooks from a wire along the house over the trap nests.

The value of the little extra work trapnesting is shown not only by the increased value of the chicks, but also by the increasing number of eggs laid to produce more chicks. In the laying contest at the San Diego Exposition Jan. 1, 1915, to Jan. 1, 1916, Mr. Hosford's pen of six White Leghorns laid 1095 eggs. This does not count Dec., 1914, when they had to be on the grounds, nor the average of 8 eggs each had laid previous to that.

QUESTIONS AND ANSWERS.

Hens Get Scared.—One hundred R. I. Red hens stay around the hen house and every once in awhile they run out as if something was after them; other times they stand bunched up and all at once they go up in the air as if a big animal had jumped among them, then they rush in the coops and peek out. They are not afraid of me, as I have to push them away when feeding, but sometimes on the hillside they go up in the air. I feed Surelay in a morning, moistened kale before them all the time, sprouted barley and wheat at night. They have wild meat chopped up and some days I cook it. The meat is squirrels, wild-cat, coon, fox, and coyote. I am only getting 12 to 14 eggs a day and I would like to know if it is the feed that causes them to act that way?—F. O. O.

[It is the smell of blood that the chickens get from the raw meat, some of it gets on the feathers and when they are standing around they smell it and their natural instinct causes them to be afraid of those animals from which the smell comes. Spray yards with distillate or oil, then give no more raw meat, but cook it. With such generous feeding as yours you ought to be getting at least fifty eggs a day.]

Vent Protrudes and Fowls Pick Themselves.—Three of my hens are troubled by the vents protruding about half an inch. This appears to be inflamed, but there is no open sore or eruption. Hens look well and have laid since this occurred. After awhile they begin picking themselves until blood is drawn. Killed two but could find nothing the matter, the vital organs appearing healthy.—E. C. B.

[Your hens have piles. Mix one part of finely powdered iodoform with twenty parts of pure vaseline and anoint the parts well, pushing the vent back in place. A few applications will cure. This is also a very fine remedy for chicken-pox, sore eyes in little chicks and ducklings. It is mild but effective.]

Breeding in Same Strain.—What will be the result and is it advisable to breed pullets to cockerel by same father but not same mother?—H. M.

[Yes, it is all right to breed pullets to father, provided you are sure this is the first case of inbreeding in the strain, and provided both are good healthy specimens, otherwise it would not be good.]

Mrs. Susan Swaysgood

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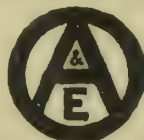
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SELECTING AND FEEDING THANKSGIVING TURKEYS.

[Written for Pacific Rural Press by Susan Swagsgood, Pomona.]

This is about the time to look up what turkeys are to be marketed for Thanksgiving. It is not quite so easy as most people think and it takes time.

All breeders should be selected from last year's young stock in preference to this. A great many folks, especially when they have stock to sell, will persuade a person that young hens are best to breed from. Well, I know better. They will lay a few more eggs undoubtedly, but the baby turks will be neither so strong nor so large. A good yearling male, hatched early and showing good vigor, is all right; but he must be able to lead the band, and be in fact "cock of the walk"; if he ever walks alone or behind the band and only spreads his feathers when

the leader is not watching, turn him into a pot roast.

Set aside only the very likeliest of the turks to hold over for another year's breeders, for in this way only can you always have plenty of good two-year hens for breeding.

Then choose the most forward of the market stock for Thanksgiving. Separate them from the younger and smaller birds and give them a better chance to grow.

Now make the most of what turks are ready to prepare for thanksgiving. If they have been sleeping out let them still do so—no cramming into close, stuffy buildings. Just set up a couple of high rails, the higher the better, and then protect them with wire so fixed that they cannot fly over. A good way is to fasten stakes from the fence posts leaning in, then fasten wire netting one foot or 18 inches wide and two-inch mesh on these stakes; the bird tries to fly over and strikes that wire. He will not repeat it many times.

For the first few days after putting the birds in a fence, it is better to give very little feed of any kind, have grit and shell handy and a little beefscrap in hoppers. Turkeys will not stand feeding high very long unless plenty of green feed is at their disposal. So at first, get them used to confinement. About the fourth day a kettle of boiled vegetables with corn meal mixed in after the vegetables are cooked will be relished. Then boiled corn and other grains; all cooked food is easier to digest than uncooked, and that is why it proves a better diet for fattening turkeys.

The first thing that ails a turkey, and I might truly say the last, is indigestion. This indigestion is the root and stock of all their troubles and it is brought on among the domesticated turkeys by over-feeding and wrong feeding.

So even when we are fattening, the feed must be of such a character as they can digest. Warm mashers are more easily digested than raw corn. Some folks think a corn-fed hog and a corn-fed turkey are the greatest of good eats, but I like hog meat that has been fattened on peas and beans in preference to the corn. Corn when fed whole is a very hard thing to digest. If fed at all it should be fed at night when the birds have all night to digest it in, but if the corn is boiled it will fatten much easier because every bit of it will be used up by the digestive tract. If you are in the habit of feeding whole corn, just try it boiled for one season to fatten your turks and see how many more pounds of good turkey flesh you can produce with the same amount of feed plus a little fuel and time.

POULTRY NOTES.

Considerable interest is manifest in the second annual State Poultry Show to be held at Modesto Dec. 6 to 9.

To perfect the organization of State poultry growers on the plans laid down by Harris Weinstock, State Market Director, it will be necessary to secure the one million hens by the first of the year. At the present time three-fourths of the number have signed up.

Chas. H. Vodden's winnings on Barred Plymouth Rocks at the San Jose big Auditorium poultry show last week were as follows: First and second cockerel, first and third ex-



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FOR SALE—White Leghorn pullets. Brooder stove (Kresky) distillate burner. Splendid condition. Reasonable. Mrs. R. D. Kellogg, Richfield.

EASTMAN'S REED TO LAY Barred Plymouth Rocks, Chicks, Eggs, Cockerels. Fairmead Poultry Farm, Fairmead, Cal.

WHITE WYANDOTTES—Blue-ribbon winners. Eggs \$2 to \$5. Chicks, pullets, cockerels R. W. Strawtski Route 2 San Jose Cal

HIGH GRADE ANCONAS—Fancy and utility. Settings, \$3.50. Fertility guaranteed. J. R. Bell Livermore, Cal

SICILIAN BUTTERCUP hens and pullets, fancy and utility, for sale. Fine stock at reasonable prices. M. S. Woodhams, San Mateo, Cal

DAY-OLD CHICKS—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal

CHICKENS, DUCKS, GEESE, GUINEAS—Pea Fowl, Pigeons. Wm. A. French, 548 W. Park St., Stockton, Cal.

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ONE PAIR Plumaged Golden Pheasants. T. D. Morris, Agua Caliente, Cal.

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hibition pen, second cock, second and third pullets, second and third hens, also winning the Championship Trophy for the best Barred Rock in the show and the Sweepstakes Special for the best display.

A permanent organization of the

poultry, pigeon and pet stock breeders of Fresno county has been effected. The purpose of the association is to encourage fancy and utility breeding, and to work for betterment of the conditions governing poultry production.

Mrs. Best's Letter.

My Dear Friends:

With the approach of the rainy season, raincoats seem important articles of the wardrobe and there are some new and attractive models in the stores.

The loose ulster of cravenetted material in either brown or gray is always good and has the advantage of being suitable for wear at other times than in the pouring rain. It makes a very good coat for machine wear, and being cut usually on conservative lines can be worn indefinitely.

The more dressy coats are many of them made of taffeta silk in either checks or stripes and have a thin lining of rubber. These are very good looking garments, but have not been on the market long enough to be proven a success. There is danger of rubber applied in that manner cracking when laid away, thus making the garment useless another winter.

The most attractive of all the coats I saw though, was a silver grey silk poplin lined with rubber, cut on generous lines and having a high storm collar that was extended into a circular cape that came down over the shoulders. This coat, although utilitarian in purpose, had a dash and style you do not find in a raincoat.

Still another type of coat is the thin rubber one in light shades that is transparent and very light in weight. In one of the stores, it is called the gelatine coat, on account of its transparency and color.

With these coats, the girls wear the soft cloth hats that have been so popular with the men and do not carry an umbrella at all. There is a cunning little sailor shown made of black shiny material similar to oil cloth that is both good looking and weatherproof.

Reports from the East are that skirts are surely growing longer, but the stores here are still making them nearly to the shoe tops for slight people. Let us hope that our rainy season will be over before we have them flapping down around our ankles.

Rosabella Best.

KITCHEN HELPS.

There is a paste on the market for cleaning silver that is considered better than the old-time powder.

When frying potatoes, try chopping with empty baking powder can instead of knife. It is handy and much quicker.

Hot lard can be tested to see if it is at the right heat by putting in a small piece of bread. If it browns immediately, the lard is hot enough for frying.

In laundering muslin or lace curtains much better results are obtained if the curtains have been soaked in several changes of cold water before they are washed.

Enamel bathtubs and basins are quickly and easily cleaned with a cloth saturated in gasoline. Kerosene will answer, but necessitates washing again with soap and water.

To prevent cake from burning when using new tins, butter the new tins well and place them in a moderate oven for fifteen minutes. After this, there will be no danger of the cake burning in them.

THE HOME CIRCLE

THE NEW PATCHWORK.

Those of us who possess an applique patch-work quilt of our grandmothers are fortunate indeed now that applique is so popular in the fancy work line. The work a generation ago was done with wonderfully fine invisible stitches, but now it is more popular to buttonhole the patches into place.

Quilts of attractive patterns are used for bedspreads; and dresser scarfs, laundry bags, curtains and couch covers have the same design used.

To have an effective bedroom of this type, there should be a plain wall-color, rag rugs on the floor and Colonial furniture.

The foundation for this work is generally sateen or heavy cotton goods in white or cream and the same material in colors for the design.

CHRISTMAS SUGGESTIONS.

A cap, muff and scarf set made of the crushed plush makes a most acceptable and attractive gift for a young lady and can be made at home by anyone clever with the needle. The scarf should be about seven inches wide and about five feet long. The ends can be finished with a tassel or with a ball of the same material, stuffed with cotton. The muff should be small and fat, as that is the prevailing style. These should be lined with a pretty color silk as well as the padding. The style of the cap should depend upon what use it will have. For machine use, a cap the shape of the knitted ones would be pretty, but for street wear, a toque effect would be better and for those a buckram frame can be the foundation.

CACTUS FRUIT AS A SALAD.

Editor Home Circle: Select ripe cactus fruit, peel and cut into cubes, flavor with salt and a generous portion of vinegar; let stand about ten minutes then add a rich mayonnaise dressing. Make this up about 2 hours before serving. Just before serving wash some crisp lettuce leaves and serve salad on a bed of lettuce. This salad your palate will ne'er forget.

Another way to serve this dish is to peel the fruit and cut into cubes, then add tomatoes cut up into small pieces (add onions to this if liked), salt, pepper, oil and vinegar. Let stand two hours before serving.—Mrs. W. E. J., Sacramento.

HOUSEHOLD RECIPES.

Cheese Crackers.—Butter thin crackers, place on pan and cover well with grated cheese. Bake in the oven until the cheese is melted and a delicate brown.

Sandwich Butter.—Pour into a deep earthenware basin $\frac{1}{2}$ cup boiling milk and 1 cup cold milk. Add 1 pound fresh butter, broken into little bits. Beat this compound with an egg beater until it has reached the consistency of a thick cream. This is the ground material to which may be added different flavors, before spreading it between thin slices of bread. To prepare anchovy but-

ter, wash the anchovies well and soak in water for an hour. Then grind or mince very fine and mix with the butter. For green butter, take a handful of parsley and chive, mince well, add a little spinach juice and mix with the butter, adding a little salt and pepper.

For fairy sandwiches, add powdered sugar, either vanilla or rose water to the butter; beat well together and spread between thin slices of fine bread.

A HOME-MADE FIRELESS COOKER.

The principle of a fireless cooker is the conservation of either heat or cold and that principle can be worked out at home in a home-made contrivance as well as in a ready-made. For the box, use either redwood or pine lumber one inch thick and hinge the cover and use rollers to insure ease in moving the cooker about. The size of the box will be determined by the size and number of compartments. There must be at least a space of two inches around the compartments to be packed with asbestos.

The metal frame can be constructed of aluminum, galvanized sheeting or zinc. Aluminum is the most desirable as it wears well and does not rust readily. Zinc is easily formed into shape and a straight, galvanized pail with cover can be made to answer, but tin is unsatisfactory, because it rusts so badly.

Radiators or heating plates are used to lengthen the time of cooking. They are of soapstone or iron and can be purchased from firms selling fireless cookers. A good substitute is a flat, circular stone. This must be wound with wire so that it can be lifted after it is hot. If there are three radiators, two dishes of food may be baked at one time, by placing a radiator at the bottom and also at the top, with the third in between the dishes.

The utensils for fireless cookers can be purchased, but almost every housekeeper has articles that could be utilized.

FRESHENING THE BEDROOM.

If the daughter of the household longs for new furniture for her bedroom and is unable to procure it, let me tell you how we solved that problem. In the first place, as the bedroom was occupied by one person alone we decided to do away with the bed and use instead a single bed couch that can be purchased for \$5.00. This makes a very comfortable bed by night and a good looking couch by day. The bureau, table and two chairs that comprised the rest of the furniture, we painted with a good white paint, and while they would not compare favorably with high-priced enameled furniture, they were fresh and attractive looking.

The walls we tinted a pretty shade of blue and bought a pretty cut-out design of paper to use as a border under the picture molding.

In melting chocolate, always butter the pan to avoid waste.

Floral Department.

[By Geo. N. Tyler.]

Keep on putting in cuttings of anything you think will root. Do not delay with your bulb planting, as the soil is in ideal condition right now, owing to the early rains.

Fertilize.—You can also dress your lawns and flower beds with half-rotted manure, or if you think your soil is rich enough, you can put on an application of hydrated lime. Make the ground white with it and then hoe and rake it in, the later rains will do the rest. The lime will release a great deal of fertilizer, making it available for plant food. It will also sweeten the soil, if it is at all acid or sour. Repeated dressings of manure make the soil acid. If you have any doubts about the soil get some blue litmus paper from the drug store, and where the soil is moist make a hole and put in the small piece of paper, fill in with moist soil and leave one end of the paper sticking out. After ten or fifteen minutes take up the paper and if it has turned red it is a sure sign that the soil is acid and sour. In that case lime it.

Glasshouses.—All shadings should now be off the glass in small greenhouses and conservatories, but watch the plants carefully and do not let them go wilting dry—for they will dry out much quicker with the shade off. Give your house plants more sun from now on and less water. All plants have to rest at some stage of their growth, and the winter months is the best time for resting.

Roses are liable to be affected with mildew this kind of weather. A good remedy is permanganate of potash, one tablespoonful to two gallons of water. It will generally clean them up in one application, but give a second in a week if you see any signs left.

Weeds are beginning to sprout now. Hoe or rake the ground while they are small and it will save you a lot of work later.

Pansies.—I am now preparing my pansy beds for planting the small plants from seeds sown in middle August. I spade deep and then give about one and one-half inches of cow manure from a corral. This is not rotted, but I pulverize it very fine. After spreading I give a good watering and in a day or two spade the soil and manure again about four inches deep, working it well into the top soil. After a week, I put in the small plants; they have six to ten leaves. If you follow this method you will have no trouble to pick three-inch, and even larger, flowers in the spring.

HINTS TO HOUSEKEEPERS.

When a decanter becomes so discolored inside that shot or pebbles will not cleanse it, fill with finely chopped potato parings, cork tightly and let stand for three days. At the end of that time, empty and rinse in warm water.

Jewelry can be beautifully cleaned by washing it in warm water to which a good white soap has been added and a few drops of ammonia and then shaking off the water and laying the jewelry in a box of fine sawdust. This method leaves no marks or scratches.

A LONG-LEIT WANT.

One day wee Willie and his dog
Sprawled on the nursery floor.
He had a florist's catalogue,
And turned the pages o'er.

Till all at once he gave a spring.
"Hurrah!" he cried with joy:
"Mamma, here's just the very thing
To give your little boy!

"For when we fellows go to school
We lose our things, you know;
And in that little vestibule
They do get mixed up so.

"And, as you often say you can't
Take care of 'em for me,
Why don't you buy a rubber plant
and an umbrella tree?"

—St. Nicholas.

A MODEL WEDDING.

Clara and Nellie were chattering like magpies about a wedding to which they were invited, when grandmother suddenly dropped her knitting, with the air of having something of importance to say, as she asked,—

"Is it to be a fashionable church wedding?"

"Yes, yes," they cried in chorus, "a satin gown with a long train, and a lovely veil, a bridesmaid, and a flower-girl, and garlands of flowers each side of the centre aisle, and"—

"Now, see here, girls," grandmother interrupted, "let me tell you of a wedding, the best that ever was, and without one of these folderols, not one."

The girls eagerly assented, and grandmother began reminiscently:—

"It was long, long ago. The bride was the eldest of a large family and

an every-day helper to her mother. Her father was a minister, and the bridegroom was a minister, too, seeking his first parish.

"He had preached as a candidate in a distant parish, and while awaiting the verdict had gone to visit the girl to whom he had been engaged a year and whom he had not seen in several months. She was busy as usual, and when ironing-day came round she was ready for the task, not a small one either, with ten in the family. She had barely begun when the young minister came to the table with an open letter in his hand, and in a voice trembling with eagerness said: 'I have just received a call to the church which gave me such a favorable impression, and they wish me to begin my work next Sunday. In order to do so I must go at once, as it is quite a journey, and—and—I think we should be married before I go. Your father, fortunately, is at home this morning'—

"But why in such a hurry?" broke in the startled girl.

"Because one of their first questions is, if I have a wife, and I wish to say that I have, as I can if we are married now."

"But we are married," the girl insisted, "spiritually married, and no mere ceremony can make us more so. Besides, I have friends who expect, of course, to come to my wedding, and I want them to come."

"I am sorry to disappoint them and you, but, my dear, I cannot begin my ministry with a subterfuge."

"That settled it. The girl put her flat-iron on the stove, threw off her white apron, glanced in the mirror to smooth down her curly hair and peep at the pink and white gingham dress which she had made herself, and which was fresh and clean that morning. She went into the parlor, where the family had collected, being told of the young man's wish and the need of haste. The father married them, while his voice trembled, and tears were in his eyes, and tears were rolling down the face of her mother.

"After the family had all kissed the bride and shaken hands with the new son and brother, he had to make haste to catch the only train due that day, and the bride went back to her ironing.

"Before the young husband returned she had cut and made the lovely silk gown intended for the wedding and which now would do duty in the many receptions awaiting her. The gingham dress was used in the parsonage kitchen, but after fifty-three years of a continually happy married life she regretted that she had not saved it as an object-lesson to her girl friends, to convince them that it does not need fuss and feathers to make a true marriage."

Grandmother's trembling voice was silent, and her old eyes were filled with tears. The girls could restrain themselves no longer, but, hugging and kissing her, Clara cried:—

"O grandmother, that was your wedding, we just know it was; and it was perfectly lovely, too!"

Nellie added: "Oh, how I wish we had that dear little gingham dress! Why, we ourselves might be married in it some day, who knows?"—Christian Register.



When Nature Turns Outlaw

"Blow, winds, and crack your cheeks! rage! blow!—
Your cataracts and hurricanoes, spout"

Thus King Lear, in Shakespeare's tragedy, defies the elements. But man, even today, cannot challenge nature with impunity.

The unsinkable ship goes down like a rock from the impact of an iceberg. The fireproof building is burned. The monument, built for unborn generations, is riven by lightning or shaken down by an earthquake.

There are storms which make train service impossible, which delay the mails and which close the public highways to the usual traffic. Even in the cities there are times when the street cars do not run, and neither automobiles nor horse-drawn vehicles can be driven through floods or high-piled snowdrifts.


Such conditions increase the dependence on telephone wires, which themselves are not exempt from the same natural hazards. Fortunately, however, the Bell System has faced these dangers and well-nigh overcome them. Masses of wires are buried underground and lonely pole lines, even the most stoutly built, are practically paralleled by other lines to which their business can be transferred.

Each year the lines are stronger and the guardians of the wires are prepared to make repairs more quickly. So each year increasing millions of subscribers find their telephones more dependable and, within the limits of human power, they count upon their use in storm as well as in fair weather.



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Write us (Dept. AA) for free copy of "The Styleplus Book."

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Freight prepaid to your nearest station. Beaver Board, Bear Board, Wall Board, \$37.50 per 1000 sq. ft.

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Good Health.

(By H. E. Pastor, M. D.)

Doping the Baby.

Mothers and nurses should be studiously careful never to give opiates in any form to infants or small children. Opiates are not always labeled as such. The proprietary medicines sold as soothing syrups and cordials almost invariably contain some opium, which if administered to children stunts their mentality, brings about serious derangements of digestion, and tends to establish the habit of constipation. Such nostrums are positively dangerous. The desire to pacify a fretful child or to lull to sleep one that is wakeful, is a strong temptation to a tired nurse or overworked mother to resort to the use of a doped preparation to secure respite and rest. But a peace thus brought about, it has happened more than once, has

been of the everlasting kind. Even when this disastrous result has not ensued, the lesser ills referred to are more than likely to follow. No conscientious mother will thus hazard the life or health of her child, and no nurse should be permitted to. What has been said of soothing syrups is largely true of cough mixtures, also. When the bronchial tubes of an afflicted child are clogged with the sticky secretion of a respiratory ailment, dislodgment by coughing is Nature's safeguard against the complete closure of the air passages. It is better to employ treatment that will diminish the mucous discharge by relieving the congestion rather than to deaden with drugs the sensibility of the bronchial nerves and smother the child by its own unexpelled secretions. Opium has its legitimate uses, but the doping of children is not one of them.

Who Are the Long-Lived.

Serbia the stricken is pre-eminently the land of centenarians. She boasts one such in every 2,260 inhabitants. Ireland comes next, with one centenarian in every 8,130 of her people. Spain, Norway, the British Isles, France, Sweden, Germany and Denmark rank in the order named. Switzerland, the land of tourist resorts, hasn't one according to the last returns. These figures, of course, indicate the condition of Europe's longevity under normal conditions. Centenarian prospects are not brilliant at the present writing. Simple habits and lack of the strenuous life, as well as climatic adaptation of peoples in old settled countries, doubtless accounts for examples of extreme longevity in some of the countries mentioned. America has few of these promotives to longevity, so far as most of its white population is concerned, except, perhaps, in some isolated sections, so the centenarian ratio is not high. Natural conditions in California are conducive to prolonged life, and some notable instances are on record. Generally speaking, however, the strenuousness of typical American life, lack of moderate outdoor exercise, over-eating, overdrinking, and undersleeping—these things militate against good health, and cut short the natural span of human life. Live temperately if you would live long; and long life is worth striving for, for when you die, you are dead for a long while, as our Gallic cousin says.

Confections vs. Medicine.

The following fruit and nut confection, taken from Farmers' Bulletin 712, School Lunches, is here given for its medicinal value as a laxative. Children are very prone to constipation, and any substitute for drug medication should be favored. 1 pound figs, 1 pound dried prunes or seedless raisins, 1 pound nut meats, confectioners' sugar. This provides twenty-four two-ounce portions.

Wash, pick over, and stem the fruits and put them with the nut meats through a meat chopper, and mix thoroughly. Roll out to a thickness of about one-half inch on a board dredged with confectioners' sugar, and cut into small pieces. If this candy is to be kept for some time, the pieces should be separated by means of paraffin paper.

WINCHESTER

RIFLE AND PISTOL CARTRIDGES

When you go to buy cartridges for your rifle or pistol, you want to consider that you're buying something "sight unseen." In other words, "you don't know what's in 'em." That's the very reason why you should buy a reliable make. The reputation of Winchester cartridges is sufficient for you. They are always reliable. They are made for all kinds of rifles and pistols, and you'll be sure to get this celebrated make if you ask for

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30x3	8.95	1.85	2.10
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31x3 1/2	9.45	2.15	2.40
32x3 1/2	9.95	2.25	2.45
34x3 1/2	10.95	2.30	2.55
36x3 1/2	12.05	2.40	2.75
30x4	13.20	2.80	3.10
31x4	13.85	2.85	3.20
32x4	14.05	2.95	3.30
33x4	14.70	3.10	3.40
34x4	14.95	3.15	3.50
35x4	15.05	3.20	3.60
36x4	15.85	3.30	3.70
34x4 1/2	20.25	3.85	4.35
35x4 1/2	20.85	3.95	4.45
36x4 1/2	21.25	4.10	4.60
37x4 1/2	21.90	4.15	4.60
35x5	23.05	4.70	5.20
36x5	23.95	4.90	5.35
37x5	24.90	4.95	5.45

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Dealers Everywhere
STANDARD OIL COMPANY
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For best results use PEARL OIL



SAN FRANCISCO.

San Francisco, Oct. 25, 1916.

WHEAT.

Export business in the East is surpassing all records, and the sensational advance has been reflected in Coast markets, local spot prices for all grades being considerably higher. In fact, very little is offered at the figures quoted, though buyers are unwilling to pay more.

[First-hand prices on strictly first-class grain, San Francisco.]
Sonora wheat\$2.25@2.30
Northern club2.30@2.35
Calif. club, ctl.2.25@2.30
Northern Bluestem2.60@2.65
Northern Red2.55@2.60

BARLEY.

The strength of wheat is reflected to some extent in the barley market, but it is also affected by large export shipments from this port, and prospects of a better rail movement East. Prices have advanced sharply.
Shipping, ctl.\$1.90@1.95
Choice feed, ctl.1.85@1.90

OATS.

The upward movement in other lines has had little effect on oats, though white are higher on account of scarcity, and red feed are in good demand. Texas red seed, said to be immune to rust, is in strong demand.
Red feed\$1.80@1.85
Red seed2.15@2.30
White1.75@1.80
Black seed3.00@3.25
Texas Red seed2.40@2.50

CORN.

Egyptian is in good demand, and first-class grain is higher, though there is a good deal of inferior stuff offering at low and irregular prices. [First-hand prices on strictly first-class grain, San Francisco.]
Eastern Yellow, ctl.\$2.10@2.15
Milo MaizeNominal
Egyptian, new1.90@2.00

BEANS.

The bean situation has not eased off, but on the contrary is stronger than ever, with all offerings closely held and an active demand for most grades at a further advance. Local dealers report the damage in the river district less than was expected, but very heavy loss to the small whites in the south. While the situation looks very firm at present, the market is rather sensitive with prices at such a high level, and there is no assurance that these figures will hold, as consuming demand is being curtailed in many quarters.
[First-hand prices, on wharf, San Francisco.]

Bayos, per ctl\$5.90@5.25
Blackeyes4.40@4.60
Cranberry beans5.00@5.20
Horse beans3.25@3.50
Small Whites (south) new crop7.50@8.00
Large Whites, new crop7.50@7.75
Pinks5.25@5.50
Limas (south)5.50@5.75
Red Kidney6.50@7.50
Mexican Reds6.25@6.75
Tepary beans4.25@4.50

HAY.

It is still very difficult to get cars at most hay shipping points, and arrivals here continue very light. The demand in the city is exceptionally quiet, however, and the shortage has caused little difficulty; though this, with the fact that most of the hay is now coming from warehouses, has caused a rather sharp advance on most lines, and the market is firm. Dealers complain of the bad condition of considerable hay that was in the fields during the rain. Alfalfa is moving well at the old figures, and stock hay is higher, notwithstanding the improvement in feed conditions. Straw is again higher. Country trade is reported brisk.
[Wholesale prices per ton, carload lots, San Francisco.]

Wheat, No. 1\$14.50@16.50
No. 212.00@14.00
Tame oats12.50@16.50
Wild oats11.00@13.50
Barley12.00@13.50
Alfalfa10.00@14.50
Stock hay9.50@11.00
Straw, per bale50¢@.70

POTATOES, ONIONS, VEGETABLES.

Potato crops in many parts of the country are short, and Oregon stock has advanced sharply, with little offered here. This has been reflected in Delta stock, which can no longer be had below \$1.75. Salinas potatoes also are higher, and rather closely cleaned up. Sweet potatoes are slightly easier. Onions all over the Coast are now well out of growers hands, and closely held at a further advance. Celery is now going out in large quantities from the Delta district, and the crop is said to be the largest on record. Lima beans are higher; otherwise the general garden truck situation shows little change.

Celery, Alameda, bunch10¢
Cucumbers, lug50¢@75¢
String Beans20¢@3¢
Lima Beans30¢@4¢
Summer Squash, lugs50¢@75¢
Eggplant, lugs30¢@40¢
Peas, lb6¢@8¢
Tomatoes, lugs35¢@50¢
Rhubarb, lugs75¢@1.00
Potatoes, ctl., Delta\$1.75@2.10
Salinas2.35
Sweet Potatoes, per ctl.1.60@1.75
Onions2.25@2.50
Garlic, new crop, per lb3¢@5¢

POULTRY.

Turkeys are coming in rather freely, and as there is so far no great demand the price is easier. Young roosters also are slightly lower, and the market in general shows little strength, as arrivals of Eastern stock are keeping the market well supplied.

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

Turkeys, live, lb. young, large. 23@25c
Old, large22@24c
Broilers, 18 lbs. to doz. and less, lb.26@23c
do, over 18 lbs. to doz.22@23c
Fryers20@22c
Hens, extra, per lb., colored20c
Small leghorn15@17c
Smooth Young Roosters, per lb. (3 lbs. and over)20@21c
Squabs, per lb35¢@40¢
Geese, per lb14¢@15¢
Ducks14¢@15¢
Old13¢@14¢
Belgian Hares11¢@12¢

BUTTER.

A slight reaction has occurred in the local dairy produce situation, though butter is still much higher than last year, foreign buying having curtailed the supply for storage. Arrivals are fairly large, with only the local demand to meet.

	Thurs.	Fri.	Sat.	Mon.	Tu.	Wed.
Extra	33	33	32	32 1/2	32 1/2	32
Prime 1sts	32	31 1/2	31 1/2	31 1/2	31 1/2	31 1/2
Firsts	31 1/2	31 1/2	31	31	31	31

EGGS.

The egg market is standing about even, with slight fluctuations according to supply and demand. While production is limited, it is keeping up fairly well for this season, and there is no outside demand. The recent advance, moreover, has turned the demand strongly to storage stock.

	Thurs.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	48	46 1/2	47 1/2	48 1/2	48	47 1/2
Sel. Pul.	43	40 1/2	41 1/2	42	41 1/2	40 1/2

CHEESE.

Demand has dropped off a little this week, causing recessions in all grades. [S. F. Dairy Exchange prices.]

Y. A. fancy17 1/2¢
Fancy Calif. Flats, per lb16¢
Monterey Cheese14¢@16¢

DECIDUOUS FRUITS.

The last fortnight has brought a marked revival of the apple market, with heavy buying by speculators from many quarters. Some very large sales have been made for shipment to England, as well as for Eastern markets, and local interests also have been taking hold in good shape, taking most of the crop out of first hands. This applies mostly to Newtowns, which are moving at 80¢ in carloads, the street price being unchanged. Bellflowers are higher. Bartlett pears are cleaned up. Other fruits stand about as before. Berries are firmer on diminishing receipts, and grapes are steady locally. The Emperor crop has turned out much better than was expected, and dealers are taking care of shipping orders in good shape, the business being very active.

[Wholesale prices, San Francisco.]
Huckleberries, lb., fancy10¢@11¢
off grade8¢@8c
Strawberries, chest\$4.00@7.00
Cranberries, Cape Cod, bbl.9.30@9.50
Apples:
Bellflower, box75¢@85¢
Jonathans85¢@1.00
Newtown85¢@1.00
Pears, Winter Nellis1.25@1.75
Persimmons, box, dbl. layer75¢@1.00
Pomegranates, lug1.00
Quinces, lug40¢@.50
Figs, Cal. black box, double layer75¢@.85
White, single layer60¢@.75
Casabas, crate75¢@1.25
Watermelons, doz.1.50@2.00
Grapes, Malaga, lug75¢@1.00
Muscat, lug75¢@1.00
Tokay, lug75¢@1.00
Black, lug75¢@1.00

DRIED FRUITS.

The dried fruit situation shows little change this week, the market remaining strong and active, with offerings rapidly moving out of growers' hands in many districts. There is a good consuming demand all over the country, as well as a fair movement for export, and buyers show more willingness to take hold in a speculative way, notwithstanding the rather high prices in many lines. Apples are cleaning up in good shape, and few apricots can now be had in the country. Figs also are getting very scarce. Local buyers appear quite willing to take pears now at a 6¢ basis, though the 6 1/2¢ basis is only for scarce sizes. Pears are firm, and are getting more attention. The Associated Raisin Com-

pany has announced that full deliveries will be made on early orders, and has put out a list of advanced prices on layers and clusters.
[Net to growers, bulk basis, f. o. b. shipping point.]

Apples, new crop6 1/2¢@7¢
Apricots, per lb. 191614¢@15¢
Figs, white, 1916None offered
Figs, blk5¢@5 1/2¢
Callimyrnas, 1916None offered
Prunes, 4-size basis, '166¢@6 1/2¢
Pears6 1/2¢@7¢
Peaches: Standard yellow6¢
Muirs6 1/2¢

HOPS.

It has been impossible to get the prices asked a few weeks ago for any large quantity of the new hops, and a number of sales have been made at the lower prices appearing below, though many growers are still holding.
Sacramento11¢@12¢
Mendocino11¢@13 1/2¢

HONEY.

Several cars of comb honey have recently arrived from Nevada, giving the local trade an ample supply for the present, and prices have weakened a little on water white and amber. Extracted honey, however, is very firm, with a good local demand, and supplies in the country are said to be well cleaned up.
Water white, comb13¢@14¢
Light Amber10¢@12¢
Amber8¢@9¢
Water white, extracted8¢@9¢
Light amber6¢@7¢
Dark4¢@4 1/2¢

HORSES.

At the Horst ranch sale at Wheatland, last week, only 150 mules were put up, and went to scattered country buyers at an average price of about \$90 per head. There were 300 horses sold, most of them being taken by local dealers, bringing about \$60 on the average. A few of the better ones, 1400 to 1500 lbs., brought about \$135. The stock was all in poor shape, owing to shortage of feed, and most of it was unbroke, which accounts for the low prices.

The local market is still slow, and stock received here gets little attention. Another local stable is selling out this week. Few heavy drafters are appearing. Military buyers have recently purchased a large lot of mules in the San Joaquin Valley, and local buyers have also picked up many horses for this purpose, paying about \$150 for good stock.
Drafters, 1700 lbs and up250
Drafters, 1550 to 1650 lbs150@200
Chunks, 1350 to 1500 lbs150@175
Wagon horses 1050 to 1350 lbs 110@150
Green Mountain range horses, 950 to 1200 lbs20¢@75

HIDES.

Steers20 1/2¢@21 1/2¢
Cows20 1/2¢@21 1/2¢
Light hides, 25 to 48 lbs.20 1/2¢@21 1/2¢
Kip23¢@24¢
Calf and veal31¢@32¢
Dry Hides32 1/2¢@33 1/2¢
Dry Kip35¢@36¢
Dry Veal and Calf38¢@42¢
Pelts, long wool\$1.75@1.90
Short wool85¢@1.10
Horse hides, wet, large, ea.5.00@5.50
dry, large3.00@3.50

GROCERIES.

Flour has again advanced sharply, being quoted at \$8.80 to \$9 per bbl. and sugar is up to \$7.70 per ctl. Lard and oil are higher. Several lines of canned vegetables are about cleaned up, and salmon also has advanced sharply.

PETROLEUM.

The Standard Oil Company has announced a slight advance on case prices of gasoline, kerosene, distillate, etc., bulk prices being unchanged.
Red Crown Gasoline, drums, etc., per gal.19¢
Red Crown Gasoline, cases, per gal.27¢
Engine Distillate, drums, etc., per gal.9 1/2¢
Engine Distillate, cases, per gal. 17 1/2¢
Pearl oil, bulk, per gal.9¢
Pearl oil, cases, per gal.17¢
Zerolene, lt., med., heavy, bbls., per gal.40¢
Zerolene heavy duty oil, bbls., per gal.50¢
cases, per gal.60¢

LOS ANGELES.

Los Angeles, Oct. 24, 1916.

BUTTER.

Receipts California by rail for week ending Tuesday, October 24:
1916255,600 lbs.
1915246,846 lbs.

There was nothing new in this market the past week. Receipts were again light, but about equal to the current wants of the trade. It was a steady 33c market throughout the week. On Tuesday on 'change there were several sales of extra creamery made at 33 1/2¢ but the market closed at 33c.

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
1916	33	33	34	33	33	33
1915	26	26	26	26	26	26

EGGS.

Receipts by rail as reported to the Produce Exchange for week ending Tuesday, Oct. 24:
1916-677 cases.
1915-743 cases.

There has been a sharp break in this market since our last review. Prices had gotten so high that the trade refused to take hold save in an indifferent kind of way. Then, too, San Francisco broke 2c up to Friday which had its influence upon this market. The result was prices here up to Saturday broke 3c on hen eggs and 5c on pullets and no special demand at this decline. Tuesday the market lost another cent, closing at 44¢ for case count and no buyers. Railroad receipts for the week, 677 cases, and estimated by truck, 700 cases, total 1377 cases; against 2077 cases by rail and truck same time last year.
Fresh ranch case count48c
Pullets40c
Daily quotations on 'Change:

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
1916	48	50	50	50	50	48
1915	40	40	40	40	40	40

POULTRY.

Increased receipts of young stuff drawn in the past week by the high prices quoted in our last, caused a draggy market for broilers and fryers, though prices are unchanged. Heavy hens steady and in good demand. Light hens dull. Ducks and turkeys are moving a little more freely at steady prices. Geese dull.

Broilers, 1 1/2 to 2 lbs.24¢@25¢
Fryers, 2 1/2 to 3 lbs.20¢@22¢
Hens, over 4 lbs.19¢@20¢
Hens under 4 lbs.15¢@16¢
Ducks14¢@15¢
Geese18¢
Roosters, 3 lbs. up (soft bones) 20¢
Turkeys, heavy, 12 lbs. and up. 21¢@22¢
Turkeys, light16¢@18¢
Squabs, live, per doz.\$1.50@3.00
Dressed3.75@4.85

Not so much coming in and demand fair. Receipts for the week 103 cars. Under lighter offerings alfalfa has been advanced \$1.00 per ton and straw 50¢ per ton. Barley and oat hay unchanged.

(F. o. b. Los Angeles.)
Barley hay\$14.00@16.00
Oat16.00@18.00
Alfalfa, Northern14.00@15.00
Alfalfa, local18.00@17.00
Straw7.50@8.00

WALNUTS.

Since the clearing up of the weather walnuts have been coming in quite freely. The receipts the past week have run over 175 cars. The California Walnut Growers' Association say that it is pretty well sold up. They are filling their orders as fast as they can shape their walnuts up.

The associated prices this year and last are:

	1916	1915
No. 1	\$15.50	\$13.60
No. 2	12.50	10.60
Budded	19.00	17.00
Jumbos	17.50	16.00

Orchard run 3c per pound less.

SPECIAL DECIDUOUS REPORT

Sacramento, Oct. 24, 1916.

Continued favorable weather is extremely beneficial to the fruit interests in that grapes slightly affected by the recent rains have dried out in some cases sufficiently to risk marketing on cleaning up, account berries being over-ripe and soft.

Some disappointment is shown in the quality of Emperors from certain districts and the keg and drum pack will probably not turn out as heavy as was originally expected on account of the quality, though the crate output may increase.

Second crop Tokays are carrying remarkably well, the color in most cases being better than the first crop. The demand on all varieties continues active, thus on account of the Eastern grapes being short in some districts and the demand from the grape juice factories in excess of the supply. California's grape season will wind up with higher prices than for several years.

The following prices have ruled for the week:

New York-Tokay grapes averaged \$1.55; Malaga, \$1.40; Cornichon, \$1.55; Clairgeau pears, \$2.85.
Chicago-Malaga grapes averaged \$1.45; Tokay, \$1.67; Cornichon, \$1.84.
Boston-Tokay grapes, \$1.97; Malaga, \$1.62; Cornichon, \$2.15.
Total shipments to Oct. 24, 15,753 cars; total shipments same date 1915, 14,459 cars.

Special Citrus Market Report.

Los Angeles, Oct. 24, 1916.

There was a further improvement in the markets east the past week. The lateness of the season and light offerings and the falling off in the receipts of deciduous fruits favored the orange people and enabled them to get more money for good stock. Lemons too sold very well and brought higher prices. Locally the market continues quiet. A fair call was had for desirable sizes at 2@3 1/2¢ per pound for Valencia in the grove; and lemons 1 1/2¢@2c in the grove. No new oranges in yet and none looked for until next month. But it will not be long before Tulare county growers will be giving us some early navels.

FROM AUCTION SALES.

New York, Oct. 20, 1916.-Six cars of Valencia and one car of lemons sold. Market unchanged. Weather fair. Valencia averaged \$3.35@6.20; lemons averaged \$4.25@4.95.

Boston, Oct. 20.-Three cars sold. Market is doing better. Valencia averaged \$4.35@5.60.

Philadelphia, Oct. 20.-Three cars sold. Market continues strong on oranges and unchanged on lemons. Valencia averaged \$4.60@6.00; lemons, selected, \$4.40.

New York, Oct. 23.-Thirteen cars of Valencia and one car of lemons sold. Oranges strong and slightly higher on small sizes. Lemons slightly higher. Weather fair. Valencia averaged \$3.50@7.25; lemons \$5.75@6.85.

Boston, Oct. 23.-Five cars sold. Market strong and higher. Valencia averaged \$4.60@5.25; lemons \$4.15@5.25.

Philadelphia, Oct. 23.-Four cars sold. Market strong and higher on oranges; unchanged on lemons. Valencia averaged \$4.55@5.75; lemons, \$3.35@4.35.

Special Livestock Market Report.

San Francisco, Oct. 25.

CATTLE are firm with a prospective advance on steers; but cows are so plentiful that they may not hold present prices.

[Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.]

Steers, No. 1	6 1/2 @ 7 c
No. 2	5 1/2 @ 6 c
Cows and Heifers	5 @ 5 1/2 c
No. 2	4 @ 4 1/2 c
Bulls and Stags	4 @ 4 1/2 c
Calves, light	7 @ 8 1/2 c
Medium	7 @ 7 1/2 c
Heavy	6 @ 6 1/2 c

HOG offerings are lighter but enough to meet requirements, except the light-weights which are marked up a quarter. Being mostly off the stubble and grain fed, condemnations for tuberculosis are only 2 or 3 per cent as against a much higher proportion a few months ago when only dairy hogs were coming. The University of Cal. shipped a carload of hogs which had been fed three months on various rations, to the Western Meat Co., who will report the dressed percentages of each of the nine lots.

Hogs, grain-fed:

150 to 160 lbs.	8 c
160 to 250 lbs.	8 1/2 c
250 to 325 lbs.	8 1/2 c

SHEEP show no change, though lambs are becoming scarcer as the season advances.

Prime Wethers 6 1/2 @ 7 c

Spring Lambs, f. o. b. country points \$5.25 @ 5.75

WOOL of the fall clip has been cleaned up around Cloverdale at 18-20 cents, our 7 months Mendocino quotations having been wrongly printed last week. Fall clips of the Red Bluff mountain district are moving at 16-17 cents, higher than our previous quotations. Eastern markets are strong and the Australian prices are good for good wools, weak on poor grades.

Red Bluff, year's 25 @ 27 c

Mountain, fall 16 @ 17 c

Sacramento Valley, year's 19 @ 25 c

Mendocino, year's 31 @ 32 c

Mendocino, fall 18 @ 20 c

Southern, year's 18 @ 21 c

Southern, 7 months' 13 @ 16 c

Southern, fall 9 @ 11 c

Imperial Valley, year's 17 @ 19 c

Imperial Valley, 7 mos. 14 @ 15 c

Nevada 21 @ 23 c

Fall wool 10 @ 20 c

Los Angeles, Oct. 24, 1916.

CATTLE.—There is no change to note in this market from a week ago. Killers were all in the market and there was a fair demand for all good to prime beef steers and fat cows and

heifers. California and Arizona continue to give us most of the supply and some very good grass cattle.

Quotations are f. o. b. Los Angeles:

Beef steers, prime, 1000 to 1100 lbs.	\$7.00 @ 7.75
Stockers and feeders	5.50 @ 6.00
Prime cows and heifers	6.25 @ 6.50
Good cows and heifers	6.00 @ 6.25

HOGS.—The market holds up very well. Receipts not heavy and what hogs coming in meeting with very ready sale. California furnished most of the supply and the offerings were of very good quality. Idaho hogs continue to go east. Killers here are enabled to get what hogs they need nearer home.

We quote per cwt. f. o. b. Los Angeles:

Heavy, averaging 250 @ 300 lbs.	\$8.50 @ 9.00
Mixed, 200 @ 250	9.00 @ 9.25
Light, 175 @ 200	9.00 @ 9.25

SHEEP.—Good and rather firm market was had the past week. Offerings were not heavy and killers all wanted supplies. Heavy muttons and lambs both met with a ready sale and old quotations were fully sustained.

We quote per head f. o. b. Los Angeles:

Prime wethers	\$7.00 @ 7.25
Prime ewes	6.50 @ 6.75
Yearlings	6.50 @ 7.00
Lambs	6.50 @ 7.00

CALVES.—Market steady and demand fair for all offerings. Selling at \$8.50 to \$9.50.

North Portland, Ore., Oct. 23, 1916.

CATTLE.—Over 1500 head of cattle were received this morning. Best steers were sold for 6.85, while several loads of good steers went at 6.75, with other good loads going at 6.25 to 6.60. Cow tops were 6.00, with some good cows selling from 5.00 to 5.50. Heifers brought 5.50, bulls 4.25 to 4.50. Stockers and feeders were in good demand, best steers 5.50 to 6.00, with a number of calves at 7.00.

HOGS.—There was a very good run of hogs this morning, 3600 head went over the scales today. A few loads sold at 9.35 for tops, with several loads of good prime hogs going at 9.25 to 9.30. Prime hogs were in good demand and moved early, other stuff moved rather slow.

SHEEP.—There were more sheep in the yards this morning than there has been for some time, over 2900 being received. Packers were very liberal and a few loads of lambs brought 8.75, twenty-five cents over last week. Wethers 7.00, ewes 5.50. Demand is very good.

worth from your paper every week."—E. M. Shaw, Grass Valley.

Classified Advertisements

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PRODUCER TO CONSUMER—Alfalfa meal, alfalfa hay, oat hay, honey, beans, Gyp corn, sorghum molasses, etc.—what do you need? O. L. Linn, Marketing Agent Stanislaus County Farmers' Union, Modesto, Cal.

APPLES DIRECT FROM PRODUCER—Fancy grade, bulk pack. Bellefleur, 75c per box; Newtown Pippins, 85c; Missouri Pippins, \$1. No. 2 grade, 60c. Edward A. Hall, R. F. D. 1, Watsonville, Cal.

LIVING EXPENSES REDUCED THROUGH CO-OPERATIVE BUYING—Write for catalogue and particulars. Pacific Co-operative League, D236 Commercial St., S. F.

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WANTED.

DAIRY FOREMAN WANTED, who can take charge of dairy ranch of 309 acres, 155 acres in alfalfa. At present milking five strings of cows. State salary expected, references, etc. Address P. O. Box 626, Stockton, Cal.

WANTED—Thoroughly competent man on a ranch to milk ten cows, raise calves and make butter once a week. Apply P. O. Box 34, Menlo Park.

WANTED—Young men and women to attend the Western Normal Courses—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A." Western Normal, 524 E. Market St., Stockton, Cal.

WANTED POSITION as working foreman by absolutely reliable Japanese orchardist with year's experience and agricultural college education. First-class recommendations. Box 240, Rural Press.

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FOR SALE—In Tulare county, 2 1/4 miles from Visalia, county seat. 155 acres, improved. Finest stock and dairy ranch in county. Part in bearing orchard. For close price, terms and particulars, write owner. C. C. Thompson, Box 401, Visalia, Cal.

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SEED POTATOES—The largest field of Burbank, certified under State inspection in California; also Certified American Wonder and high-grade Oregon Seed, Garnet Chili and others. References: Acting State Horticultural Commissioner, Mr. Geo. P. Weldon, W. V. Shear of Stockton, and the Pajaro Valley National Bank of Watsonville. This stock will go fast, and would advise your writing early. H. A. Hyde, Watsonville, Cal.

RHUBARB—Now is the time for planting rhubarb. \$1324.00 from one-fifth acre in eighteen months from planting. Write me and I will tell you how you can do as well. J. M. Stone, Lodi, R. D. 4.

WALNUTS—Eureka, XXX Mayette, San Jose Mayette, Franquette, and Concord on Northern Black Root. Sizes 3-4 ft. to 8-12 ft. Write for prices. Ekstein Nurseries, Modesto, Cal.

MISSION OLIVE TREES—Raised from my own bearing trees. This is the only sure way to get what one wants. W. A. Hayne, Box 461, Marysville.

WALNUT TREES—Franquette, Mayette and Mammoth on Black Root; also Grafting Wood and Black Seedling Trees. Lowest prices. Mammoth Walnut Nurseries, Watsonville, Cal.

QUALITY TREES—Seedlings, 6c. Prunes, 10c. Walnuts, 30c. Cash Nurseries & Seed Store, Sebastopol, Cal.

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Publisher's Department.

It is with sadness that many of our readers will learn of the death of A. H. Knox, from heart failure, at Palo Alto, his home, on Tuesday, Oct. 17. Mr. Knox had been employed for years in our subscription department, and was known over the greater part of the State. He was a man of great energy and force of character, honest and capable, and withal kindly and generous in thought. The whole Rural Press force join with his many friends in expressing sympathy to his wife and family in their great loss.

Read our market reports every week. They are gotten up for the benefit of our subscribers and we believe them reliable. Every effort is made to have them up-to-date and as accurate as possible. If you spend only two minutes a week in reading up on the special line of products you raise, the value in keeping posted will prove very great.

New subscribers are being added to our list regularly and collections on renewals are quite heavy at this time—which proves that farmers generally are prosperous throughout the State.

At this time of the year our books, "California Vegetables" and "California Flowers," both by Prof. Wickson, should be in your home, ready for instant and constant reference. Both of these books are very practical and go into detail on the everyday problems of the subjects they cover. Send to this office for them. Prices are: for "Vegetables" \$2 postpaid, and "Flowers" \$1.50 postpaid.

Here is what one subscriber to the Pacific Rural Press writes us: "It represents agricultural journalism carried to the Nth power. The low price of one dollar would seem to simply cover mailing expenses—the paper is a gift to the subscribers.—Alfred R. Eastman, Turlock.

"Will say with hundreds of others that I more than get my money's

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SAN FRANCISCO

NOVEMBER 4, 1916.

LOS ANGELES



HERE are a number of high schools in the State now doing exceptionally good work in agriculture,—such, for example, as Pasadena, Gardena, Bakersfield, Lemoore, and Kerman. There were sixty-eight high schools teaching agriculture last year and undoubtedly a great many more will be doing agricultural work when the records are compiled this year.

"Those High Schools having the most livestock of their own are Gardena and Bakersfield. Pasadena has poultry and a couple of good dairy cows. Riverside is contemplating buying some purebred livestock, but I think have not purchased as yet. From these, I believe, you should get the information that you wish regarding the work of the schools and livestock owners."

So wrote Prof. W. G. Hummel of the University of Cal. in September; but data had already been obtained regarding the school at Gardena.

Read the following extracts from a letter written from Montana by two Los Angeles city boys in September, 1916, to Prof. J. B. Lillard of Gardena Agricultural High School, from which they graduated last spring:

"Harvest is just over, and fall seeding is in full sway. We both worked on threshing outfits and found plenty of hard work, which we enjoyed, not being used to it. We were pitching bundles and driving bundle wagons.

"Before harvesting, in-between, and after, we rounded up about 90 head of range cattle, branding and vaccinating their calves. We also cut the bull calves, which are going to be made into baby beeves. About 30 of the old cows are to be dehorned and fattened for the Chicago market. Range cattle are not dehorned, as cattlemen say it lessens their vitality. But in sending fat cattle to market, they are worth \$5 to \$10 more, if dehorned.

"We are on a 1515-acre typical Montana stock and grain ranch, seven miles from the nearest town. Getting lots of experience running the binder, mower, rake, manure-spreader, gang plow, disk, and seeder. Most of these are pulled by 4 to 6 mares.

"Mares are used exclusively as work animals, and raise a colt every year. We have a 1650-pound black Percheron stallion that is getting some mighty fine colts. The horse colts are not cut until two years old, as they say it makes a better shaped and thicker neck for a work horse.

"Delbert Kirchenschlager and A. E. Moore."

You will notice that the boys are seeing things agriculturally, are learning why, and are noting the marketing end of ranching. Their parents are among the city folks who support Gardena Agricultural High School for the primary purpose of training boys and girls for country life, and for the secondary purpose of giving them, as well as the Gardena children, whatever of the usual upper-grade and High School studies they need.

Faculty.—Prof. Lillard, who has had charge of the school since the establishment of the agricultural course in 1910, was raised on a Santa

City Boys and Girls Make Good Farmers.

How an Agricultural High School Molds City Boys and Girls into Up-to-date, Wideawake Farmers and Happy, Useful Prospective Farmers' Wives.

[Written for Pacific Rural Press.]

Barbara county ranch, has owned a farm all his life, and owns one now in Ventura county. He has the real agricultural viewpoint, and modern agricultural appearance. The other agricultural instructors are chosen for special agricultural experience and teaching ability. They include Messrs. Terry, Graham, and Minear.

Student Cafeteria.—Miss Anna Leland, vice-principal of the school who has charge of the hundred or more girls in the Home Economics Department, is just the sort to appeal to girls, and she is an enthusiast in her work. We found her supervising a dozen girls of about a dozen years each, canning tomatoes which the Department had bought at market prices from the Agricultural Department. They put up 10 boxes of tomatoes that day in two-quart glass jars, to be used in the school cafeteria next winter along with 45 dozen quarts of peaches and tomatoes already canned by students and stored away.

This is claimed by Prof. Lillard to be the first High School in California to have a complete cafeteria entirely run by students in their own Home Economics building. Students do all the cooking, serving, etc., in regulation cafeteria style, except that not until now did they have a large dining room available. Other students support the cooks loyally, by eating their noon lunches there. Everything is bought at market prices, and student patrons are charged enough to just pay expenses. The cafeteria has been running five years. Among the stored supplies, we noted several sacks of walnuts bought from the "Farm," having been raised on border trees.

Of the sewing, tailoring, drawing, and other feminine classes, we could write better if we were feminines, so we hasten back to the Farm.

Equipment includes 19½ acres, a two-story central building, twin brick buildings about 56x200 feet, one for Farm Mechanics, the other for Domestic Science, a modern bungalow just completed for domestic science work, lath houses, potting shed, and greenhouse, a milking barn 40x60 feet including hay storage, oiled corrals and open cow shed, a modernly equipped dairy house, small new horse barn at a distance, a new 600-hen laying house, a cement incubator cellar covered by a brooder house, a blacksmith shop, and numerous others.

Students have built all these structures except the bungalows and main school buildings. They have done the blacksmithing, plumbing, painting, most of the carpentering, and other work. A silo is one of this year's plans, to be built by the boys.

The fields this year include alfalfa, corn, beets, orchard and vegetables, and newly acquired athletic field of 4½ acres on which hay was raised this year and which was being flooded by the boys for leveling purposes when we saw it this fall. The orchard contains "no two of a

(Continued on page 491.)



Buildings Put Up and Animals Judged by Students of Gardena Agricultural High School. All the Work is Thoroughly Practical. Girls' work in Cooking, Sewing, Serving, Etc., Receives Special Attention. A Student Cafeteria is Supplied from the Farm and Operated Entirely by the Students.

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Member Audit Bureau of Circulation.

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EDITORIALS

THE COUNTRY WILL BE SAFE!

THIS is the last week of the presidential election disturbance of public affairs and there will be a lot of people delighted to throw off the guise of guf and bluff with which they have concealed themselves for several months past. There probably never has been a presidential campaign in which there were so few issues and so many issues, and it is really joyful now to think how soon one can comb the webs off his face, as he does when he emerges from spider-infested shrubbery. It will probably not make a particle's difference to anybody who is elected president unless he has hopes of being rewarded for political services to one side or the other. There are, of course, tremendous issues pending in the world, and this country will have to secure its own place in the sun by the blasting of some aerial bombs among the clouds which will gather, but these issues so far transcend the political problems of the past that no man can foresee what they will be and therefore cannot prescribe any formula for their settlement. If we had a Joseph of the Hebrews among us in this Egyptian darkness, we might stand some chance of learning what our dreams should be and the interpretation of them—but we find no Joseph among the candidates. The future must be full of intellectual strife, for the world is too sick of the other kind to pursue it farther. In this coming strife the whole world will be alert to seek for everlasting principles of humanity's rights as a basis for attitudes and actions. In this strife the United States will have the vantage ground in that it has less to forget and repent of. Besides it is each day becoming more clear that the ideals which shone in the eyes of the founders of this republic, and toward the attainment of which their descendants have been resolutely advancing for nearly one hundred and fifty years, are really the ideals of human rights and relations upon which the world must reform itself. These ideals, and the approaches to them, are the personal property of no man nor the political property of any party of men: they dwell in the hearts and consciences of the whole American people. They constitute the "genius of America," as it is rightly named. As coming questions are of this transcendent character they will be answered, not by any man or set of men, but the collective convictions of the American people. The coming four years will be the greatest referendum-period this country has ever experienced. Every man who tries to do a thing of wide import will endeavor to get his finger on the national pulse and will be trying to plunge his diagnostic thermometer into every deep crevice in the body politic. Therefore it seems to us of particularly little moment which of the two great men, who will be voted for next week, is chosen. He will of himself originate little or nothing. He will catch the keynote of prevailing American sentiment or he will sing a swan's song for his own greatness. This is an ideal condition in a government for and by the people. We are about to realize it as never before. The country will be safe and it will save the world.

WESTWARD, HO!—FOR CALIFORNIA.

IT IS now pretty clear that California will have the greatest winter in all its history, in the eyes of the American people who come for winter luxury and for less ostentatious home-seeking. Eastern people have their pockets as full of money as the San Francisco banks are of gold—that is, more than either ever had before. These people are, therefore, fixed for winter-touring and for home-buying as they have not been in any earlier year. Eastern people who have recently come among us say that we can have no idea from our own affairs of the abundance and wide distribution of money on the other side of the Rocky Mountains—that the tide of prosperity has not yet reached the western rim of the continent. We have been mildly prosperous, surely, and what more there is in store for us we shall know this winter. The battle-fields of Europe are still too hot for tourists' inspection: the flood of travel must come this way. The railroad men who take pains to forecast popular movements assure us that the passenger traffic across the continent will be immense, and they are preparing for it. One rather novel phase of it will be special trains of automobilists, each accompanied by a special baggage-train bringing their favorite motors for long runs upon our new State highways. F. D. Cloud, manager of the Tourist Association, in speaking of the innovation, said:

"Our object in undertaking this enterprise is to demonstrate to as many Eastern motorists as possible that California is an ideal touring region at a season of the year when it is impossible to derive any pleasure or comfort from automobiling on the Atlantic seaboard or in the Middle West. We want to show them what 'blossom time' in California really means and let them contrast a California March with the March weather of the East. We desire, also, to introduce them to our new system of paved highways which makes automobiling in California a real pleasure at all times, whether winter or summer. And we know that once Eastern people get a taste of the joy and comfort of touring in California during the winter and the spring months, not only will they return another season, but will bring their friends with them."

And the beauty of all this is that the joys of the highway belong not alone to the sumptuous motor-tourists of the idle-rich class, but to all the people, whether they go in cars which furnish their own music, like the tin-peddler's wagons of the last century, or in juggernauts which only murmur the music of the spheres. And all these people will soon see that a winter outing in an all-the-year motoring country is but a sample of the joy of living in it.

WHOLESALE CALIFORNIA CLIMATE.

THINKING of the joys of sky, of mountain-set and sea-rolled landscapes and of climate and geography generally, reminds us of the nursery convention of Santa Barbara, which we had the pleasure of attending, as noted last week. It was a fine assembly of California plant-lovers and merchants in a most delightful environment of beauty, natural and acquired, and of men and women wise, companionable and accomplished. The members of the guild resident in the Santa Barbara region were generous and unwearying in welcome to their guests from other parts of the State, and every one who participated in the meetings must have grown in appreciation of natural beauty of plant, mountain, and sea, and in joy in their creation into the mankind line of being. Perhaps the feature of discussion and transaction which impressed us most was the dawn of vastly greater opportunity than usually discerned in translating the climatic and soil conditions of California into terms of plants and bulbs for American sale instead of similar supplies from Europe and the Orient. Much has been planned and less accomplished in this line for years past, but it has not been undertaken in a masterly way, though some Eastern distributors have maintained California-growing branches of their individual businesses. It came out at the Santa Barbara convention, in a discussion led by C. W. Ward, whose great enterprise at Eureka is already well known to our readers, that while growing conditions and their superior product have been amply demonstrated, California producers have been so handicapped by unfavorable classifications, carload requirements, and rates that large movement to the East to displace importations is

either prevented or unfairly circumstanced. It was shown that some of the obstructions on the rail routes really cancelled the tariff which importers had to pay, and gave the American producer a protection which did not protect, because of the unwisdom of the railway associations, which prevented competition with Eastern importers. Mr. Ward's statement and his individual efforts to get fair treatment for his California product commanded marked attention from the convention. Allied thereto was the report of Mr. Meriwether of Fresno, concerning discriminations against California nurserymen in other particulars. All these matters were earnestly discussed, and a call upon popular interest and support was made in order that duly impressive appeal might be made to the traffic associations to secure fair treatment for home-grown plants and bulbs which should receive the widest possible distribution to the American planting trade. Mr. Ward's wide experience and success in national plant distribution commended him strongly to the convention, and older California growers were impressed with the fact that by working together with the people, a new page in California commercial horticulture might be opened widely. Surely, transportation requirements should not limit the beneficent distribution of California climate throughout this country in the form of California-grown florist stock in the largest possible quantities.

* * *

DOINGS OF THE NURSERYMEN.

NATURALLY most of the proceedings of a three-day convention of a craft or guild must be of internal rather than general interest. Many lessons and suggestions of the assembly will reach the public in the form of more and better plants, and thus they will confer a public benefit. It is, however, of public interest that the presidency of J. S. Armstrong of Ontario was faithfully and acceptably discharged and was for the general good. It was in anticipation of a continuation of such service that Leonard Coates of Morgan Hill was chosen to the presidency for the coming year. Mr. Coates merits this distinction in recognition of his long career as a California plantsman and his many contributions to the progress of California horticulture in all its branches. H. W. Kruckeberg of Los Angeles was of course re-elected Secretary-Treasurer, for it is largely to his devotion and industry that the association owes its internal life-processes and its public career through the elegant annual publication of its proceedings. San Jose was chosen as the place of the next convention, and thus the nurserymen of 1917 will return to the place where their predecessors manifested greatest activity more than 60 years ago.

One of the features of the meeting of last week which commanded keenest interest on the part of the public was the wild flower exhortation and demonstration, by Theodore Payne of Los Angeles. Mr. Payne has made himself a leader in the conservation of California's natural plant beauty, and his efforts are making for the joy and patriotism of all coming Californians.

* * *

FAKED FARMING FIGURES.

THE advertising department of this journal usually keeps its own morals brightly polished, and as it has a lot of them to look after, it is surely to be credited with commendable vigilance. Once in a while, however, it seems to need professional advice on a moral question, and, as the editor is the only moral philosopher with a diploma in the outfit, the qualms of the advertising conscience are occasionally referred to us. In this case it was an advertiser who desired to induce people to buy a start with certain medicinal plants by emblazoning a declaration that the planter could make several thousand dollars per acre per year when the plants were duly established. Our advice to the advertising department was this: "Cut out the declaration of promised profits; advertise the plants, because that much is legitimate, and some people may like to try them." Later, we were informed that the intending advertiser would demonstrate on his own place that the figure named in his advertisement was not more than half what could be made on the crop, and that other writers were going to feature his crop and we could come along. We did not accept

the invitation, because we had not questioned the truth of the man's statement of his own experience, and it is not there that the danger of misleading people lies. It is in the generalization that the crop will yield other planters several thousands dollars per acre. There are several reasons why it cannot do that: First, if the crop is generally and successfully grown it cannot be sold for any such money, and perhaps not for any profit at all, because of the large quantity available. Second, if not salable to medicine makers it is a total loss because the grower can neither eat it nor feed it to stock. Third, if large returns are made for a small quantity, it is because it grows well only under certain conditions, or with great skill, or with a large amount of labor or other expense. Fourth, if the grower gets several thousand dollars per acre for what he can grow, why does he want to peddle out plants to others who, if they can grow it at all, will not only keep him, but themselves also, from getting any such acre-returns as he wishes to advertise. It will, of course, occur to anyone that the only kind of a man who could rationally wish to increase such a product at the loss of his own production must be a man who wishes to buy the crop for less than he can grow it. If, for instance, he should be a medicine maker, it would be good business for him to promote growing, and sell plants for all to start with, because the more there is grown the less he would have to pay for his raw material. That is legitimate enough, but it is not legitimate to advertise it in connection with a possible return which the very promotion effort may make impossible.

OUR MORAL CODE.
WE HAVE no space to codify all our morals, but this will be one section when we do it. It is not legitimate to advertise anything, even with a basis of fact, when in general experience that basis cannot exist. The promise of an unreasonable acre-product of anything is therefore immoral. It is doubly wrong to advertise a promise, even if it is based on a fact, when the very promotive effort itself makes it impossible for that fact to longer exist, even in the experience of the most skillful and best circumstanced. We do not care what other writers may do in promulgating unreasonable expectations; it will not induce us to take a hand at it. Even if our conscience were not so hot our common sense would save us. Our readers are too intelligent to be blinded by any such glare and glitter. There are others who are perhaps more gullible, and, judging by the new ways which are now brazenly invading the good, old, conservative field of farm journalism, there must be others. There must be a lot of near-farming readers, who do their agriculture under their reading-lamps, who may be electrified by the "oh, my!" stories of unreasonable profits from farm crops, which quasi-economic and pseudo-scientific writers are constructing for them, but we would not enter that line of publication if there were millions in it. The plain truth about farming and reasonable anticipations of profit therein are the only things a self-respecting journal can set forth, and a promise of several thousand dollars from an acre of land is neither plain truth nor reasonable anticipation.

Treating Bad Tree Trunks.
 To the Editor: What treatment would you recommend to stop the decay in the trunks of old prune trees, where they have been sunburned or where large branches have split off? Would tar applied to the affected parts answer? If so, can it be applied hot?—E. A., St. Helena.
 Chisel, gouge or scrape out all the rotten wood down to a hard bottom. Paint the excavation with hot coal tar and, where you get a cavity which will hold it, fill with Portland cement and smooth the edges so that new bark from the sides can grow over. Do not extend the hot coal tar treatment over live bark and do not apply so much that it will run down.
"Prune Rust" on Peach.
 To the Editor: What is wrong with the peach leaves which I send? What has caused it and what can I do for it?—C. N. G., Anaheim.
 The leaves are attacked by the fungus commonly called "prune rust" (puccinia pruni) which attacks almonds, plums, apricots and peaches. It is seen as dusty brownish pustules on the under sides of the leaves and is very seldom destructive enough to require treatment. It seems to be more troublesome in nursery stock than in open plantings. It usually comes on late after the leaves have finished their chief season's work, though there was once quite a visitation in the spring on apricots in Ventura county in which the disease seemed to carry over on peach leaves which were somewhat active all winter, but this is unusual. Winter spraying with Bordeaux or lime-sulphur will clean the trees and be protective against spring infection.

By
the Editor

QUERIES AND REPLIES

Inquirers Must
Give Full Name
and Address.

A Close Schedule.
 To the Editor: I have sixty acres on which I intend to build up a poultry plant, keeping about 30 to 50 sheep in addition. I want to plant to cut down the feed bill next season—something which will not require expensive harvesting machinery. For the sheep I will plant about fifteen acres vetch and rye pasturage this winter and spring, with a similar acreage sudan grass next summer, using the same ground to colonize the poultry. What plants can I sow this fall to harvest early enough in the spring to get in a crop of milo, the fall crop to be for poultry use? I have considered planting some field peas, but believe it rather late to get these in now. Grain would ripen too late for my purposes.—J. L. L., Menlo Park.
 Unless you have a very low frosty place peas ought to give you plenty of green forage and green peas in February or March. Cabbage, rape, stock beets, etc., would also give you green feed. We do not think of any grain or seed which would stand frost and get in ahead of barley, and you will have to buy grain for the hens. But the vetch and rye ought to green-feed the fowls as well as the sheep, so you may not gain much by the other garden crops mentioned. Ripening grain or seeds to replace it is not a California winter attribute which can be counted on in your part of the State.
Killing Big Weeds.
 To the Editor: Is there any treatment known to kill out "lupus" weeds without digging large and deep holes?—E. J., St. Helena.
 We do not at this moment know what a "lupus" weed is, but if it is good Latin, it means some kind of a wolf-like creature. Presumably it has a big tap root, from what you say about digging. All such plants known to us can be killed by making a little hollow around the top of the root and pouring in gasoline—from a tablespoonful to a half teacupful, according to the size of the monster. It may seem an expensive treatment at present prices, but it will cost less than digging a "big hole." But usually a tap root cut a foot below the surface is done for. Why not try that?
Feeding Sudan Grass.
 To the Editor: Please tell me whether sudan grass is hard on the soil or not. After the seed begins to ripen, will it hurt stock to feed on it? I was told by a neighbor, who was told by another person, that he had lost ten head of cattle from feeding it after the seeds had started to ripen. A veterinary surgeon claimed the cattle were poisoned by the sudan.—E. L., Del Paso.

This is a matter of fact, not of opinion, and we have too few facts to answer confidently. We find no mention of trouble from feeding the seeds, and should apprehend no more than from feeding any other husky seeds which are harmless. All accounts speak of possible danger from feeding second growth, starting from a stop of activity in the plant, but this is true of all sorghums, and that is what your veterinary probably refers to. If the plant has been kept regularly growing, and has not started much new shooting, we should not fear it. Start it with small feedings at first.
Slitting Tree Bark.
 To the Editor: I will give you my experience in regard to slitting the bark of cherry trees. At two years old I always slit my trees. I start at limbs and run down about two inches under the ground, just through the outer bark, and always on the north side of the tree. I do this every two years, just as the sap starts in the spring. I think the wood and inner bark grow faster than outer bark and cause it to split and gum, if this is not done.—Eugene Brown, Santa Cruz.
 Thank you for your thought and practice. We do not wish to be hide-bound in our notion, but still we do not believe slitting necessary. The cherry tree has its own way of splitting its coat when it gets too tight. If it does not seem to be able to do this, your way and your time of doing it seem right to us. But out of the twelve thousand acres of cherry trees in California probably not a hundred acres have had slit bark and it is always the man who has fewest trees who is the surest slitter.
Oak Root Fungus.
 To the Editor: Does the large oak tree have spreading roots? Do they take away the nourishment of the soil? In setting out walnut and almond trees, would we have to take out the oak roots and enrich the soil in their locality?—O. L., Berkeley.
 They have usually quite a spread of roots. It is always desirable to fertilize the clearing of any large tree, and often lime is very desirable also. But the loss of many walnut and almond and some other trees on oak clearings is due to the specific fungus communicated from decaying oak roots to the young trees. It is therefore desirable to take out all the roots you can reach without too much deep mining. Their absence will make your trees less likely to fail.

James Lick's Cork Oaks.
 To the Editor: I will state that at Lick's Mills, Agnews, Santa Clara county, will be found a grove of cork oak trees planted by James Lick, claimed to be the oldest in the State. The cork oak and the carob trees are two of great value almost totally overlooked.—J. F. K., Paicines.
 James Lick was actively planting on his place in the late '50s and probably got his share of the Spanish cork acorns sent into this State at that time from the Patent Office in Washington. If he planted before that our records would show it. The conclusion, therefore, is that his trees are of the same age as those reported from San Gabriel, Visalia, Valley Springs, Sonoma and other points where trees were secured from the same lot of acorns.
Apricot Twig Borer.
 To the Editor: Twig borers begin on my young apricot trees in the spring when the young limbs are beginning to sprout. They start at the end of the sprout and work inwards.—J. R., San Jose.
 This is the same insect that works on peach twigs and fruit. The worms winter in holes in crotches of small limbs or roughened bark, and get busy on the first leaf buds. Spray them after they emerge but before they have bored into the twigs. Use lime-sulphur 1 gallon per 10 of water just before the buds open.
Vetch and Oat Hay for Stock.
 To the Editor: Is vetch relished by horses and cows? How much should be sown with oats for hay?—S. S. F., Santa Rosa.
 Vetch and oat hay is generally relished by horses and cows. About 50 pounds of the former and 25 of the latter per acre will make a good stand. If it grows well, it will be a mixed mess to mow. It is a good winter crop.
No Pears on Apple.
 To the Editor: Will Bartlett pears do well and the fruit have the proper shape grafted on apple trees seven years old?—B. H., Walnut Creek.
 They will not.
California Weather Record.
 The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., October 31, 1916.

STATIONS	Past Week	Rainfall Data		Temperature Data	
		To Date	Normal To Date	Max'm	Min'm
Eureka .....	.39	2.29	3.97	64	40
Red Bluff .....	.00	3.35	2.40	80	42
Sacramento .....	.00	1.00	1.44	78	40
San Francisco .....	.00	2.04	1.59	76	48
San Jose .....	.00	1.59	1.28	78	36
Fresno .....	.00	1.58	.99	80	42
Independence .....	.00	1.11	.93	72	30
San Luis Obispo00	3.72	1.82	88	46
Los Angeles00	3.34	.83	90	46
San Diego00	1.12	.52	78	48

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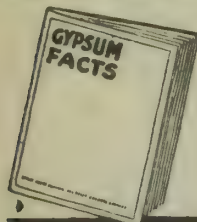
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Splendid results should be
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California Prune and Apricot Growers.

[Written for Pacific Rural Press.]

The clothiers and bankers and milliners and real estate men of San Jose want the prune organization to carry. So do the other business men. They are donating hard cash to the promotion fund—\$10,000 of it. When a man puts his cash into a thing, it shows he has confidence in it. When a business man hands over his cash it is a good sign that he has investigated. These merchants believe the organization will be formed and will control the industry with benefit to growers, who, it is hoped, will spend their increased earnings with the merchants.

For some months, promotion work for the "California Prune and Apricot Growers, Inc.," seemed to be dragging. Prune and apricot growers were too busy harvesting their crops, to pay attention to organization talk, especially since most of them remember the failure of the loosely organized Santa Clara Cured Fruit Exchange of some 16 years ago.

The State Information Committee had in a measure crossed itself by its own remarkable success. Last year its influence and information led many growers to hold until they got good prices. This year their success was so marked that it became a thing of national comment. Thus the prices have been steadily pushed up. It looks to many growers like they can sell without organization. So quickly are the low prices of the past forgotten; and so hard is it to recognize that an organization controlling at least 75 per cent of the crop in interests of growers, is necessary through the years to set prices reasonable to all and maintain them, as the raisin growers, walnut growers, and almond growers have done for years.

Not enough money until recently was forthcoming for organization purposes; and the contracts could not be explained to growers personally enough without a systematic campaign.

The Growers' Information Bureau thought this matter so important, not only to growers, but also to business men, that they turned over their responsibility for promoting a selling agency to a committee representing business men and leading orchardists of the State. This committee chose H. S. Hersman chairman.

Bankers, business men, and fruit growers all over the Valley where he is well known, endorse Mr. Hersman and are backing his efforts with cash. Geo. Howes, of the Finance Committee, says the \$10,000 is the easiest money he ever went after.

J. H. Bone has charge of the organization work in Santa Clara Valley and G. E. Merrill in the rest of the State.

Cash on Delivery.—The chief objection encountered is that growers won't hang together; and the chief evidence offered is the old Cured Fruit Exchange. It seems hard for many to realize that the form of organization now proposed, safeguards this point in several ways.

There is some excuse for a man who is hard up to sell wherever he can for spot cash. The new organ-

ization is bound to pay 4 cents basis for prunes and 8 cents for apricots when the fruit is delivered. Later it must pay to the growers all excess over 4 cents for which the fruit sells, except 5 per cent of the total, which is reserved out of the excess for expenses, etc. Affairs of the organization are to be managed by 25 fruit-growing trustees elected by stockholders. One of these is nominated by the State Market Director.

If it should ever happen that four-fifths of these trustees agree that the price advanced to growers is more than can be obtained for the fruit, they may sell them for less and the growers must refund the difference pro rata. This is fair to all and is hoped to safeguard the organization.

If growers should sell contracted fruit outside, they are obligated to pay the organization 2 cents per pound for such. The raisin growers have included a few who had to be sued on this point; but this has scarcely been a ripple on the raisin organization's business.

Progress.—Forty per cent of the bearing acreage in Kings and Tulare counties was signed up in a short time before last Saturday, growers there having had a striking lesson in the money there is in co-operation. The Milliken district of Santa Clara Valley had signed over 75 per cent of its acreage; and about 250 acres had been signed in the Mountain View school district.

The "Russell Pool," for many years the most famous and successful of selling organizations of Santa Clara Valley growers, has signed contracts in the new organization unanimously, including Mr. Russell himself.

The Farmers' Union has resolved to join as soon as 65 per cent of the acreage is signed up.

Since the business men proved their confidence, the growers have been rallying in a splendid way toward the signing up of 75 per cent of the total acreage of either prunes or apricots or both, and \$750,000 capital, which we feel assured will be done before March 1.

SHALL HE PLANT PEARS?

To the Editor: Is the acreage of pears in California increasing or decreasing? Is the supply of fruit equal to the demand? Is there any way yet found to overcome pear blight?—G. M. B., Covelo.

The acreage of Bartlett pears is practically at a standstill, although there was a considerable increase in Los Angeles last season. The orchards destroyed by blight will probably equal the plantings so far.

The supply of pears is scarcely equal to the demand, as shown by the high prices received as a rule. The great advantage of growing pears is that they can be used for canning, fresh marketing, or drying; and when marketed fresh, can be kept for a long time.

There is a successful way of overcoming pear blight, but very few people practice it. We have treated this many times in the paper. It consists of cutting out all diseased twigs, etc.; sterilizing the implements absolutely. See one of our recent issues for a discussion of this.

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Immature Oranges and Grapefruit.

Growers and shippers of citrus fruits are beginning to make inquiries as to the attitude of the U. S. Dept. of Agriculture toward the shipment into interstate commerce of immature and sweated oranges and grapefruit. Officials in charge of the enforcement of the Food and Drugs Act state that they will be guided by the position of the Department of Agriculture. This position is that sweating of the fruit, either before shipment or en route, is a violation of the Food and Drugs Act when the sweating misleads by making unripe fruit appear ripe. The sweating process turns the green color of unripe fruit to yellow, giving it the appearance of ripe fruit. However, this appearance is illusive, as extensive investigations by the Department have shown.

One way to determine the maturity of an orange is to apply the so-called "eight-to-one test," which is based on the ratio of the "soluble solids" to the acid contained in the juice of the orange. As an orange ripens, these soluble solids increase, while the acid content decreases. An orange is adjudged immature until its juice contains "soluble solids" eight parts or more to each part of acid. These soluble solids are practically equivalent to the amount of sugar contained, and the ratio of sugar to acid naturally determines the sweetness of the orange. For grapefruit, the standard of matur-

ity is set at seven parts of "soluble solids" to one of acid.

The U. S. Dept. of Agriculture will send to any grower or shipper, upon request, specific directions for making the eight-to-one test. The position of the Department in reference to the sweating of immature citrus fruit is set forth in Food Inspection Decision 133, and in Service and Regulatory Announcements of the Bureau of Chemistry numbered 11 and 15, which will be furnished upon application to the Department.

Tables for 8 to 1 Test.—With this 8 to 1 maturity test for oranges being more and more strictly enforced, the desirability of getting mature oranges to market before the holidays is none the less urgent. Knowing when the fruit has first become 8 to 1 means good money. The test is not intricate and may be performed by any grower in the orchard with simple apparatus. Figuring up the results of the test to the final ratio of soluble solids to acids is not difficult, but is rather laborious. Oscar Warner of the Butte County Citrus Association has prepared some tables by which the calculations are avoided. All that is necessary is to read the saccharometer, thermometer, and burette scale, then refer to the tables. It has required a large amount of labor to prepare these, and they are not for free distribution.

PEACH TREES DIE — ROOT FUNGUS.

To the Editor: The leaves of six peach trees close together turned yellow and dropped, while most of the others are perfectly healthy and green. Can't find where gophers have been and their trunks look healthy.—J. C. S., Ontario.

[Take the bark from some of the roots, which are probably all dead, and if you find a felty mass next to the wood or black threads a few inches long pushing out from the roots, or a little later in winter watch for a clump of toadstools which you can trace to the tree roots or crown. This is oak root fungus which we have repeatedly discussed. Fig, pear, black walnut, and cherry roots are less susceptible than the other fruits. To prevent spread, dig a trench three feet deep around the infected area, destroying all cut roots and refilling the ditch with uninfected dirt. If the fungus has followed any root as far as the trench, you will have to dig another farther away. This will have to be repeated about every two years to prevent growth of roots across the trench.]

GRAPE LITTLE-LEAF.

[Written for Pacific Rural Press.]

Little-leaf of grapes is purely a matter of too much or too little water in the soil, and to irregular supply through the season, according to Frank Henry of Fresno county. If waterlogged, not enough air is admitted to permit the roots to function properly; and in order to make leaves at all, they are made small. Likewise if too little water is present, or if, having been too long waterlogged, the roots have rotted off.

The surface of a nearby pond does not indicate the water table in a

Fresno county is a patch of low heavy vineyard from which he never picked natural grapes for raisins. They always shriveled on the vines for lack of food because the little mottled yellow leaves could not supply it. The vines persisted in rather unhealthy growth as long as the reserve food in trunks and roots lasted. Then the centers of vines would burn out and expose the grapes with a fringe of unhealthy leaves around them. They quit growing in June last season.

The remedy is proper drainage and then frequent and quick flooding to keep the ground moist but not waterlogged. Mr. Cate did not get the patch drained, but he did irrigate, and in mid-September these burned out little-leaf vines had new growth from the axils 12 to 18

inches long, and he expects to get a crop on them next year.

A parcel post shipment of shingles was made the other week by the Manning Shingle Company, Wash., consigned to Spring Camp, Idaho.

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vineyard, as Mr. Henry has proved several times with soil augers. He recommends close study of soil water conditions in all vineyard operations.

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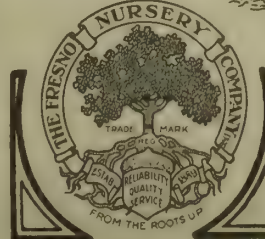
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THE FRESNO NURSERY CO., INC.
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El Dorado Potatoes Profitable.

To the Editor: I enclose part of my report to the Supervisors last month and it may prove interesting to a number of your readers who are looking for an opportunity to go into potato growing in a locality where land is cheap and plentiful.

A year ago a number of small ranchers experimented as to what could be accomplished in a profitable way by the use of certain commercial fertilizers at a rate per acre that would still leave a good profit after deducting first cost of seed, plowing, planting, cultivating, irrigating, cost of water and labor of digging.

It has evidently worked out on a paying basis as the increased plantings this year would seem to prove conclusively. These small growers are not out a cent for hired labor up to digging time as they do all their own work. I know one grower in particular who has a fine crop of five acres who has done all the work so far with the help of his little boy.

The cost of the commercial fertilizers used by parties east of Camino will average about \$55.00 per acre while others up Fruit Ridge have used a great deal less. It will be very interesting to note the difference in yield at digging time of these differently fertilized fields. We have inspected most of these plantings under the certified seed law.

The growing of potatoes in this section now seems to be a sound and profitable financial fact, and no get-rich-quick scheme enters the calculations of these small growers. As profits and experience increase and success attends these ventures we may look for a large potato growing district.

There are probably over 2000 acres in this section pre-eminently adapted to successful potato culture. The constant and increasing demand for and consumption of potatoes would apparently make the growing of this vegetable in localities where they grow to such perfection a proposition that would more nearly meet the requirements of the man of small means and would also give quicker and surer returns at a smaller outlay than fruit-growing.

I want it distinctly understood, however, that when I speak of potato soil I mean the so-called volcanic ash. Other varieties of soil would probably require different formulas of fertilizers in order to get good returns and this is a matter that can only be worked out through a series of trials and experiments before definite and dependable results could be established.

J. E. Hassler,
El Dorado County Horticultural
Commissioner. Placerville.

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Here's good news for alfalfa growers---a new thoroughly

tested plant that will produce the greatest alfalfa tonnage known---and under all climatic conditions. Has been tried out and endorsed by Arizona State Experiment Station, and by growers in both hot and cold countries. Supt. of Arizona Station says: "Hairy Peruvian produces heavily in all climates practically the year round. Gives farmer maximum yield from his land. Does equally well at 5000 feet or at sea level. The plant is heavily leaved, thus giving highest food value. We recommend it above all other types." W. B. Cloyd of Yuma says: "Hairy Peruvian is greatest producer. I now get one more cutting per year." David C. Aepli of Yuma says: "Hairy Peruvian outyields other varieties 15% to 20% per acre." Write for complete information.

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Cutting 100 Inches Wide and 14 Inches Deep.

This picture tells a story that ought to interest every man who is interested in tractor plows. Here are two Knapp Tractor Plows behind a 75 H. P. tractor---cutting 100 inches wide and 14 inches deep in hard soil. It pays to plow with a good plow---like

THE KNAPP TRACTOR DISC PLOW

It's absolutely the best plow on the market for all classes of work. Built solid and strong. Handles easily and quickly adjusted. Light in draft. Stays in the ground. Will plow any soil that can be plowed with a disc plow. We also build specially designed orchard plows.

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CITY BOYS AND GIRLS MAKE GOOD FARMERS.

(Continued from first page.)
kind"; for variety is part of the school work.

Students and Courses.—Since the school is primarily for city boys, a certain proportion of those who enter find the work distasteful. To hasten the weeding-out process, as well as to give a practical background for the school studies, the boys are put to outdoor field work most of the time for the first year.

About 60 boys are taking the regular four-year agricultural course this year. About 100 are taking agricultural subjects, and 50 more are taking ordinary high school subjects. Practically none of them has had any previous farm experience. In 1910, the total students in all courses were 69, including 5 in the regular agricultural course. This year there are a total of 300.

The course is principally practical, but may be somewhat modified so graduates may enter college. Home agricultural work is impossible with most of these students, but some are responsible for certain plots at school, some work for the teachers, and some work for neighbors, getting school credit.

They learn to keep records of crop yields and expenses, they test the cows, and keep records of the poultry pens. They had been husking and weighing corn when we were there. Some were spraying the compost heap. Some were irrigating from underground pipe lines, boxes, standpipes, etc., that students had made and laid.

A certain lot of corn had been reserved for seed selection which has been regularly practiced to get a good silage strain. The seed is planted one ear per row and records kept by the students.

Poultry.—About 600 White Leghorns are kept, also several other breeds for demonstration. These are changed at convenience, to keep representatives of all the leading poultry classes for study of form, color pattern, etc. Utility is emphasized above fancy.

"With us, egg production is a manufacturing business," says Prof. Lillard. The cafeteria is supplied at market prices; and the rest of the 30 dozen eggs being laid weekly while we were there are sold outside.

Livestock.—It is funny to watch some of the boys learn to drive the two big tractable farm horses. They have their fun milking too. Four cows only were being milked in September, but they represent high records and breeding. There were three registered Holsteins, one of which, Canary Concordia Mercedes, has a magnificent conformation and is out of an A. R. O. cow and A. R. O. bull. Her own record as shown by the school test is 24 pounds butter in 7 days, her milk testing about 3.4 per cent. She weighs about 1600 pounds.

The hogs have heretofore occupied poor quarters, but were of good breeding, and the boys have lately fenced and cross-fenced two acres of alfalfa and built a hoghouse. The boar and two sows are registered Berkshires. There are about 13 pigs now. About \$100 worth of pigs were sold in February and more since.

No animal dies or is killed on the

place without being post-mortemed in the presence of a class.

In all the school work, problems are stated in terms of the country, and in the form in which farmers meet them; and the boys and girls who finish their courses are making good.

WINTER SOWN PEAS AND OATS.

[Written for Pacific Rural Press.]

An acre and a half of Niles peas and red oats provided S. F. Bonner of Butte county with green feed for 20 cows for a month during the spring of 1915. As a result he planted 15 acres of his old alfalfa land to the same crop in November 1915 for spring feed in 1916.

In 1915 the winter was a long-

growing one, with rain at close enough intervals to keep the crop growing in fine shape. This year the conditions have been just the reverse. Yet, while most of the grain in his neighborhood looked badly in need of rain in late April, the oats had not yet headed out and were knee high, with peas densely covering the ground.

Mr. Bonner states that neighbors who planted after the first of January this year, as a result of his experience last year, did not secure a good stand, and that he therefore considers November a safer time to plant, taking one year with another. He mixes the peas and oats half and half when seeding. He has tried black-eye beans in connection with the oats but did not succeed in get-

ting them to withstand the cold, wet weather.

As experience in other parts of the State shows vetch and barley to be a good silage crop, Mr. Bonner's experience would seem to indicate that Niles peas and red oats might be valuable for the same purpose, besides being a good crop to precede corn where a rotation system with alfalfa is practiced.

The State Railroad Commission, after a rehearing, has decided that the reduction ordered in rates on paddy rice, moving from points in the Sacramento and San Joaquin Valleys to San Francisco, Sacramento, Biggs and Gridley, will not affect the earnings of the river boat lines.

Which Land is Worth More?

—grain land or fruit land?

The question answers itself, for you know that values are determined by net profits. Think of the years and years of productiveness of a well planted orchard! Think of the wealthy fruit growers you know who have started in a small way—with a few acres—and today are independent! Then stop and ask yourself why you shouldn't make a start towards greater profits and independence.

Plant Trees—Roeding's True Trees

—and make sure of results. It isn't enough just to plant "fruit trees", as that won't insure a profitable orchard. The planter's safeguard is to see that the name "Roeding" is on every tree he plants. It doesn't cost any more to plant, prune and care for pedigreed trees than it does those of inferior origin—and you know that it is always the fancy fruit that brings the big returns. The big red apple—the fine textured, rich flavored peach—the large fancy pickling olive—all bring to mind memories of successful growers who specialize.

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It will soon be ready and we will gladly place your name on our mailing list for a free copy if you say so. Write for it now. A postcard will do.

We Want To Help You Plan Your Orchard.

We grow practically everything—fruit and ornamental trees, vines, shrubs and plants—and will gladly advise with you free. Tell us what you think of planting and ask for our advice and suggestions.

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POWER FOR WIDE AND NARROW FURROW WIDTHS.

To the Editor: What is the relative power required to draw a disk plow a given depth, cutting different furrow widths? Take a five disk gang cutting ten inches per disk, and then narrow the furrow down to six inches per disk. The narrowing to be done either by setting the disks closer together on the main beam or by adjusting the draft so that the disks will naturally follow one another more closely and thus cut a narrow furrow.—C. E. P., Woodland.

[Answered by Prof. J. B. Davidson, University Farm, Davis.]

The turning of a wide furrow requires more power per square inch of cross-section of the furrow slice than the turning of a narrow one, for the simple reason that more of the soil must be moved further and this takes power. On the other hand the cutting of the furrow slice with the edge of the disk involves quite a large part of the power required to move the plow; thus in cutting a narrow furrow this operation must be performed oftener than with the cutting of a wide furrow. It is clear that these two factors counteract each other and the width of furrow which will give the minimum draft or the best opportunity for these factors to balance will depend upon the condition of the soil. In turning a furrow in very hard soil considerable power is used in breaking up the soil. If the furrow is narrow the cutting action of the plow is substituted for this breaking. Our observation has been that the draft when the plowing is good and the soil moist will be less when the furrow is in the neighborhood of 10 inches or more; if the plowing is hard, the narrow furrow will give better results—6 to 8 inches.

FARM ELECTRIC PLANT.

The advantages of electricity have become almost a necessity in farm homes, and are regarded as such where it has been used any length of time. But there are lots of farmers who don't have electricity available. For these, the home plant is more economical than the old ways of lighting, running sewing machines, washing machines, fans, vacuum cleaners, feed grinders and mixers, compressed air pumps, grindstones, etc., if labor is counted of value; and if there is any more to life than just drudging with the hands what is so much more easily done by electricity. We are advertising such an outfit, and we saw another at the Fresno Fair. This one produced electricity at a cost of 2½ cents per kilowatt hour for fuel. It was claimed to run 15 20-watt lamps 8 hours from the 16-cell storage battery with the outfit. Its additional capacity with dynamo running was 32 lights. It would run motors up to ½ h.p. built for the 32 volt current which it generates.

Construction.—A 2 h.p. gas engine is direct-connected to the dynamo in one frame. It is started by pulling a switch, and is automatically stopped when the batteries are fully charged. It runs 900 r.p.m. and has an air cooler. To charge

the batteries requires four hours, using about a gallon of distillate.

Three things must be watched. The one oil cup must be replenished, the fuel tank must have fuel, and the battery plates must be kept covered with water.

TRACTOR DEMONSTRATION AT FRUIT GROWERS' CONVENTION.

[Written for Pacific Rural Press by John J. Fox, Napa.]

The following tractor manufacturers have contracted to take part in the demonstration at the 49th State Fruit Growers' Convention at Napa: Avery Tractor Company, 2 Wheel tractors; Bean Spray Co., 1 tracklayer; Best, 1 or 2 tracklayers; International Harvester Co., 3 wheel tractors; Holt, 1 or 2 tracklayers; Yuba Ball Tread, 2 tracklayers; Joshua Henry, 3 tracklayers and wheel; Ford Tractor, 2 wheel tractors.

In addition to these we have the largest collective exhibit of farm tools, implements, sprays, fertilizers and home industrial exhibits ever shown outside the State Fair in this part of the State. Demonstrations will be given each day at hours that will not conflict with the sessions of the convention. A little over 3 acres for each machine has been laid off on land adjoining exhibit grounds.

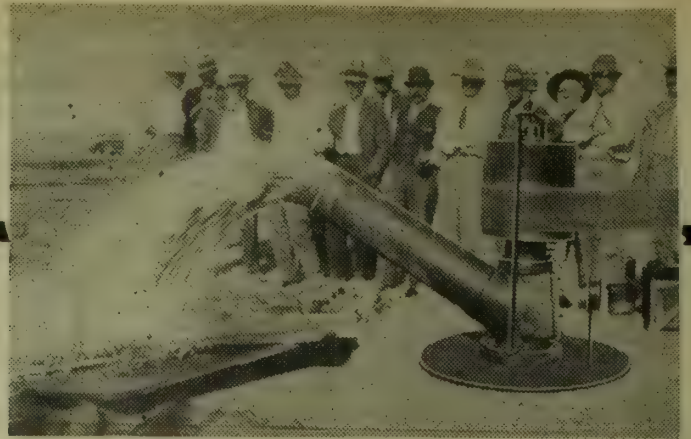
The names of the gentlemen on the program and the subjects to be discussed will draw a large crowd of the leading growers; and arrangements are being made to have comfortable accommodations for all visitors. An information bureau will be established at the Napa Chamber of Commerce for the convenience of guests. We expect yet other tractors to apply for space before the convention and have land for several more. Guests are already booking rooms at the leading hotels. Extra lighting and parking spaces have been arranged for by the city and fire protection at the Exhibition Hall.

COMBINED RICE HARVESTER.

To the Editor: We are threshing rice with a combined harvester made especially by the Holt Manufacturing Co. for the work. The harvester goes right into the field, heads the rice and sacks it. It has been cutting about twenty acres a day and working beautifully for two days and has brought rice growers from all over the State to see it.

It is figured that cutting rice by this process will reduce the cost of production at least one-third, and really revolutionize the rice-growing industry of the State, as it will enable the grower to get his crop off at least a month earlier than he is doing now.

We are using it on a Philippine rice called Pelitt, secured from the Biggs station of U. S. Dept. of Agriculture. Experts declare that we will not be able to cut the Waterbune rice grown in this State with it, because the straw is too green when the rice is ripe; however, there are two or three types of new rice



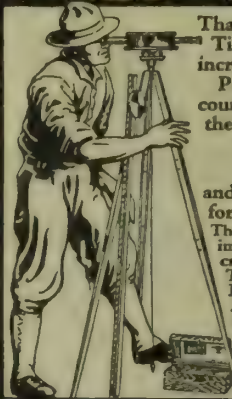
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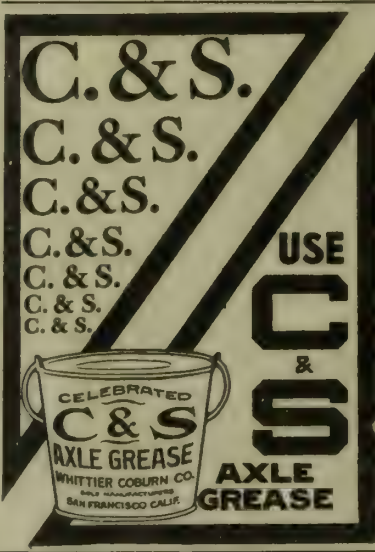


That's what every man does who owns Properly Irrigated, Ditched, Tile Drained or Terraced Land. And if you don't want to sell, your increased yearly profits are just like turning waste land into cash. Progressive land owners in every State and practically every county in the Union have discovered that the only way to bring their land up to the desired state of production is to get a

Bostrom \$15 Farm Level

and make spare days the most profitable days. Also fills the bill for Grading, Road Building, Foundation Work, etc. The Bostrom Farm Level has been on the market over thirty years, the latest improved having a Telescope with Magnifying Lenses which enable you to see the cross on the Target a quarter of a mile away. Man Size Tripod, Leveling Rod, Target, Plum-Bob and full instructions included. Weight, 15 pounds. It is used and endorsed by Agriculture Schools and U. S. Farm Demonstration Agents, and you will endorse it, too, after using it—if not Your Money Back, including express both ways. Write today for description of Level and Telescope, details of our Money Back Guarantee, and names of Jobbers in San Francisco, Sacramento and Los Angeles who carry it in stock.

BOSTROM-BRADY MFG. CO. 000 Madison Ave., Atlanta, Ga.



developed the last year or two that will make it possible to use the combined harvester. The Pelitt rice is a long-grain rice, being the type of rice sought in the East and Middle West. W. E. Barnard.

Oct. 27.

GOOD WAY TO GET A TRACTOR.

Here is an arrangement that may help many people to get tractors with small outlay. Dr. G. E. Wanberg of Los Angeles county controls the water company which supplies at least 200 acres of small citrus orchards whose owners do not live on them. He figures on getting con-

YUBA BALL TREAD TRACTORS

A Yuba owner writes:

"Plowed 1000 acres early in the season, and have just plowed 370 acres, averaging 20 acres a day."

May we send you the Yuba literature?

THE YUBA CONSTRUCTION CO.
DEPARTMENT 1115
433 CALIFORNIA ST.
SAN FRANCISCO CALIF.

tracts to cultivate them, buy a tractor and go partnership with a man who will run it. The man will charge \$3 a day for running it and will make a uniform charge to orchardists per acre for doing the work. Out of his half of the net profits he will repay Dr. Wanberg half of the first cost.

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Make Good



When you buy a rubber belt you should know what service it will give you or have the belt service guaranteed by a responsible firm who will make good in case the belt falls down. Every belt-buyer should know how to judge a rubber belt, and we would like to send you a free sample of **Test Special** together with our folder that will tell you just how to judge a rubber belt so that you may know just what service you will get from any belt you buy.

Fill out the coupon and mail it to us and we will recommend a belt that we will unqualifiedly guarantee to do your work satisfactorily. We have had seventy years' manufacturing and selling experience.

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Diameter { Driving Pulley _____
in Inches { Driven Pulley _____

Kind of { Cross _____
Drive { Straight _____
Perpendicular _____

Width of Belt _____ Ply _____

Distance Between { _____
Centers of Pulleys { _____

Revolutions per Min. { _____
of Driving Pulley { _____

Kind of Mach- { _____
inery Driven { _____

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Address _____

A pocket memo booklet giving speed and power tables will be sent FREE to all who mail this coupon.



REDWOOD TANKS — SILOS.
Thirty-five years in this business in Stockton. — A 500-gallon tank, \$8.00. A tank 6 ft. x 2½ ft., \$7.50. Other tanks equally cheap. I deal direct with the consumer, saving 10% to 25%. All sizes in stock. Clear, dry redwood direct from the mill. Write for price today. machinery. Doors, Windows.

Latest improved
Frames, Mouldings.
R. F. WILSON,

STOCKTON, CAL.

PUMP CO-OPERATORS SOLD OUT.

[Written for Pacific Rural Press.]

It sometimes happens that a co-operative farmers' project requires such a large plant to minimize overhead expense, that not enough co-operators are found to make the business economical for those who do undertake it. In such cases it may be well to sell at a good bargain.

Some years ago a few Ventura county farmers, of whom one was E. E. Dunning, co-operated to put up an \$80,000 pumping plant. It included a 2,000,000 gallon reservoir at an elevation of 265 feet in the hills three miles away, delivering water through an 18-inch pipe.

Recently they sold out to a local power company for \$40,000 with the provision that all the members must henceforth be furnished all the water they want at 25 cents per miner's inch per 24 hours.

On Mr. Dunning's 70 acres of lima beans, the irrigation does not cost over \$2.50 per acre per year when he uses the water at all. Since he has irrigated only 6 or 7 times in the 33 years he has been raising beans there, and since only in 1898 was he unable to raise a good crop, his investment in the plant did not bring him good returns because he could not use enough of its output. Now he pays for what he uses and has no overhead expenses.

FARMERS STORE ENGINE FUEL.

To the Editor: (1) What percentage of farmers are reached by the tank wagons of oil companies having rural routes? (2) Do farmers buy oil in barrel lots? (3) How much gasoline does the average farmer use? (4) Do the farmers who operate tractors carry gasoline to the tractor in the field or drive the tractor to the storage place for refilling?—W. B. M., Chicago.

[Answered by Standard Oil Co.]

The information given is merely estimated, but it is as nearly correct as our viewpoint will permit.

(1) The percentage of farmers reached by tank wagons of oil companies having rural routes we estimate to be about 75 per cent.

(2) Farmers reached by tank wagons of oil companies having rural routes purchase in bulk, delivery usually being made into storage tanks owned by such farmers.

(3) The farmer, unless he is operating an automobile, uses comparatively little gasoline. His power plant and tractor usually burn engine distillate.

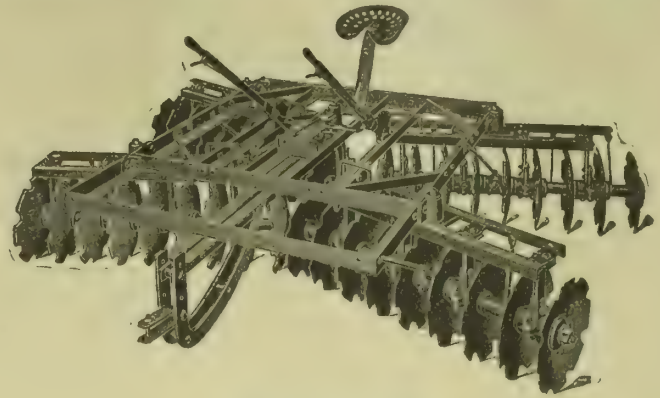
(4) Farmers operating tractors usually arrange for delivery of the fuel to the tractor in the field, as against driving the tractor to storage places for refilling.

AUTO EXHIBIT AT LOS ANGELES.

The great Automobile and Auto Truck exhibition opened at Los Angeles last Saturday afternoon under most auspicious circumstances. A million dollars in cars alone is said to be represented, covering 250 cars and trucks, with accessories. The interest has been good and the attendance large.

Fast sales of Sandusky tractors following the Puente demonstration are reported by Wm. Rabb who has charge of the Los Angeles office and also has charge of a new branch opened at Sacramento about Oct. 1. Five were sold within two days, going to Antelope Valley and the Lompoc district.

IMPERIAL Double Disc Engine Harrow



SPECIFICATIONS:

Axle, 1½ inch square steel; Frame, 5/16x3 inch angle steel, double reinforced at the corners. Discs, 18 inch extra heavy, cutaway, 8 point. Bearings, hard maple with hand oil cups.

The principle of this machine is that of two Disc Harrows, one out-throw and one in-throw, built together under a strong, rigid, heavy angle steel frame. The forward Harrow works exactly like the ordinary Disc Harrow in cutting the ground and throwing it outward from the center. The rear Harrow works in the opposite direction, cutting the same ground and throwing it back. The result is equal to that secured by two workings with an ordinary Disc Harrow, but the soil is more thoroughly pulverized and the surface more effectively leveled. Requires but little more power than single disc of same width.

Write for Circular R. P.

Baker & Hamilton

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the Standard Oil for Motor Cars

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Valves Guaranteed for Pressure

Pacific Pipe Co.

Main and Howard Streets,

San Francisco, Calif.

General Agricultural Review.

FIELD CROPS.

About 350 acres were planted to corn in Potter Valley this year.

Some Greek capitalists plan to plant big acreage to tobacco on Oroville lands.

The Argentine Republic is shipping corn to Peoria, Ill., the center of the corn belt of the United States.

The Agriculture Department at Washington reports the number of bales of cotton ginned in California this year at 6,852 bales, against 4,272 bales last year.

Mr. C. A. Carner of Potter Valley raised over 1500 lbs. of watermelon seed to half an acre which he sold to Germain Seed Company for 25c a pound—\$750 worth per acre.

Orange county led in lima bean shipments for the month of September, shipping out 17,336,406 pounds of beans, and Ventura county came next with shipments of 4,000,000 pounds.

A good deal of hops was bought up around Ukiah last week at 12½ cents a pound. Some are holding for higher prices. In one instance one grower got 15 cents, the highest recorded here so far for this year.

W. Hansen in the upper Ojai valley at Nordhoff never could get a stand of small white beans till this year he planted alongside alternating rows of pinks and whites. Was it interpollination, or what helped them this year to grow?

Milk-fed pumpkins is the latest thing in Southern California. Gamo Suki, a Japanese gardener, of Elsinor has been injecting milk into the stems of growing pumpkins and is producing some wonderful pumpkins both as to size and flavor.

The Sperry Flour Company is to conduct some experimental work in wheat-growing on 300 acres of leased land east of Stockton. This experimental work will be done with the co-operation of County Farm Ad-

viser Frank F. Lyons and experts from the agricultural college of the University of California.

W. F. Fowler of Willows has applied to the State Water Commission for permission to appropriate 250 cubic feet per second of the waters of the Sacramento river for rice culture on 15,000 acres, property of the Superior California Farm Land Company.

DECIDUOUS FRUITS.

Morgan Hill growers have formally endorsed the proposed Prune and Apricot Growers' Association.

Napa county unanimously endorsed the proposed Prune and Apricot Growers' Association.

The banner year in Vacaville's history came to an end Oct. 25 with a total shipment of 1,216 carloads of fruit.

Prices on peaches for November and December shipments have been increased from one-quarter to one-half cent by the California Peach Growers' Association.

Some shipments for export from Sebastopol to Europe last week consisted principally of dried apples, one car going to Glasgow, Scotland, one to Liverpool, England, and the other to a French port.

Two old pear trees planted 60 years ago in Long Valley near Auburn, have borne crops year after year since they came into bearing. This year they yielded 60 boxes of fruit, which sold for \$2.50 a box, or \$150.

A carload of quinces was shipped from the 25-acre Church orchard in Highgrove near Redlands last week. This is the first shipment of quinces from this section on what may be called a commercial scale. The trees are four-year-olds, and the fruit, which was consigned to Chicago, is of fine quality.

CITRUS, NUTS, SEMI-TROPICAL.

The Citrus Exposition for San Joaquin Valley will be held Dec. 6-13 in Visalia.

The supervisors of San Bernardino county have passed an eight-to-one orange test ordinance.

R. G. Benson, a grower at Oakdale, picked 89 pounds of almonds from one tree 25 years old.

Olive factories in the Oroville district are now well started on the season's run of Manzanillos and Missons.

At a meeting of the Fair Oaks orange growers strong resolutions were adopted protesting against the eight-to-one test.

The Northern California Olive Corporation is operating its Palermo plant. The orchards from which this company packs are reported to be yielding bountifully.

Porterville district pomegranates brought a record price in New York when a carload sold there the other day for \$1,485 gross at the rate of \$2.05 per half-box.

Prosecution of shippers of unripe oranges artificially colored was begun Oct. 30 when the U. S. Government filed an information against Welbanks & Co. of Los Angeles.

It is reported from San Bernardino that the yield of oranges in the San Bernardino Valley this season will run from 85 to 100 per cent normal. Last year the crop was 70 to 80 per cent normal.

Congressman Denver S. Church says that there is strong opposition to the proposed orange standardization law on the part of the Florida delegation in the House of Representatives.

Estimates of the orange crop in the Lindsay district now place the increase over last year at 22 per cent. The testing of fruit is being done every day and it appears that it is coming up to standard a little ahead of last year.

Prune, Apricot, and Peach Growers.

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For prunes and cots use BEAN'S BUG-GO (a perfect crude oil emulsion). Cleans off all scale and moss.

For peaches use Bordeaux Mixture—or Lime-Sulphur.

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Bean Power Sprayer

Made in a full line of sizes from the sturdy little one-man one-horse Eureka to the big Bean Double Giant, for stationary plants, which supplies 10 or 12 lines of hose.

You can't afford to waste time, temper, and money on a cheaply-built sprayer. Better buy a Bean at the start.

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Bartlett Pear

On Blight-Resistant Roots

There never was a more favorable time for Pear planting, but be sure your trees are planted on Japanese Roots. We have given this root a thorough test for over five years, and discarded all others in its favor.

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New Crop at New Prices

Send for Samples and Our Special Quotations.

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Such as

Sweet and Bitter Clovers, Bur Clover, Vetch, Canada Peas and Rye.

Prices on Application.

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506-508 J STREET,

SACRAMENTO, CAL.

A \$10,000 olive processing warehouse has just been completed at Lindsay by the Lindsay Ripe Olive Packing Co. Heretofore olive growers of the Lindsay district had to send their olives to Los Angeles or Sacramento to be processed.

Prominent orange growers of the Ontario-Cucamonga district have persuaded the County Board of Supervisors to pass an ordinance prohibiting the shipment of oranges that will not pass the eight-to-one test.

Since the late heavy rains, oranges in the Porterville district have shown an increased tendency to split, the rain having given the growth of the fruit such an impetus that the pulp of the orange grows faster than the peel.

The Sunnyside Citrus Association (a reorganization of the Zante Citrus Association) has perfected its organization. It will pack in the Lisco house, in which washers and other improvements to insure a high-class pack have been installed.

The Northern Tulare County Citrus Association will start orange packing at Sultana, Nov. 11. The subsequent dates of packing will be determined by the test of the fruit, which will have to conform to the State Standardization Law which requires an eight-to-one test.

Oroville orange growers contend that the only solution for the shipment of immature fruit is to bar all sweating and to ship only tree-colored fruit. The shipment of tree-colored fruit from this district last year made a big hit with the trade in the East, and the results financially were satisfactory to growers and packers.

GRAPES.

A carload of Emperor grapes shipped from Dinuba recently brought \$2000 on the auction market in New York.

The California Associated Raisin Company will pay out more than \$1,100,000 to its members this year. Last year the Associated distributed a little more than \$400,000.

A. Dellavalle of Madera has shipped several carloads of Zinfandels and Muscats to Chicago in uniced cars. The grapes were received in good condition.

The California Wine Association has bought 25,000 tons of damaged Muscat grapes since the late storm, and will buy more up to the capacity of its wineries. It has paid \$12 per ton for them. They are converted into brandy.

Approximately 11,000 trays of raisins were destroyed by three different fires in artificial dryers in the vicinity of Hanford last week, the loss being estimated at \$4,276. The dryers were all hastily constructed buildings installed after the recent rains.

The Stockton Vineyard Co. has filled all of its big tanks with this year's vintage, the product amounting to 400,000 gallons of grape juice that will make excellent wine. Most of this yield is from the company's vineyard near Atlanta, surrounding the winery. The season promises to be the best in the history of the company.

MISCELLANEOUS.

An irrigation district has been formed in the Carmichael Colony, near Fair Oaks, and a pumping plant is being installed.

San Luis Obispo county is to have a farm adviser under the provisions of the State law and with the co-operation of the State University.

It is said that Chico's United States Plant Introduction Station will probably be increased by 100 acres or more, and its scope of activity extended.

Fernley Valley, Nevada, is coming very fast. Although it is only a few years since the project was opened, wonderful development has been made in this section. All that was needed was water and a bunch of progressive farmers. Good crops of alfalfa and potatoes can be seen all over the valley, and where corn has

been put in wonderful results have been wrought. More corn should be raised here. Recently 40 acres put to alfalfa sold for \$200 per acre. This speaks well for land that only a few years back was sagebrush.

As a result of the announcement that the \$11,000,000 nitrate plant to be constructed by the Federal Government would be located in a district possessing great hydro-electric possibilities, the Chamber of Commerce of Oroville has written to Hoyt S. Gale of the United States Geological Survey, inviting attention to the Oroville district. The method of manufacturing the nitrates is to extract the nitrogen from the air. The factory is designed both to furnish fertilizer and to render the country independent of foreign supplies.



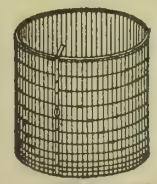
The Farmer's Friend

Formaldehyde has been rightly dubbed "The Farmer's Friend" because it serves the scientific farmer in a thousand ways.

FORMALDEHYDE
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Prices the lowest.
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Farmers Will Vote Yes on No. 5

Will the working Farmers vote with those whose only use for land is to hold a mortgage on it, or to reap its site value?

Will the land Users vote with the land Speculators?

Will Farmers continue to Pull Chestnuts Out of the Fire for bankers and brokers?

Will Farmers vote to keep on taxing their houses, furniture, barns, tools, stock, crops, autos—or to Un-tax these and Tax fairly million-dollar city lots, idle estates, mines, oil wells, and vast holdings of the Pacific railroads?

They say the Farmer is ignorant and selfish, and will always vote for the despoilers of mankind. It is not true. The Farmer's learning is different from the city man's, but not less. His heart is in closer touch with his head, and he is less a cynic than the city man. He will vote for a True Ideal.

Thousands of farmers are working for Number 5, the Land Value Taxation Amendment (Single Tax) because they understand it will throw open the unused resources to all on equal terms, break the "cinch" of trusts, stop the waste of human life—its needless suffering in a land of plenty, and bring a social order of good will among men.

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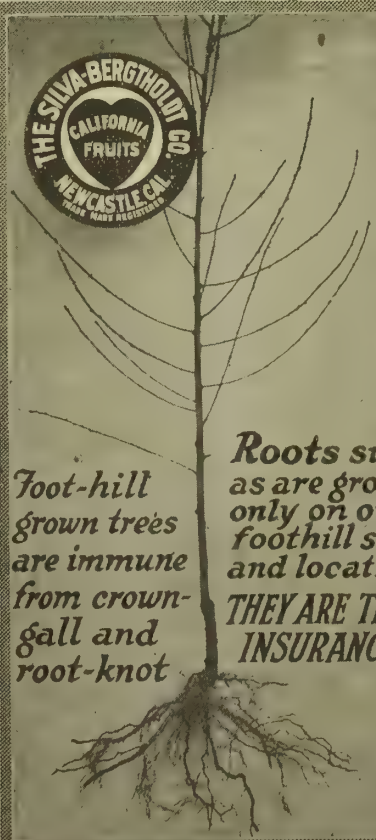
Give us your order now while our foothill-grown pedigreed trees can be reserved for you and at the special price we now make.

Send us a list of your wants for special quotation. DO IT NOW. Address P. O. Box B.

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Newcastle, California.



Livestock Facts and Fancies---VII.

[By the Editor.]

Our last talk was of the wonderful transformation of the livestock which the pioneers found in California by their free importation of purebreds. This appealed to us as a very definite and very broad demonstration of the efficiency of the purebred in enforcing its distinct traits, forms and values upon common stock, in such abundance and with such easily recognized clearness, that reasonable prices paid for purebreds are the very wisest investments a practical grower of salable animals can make, no matter whether he is growing dogs or draft horses. And when such investments are widely made, as they were in California in the early 50s, the whole animal population of a state can be almost incalculably advanced in public service and in market values. If any one doubts this, let him ask himself how he would feel if he should go out some morning to find his pasture populated with long-horned, cat-hammed, long-legged Mexicans instead of the California common stock of the present day, which the pioneers made for him by their purebred foresight and generosity. And when he awakes from such a day-dream as that, how can he satisfactorily explain why he does not go on lifting common stock toward purebred standards of form and value? How can he explain to his little grandson, who has run away from his mother to follow him through the wet grass of the morning, why he does not continue to do, for the future prosperity of the kid he loves, just what the pioneers did for him!

But we surely did not intend to start in preaching so early in the morning—and yet if the poets can find sermons in stones, the farmer can surely find them in the wet grass of the sunrise. But what we thought of saying at this time is this: From the very earliest times, even before the sunrise of civilization, geography has been associated with the improvement of livestock, and our argument for better animals, based upon the wonderful transformation of the common stock of California, has historic propriety. Even beyond history, certain geographical areas have had improved animals and certain others have not. All of those peoples which conceived ideals of better animals for their various purposes, attained them by selection of sires and dams and guarded them from intrusion of scrub animals which would debase the offspring—but we do not intend to indulge in ancient history. In more recent times the beginnings of what we now recognize as breeds are found in definite geographical areas: Arabian, Percheron, Shire, Durham, Jersey, Ayrshire, Holstein-Friesian, etc., etc., are all geographical terms. And all of the breeds were evolved and given individual characteristics by the work of far-seeing men within quite definite geographical limits. Most of them secured elements of improvement from outside, by bringing animals of some fame from beyond their borders, but the chief work was done in the localities. These same facts of history are still a working basis for animal improvement. There is perhaps no need to

multiply breeds at this late day so we are not suggesting that California should enter upon the development of new breeds suited to her various conditions and environments. We do, however, suggest that California can still employ the old geographical method of developing distinctive improvement by specializing in certain areas of similar conditions for the development of existing breeds, in a way to especially serve those conditions and productive opportunities which they offer. By doing this with the insight and enterprise with which Californians are widely credited, it is distinctly possible, not to develop a California breed of this or that kind of animal, but to develop and offer to the world California types of many good breeds, because we have the mental force to do it and because our natural conditions are so distinctly adapted to the attainment of higher types of animals of all kinds. Enough has been done already to demonstrate the possibility of this. Our Berkshires are said by Prof. Thompson (as cited in last week's Rural Press) to be as good as anybody's. The University Farm has bunches of various breeds which are also thought to be, at least of similar standing. These ought to be tried out at eastern shows to determine just where they do stand. We need actual demonstration at the first possible moment of just how our California-bred specimens of the different breeds compare with national standards, and if they should be now "as good as any" all we have to do is to press onward until they are better than anybody's. When that is recognized, we shall have the basis for an invitation to the world to seek their purebreds in California, and the best always advertises itself.

Now, to work toward such ends, not only to supply our own factors of improvement, but to supply the fast awakening nations and regions to which we are geographically a supply district, it seems desirable to have a wider and more solid community interest in the breeds, and we use the term "community" in a geographical sense largely. It would be a great advantage, from the point of view of the great State interest, if we could have geographical districts devoted to the local development of different breeds. We have already some tendency toward segregation in this line, like Poland-Chinas in Kings county, Jerseys in Stanislaus, Shorthorns in Monterey, Holstein-Friesians in Sacramento sections, etc. Of course this is not an exclusive arrangement. It is only illustrative of what might be more prevalent. If we could go on along this line we would soon have in California headquarters or centers for each of the popular breeds as they have been long established and recognized in Europe and as they are coming to be realized in the older parts of this country.

It would be very desirable, it seems to us, if we should give more attention to development in districts rather than in scattered individual breeding farms. It would draw local livestock farmers closer

Shorthorn Bulls

BERKSHIRE SWINE

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Scotch Topped Shorthorn Bulls

we have ever brought out from the East. We have visited the numerous herds in Nebraska, Iowa, and Missouri, and selected only large, growthy, heavy-boned bulls, ranging in age from 15 months up and in splendid condition.

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We have 20 head of two-year-old registered Shorthorn heifers, straight Scotch and Scotch-topped breeding, all safe in calf to the bulls Texas Sultan, Skylight, and Roan Hero, which we bought in Texas at a right price on account of the recent drought there, and which we will SELL RIGHT. TUBERCULIN CERTIFICATE WITH EACH ANIMAL. These heifers are a little thin, but are picking up fast and are the largest herd of equally well-bred females ever offered the trade in California.

WE ALSO OFFER

40 REG. SHORTHORN BULLS 6 MOS. AND OVER.

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Also a fine lot of Fall pigs.

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together in sympathy, interest and understanding. It would give them all points as to what distinctive improvements are and would make it easier to attain them. Instead of being anchored away each by himself with no cattle of his kind but his own, and apt to get conceited and self-satisfied, he would be continually punched in the side by his neighbor and waked up to do better things which he might never see or think of if he saw nothing but his own work. Besides, he could freshen his own blood and help his neighbor to the same end, at a fraction of what it now costs to get new blood from a distance. And then when a community of breeders of the same breed has attained some increase, it invites purchasers who desire to buy in large numbers for their own use or for distribution to scattered clients. Such a community could fill a car of choice bulls, bucks, boars or what not and not cause a buyer to waste his time and money chasing around

the State picking up things here and there. But we are only roughly suggesting this desirability of building up geographical homes, of considerable area, for the different breeds in California by community interest—not merging individual interests at all in purposes or property, but simply feeling the touch of elbows as each one does as he likes, but for mutual interests builds up the name and producing capacity of his district and gives it world fame as the place to go when its kind of thing is desired in highest quality and in quantity to suit.

ALFALFA AND CORN FOR SWINE.

To the Editor: What is the feeding value of broom corn seed for swine, as compared with Egyptian corn when fed with alfalfa pasture and when fed in a dry lot? What would be the proper proportion of alfalfa hay to grind with (1) Indian corn, (2) Egyptian corn, (3) broom corn; to secure a balanced ration (1) for fattening, (2) for growing shoats?—A. J. S., Princeton.

[Answered by Prof. J. I. Thompson, University Farm, Davis.]

Broom corn seed has about 90 per cent of the feeding value of Egyptian corn when fed either in connection with alfalfa pasture or in the dry lot. It is generally considered not so palatable, however, and should in all cases be ground. It is not very generally used.

If the growing pigs weigh 50 to 100 lbs. they may be fed about one-fourth as much alfalfa meal as of Indian corn when at the 50-lb. weight, and this amount increased up to 30 per cent of the weight of the Indian corn by the time the pigs weigh 100 lbs. From 20 per cent to 25 per cent of alfalfa hay would be sufficient to feed with the Egyptian corn and with the broom corn. If the shoats are being fattened for market, 10 to 12 per cent of alfalfa will probably be all that you can use and get sufficiently rapid gains.

HORSE'S SKIN SCABS.

To the Editor: A horse's skin rises in patches sometimes two inches in diameter, turns to scab, and comes off. The belly is worst affected, but there are scabs around all the large veins. Between her eyes also the hair is off. Before it became so bad, I noticed little pink spots. Sheep dip which I have been using regularly for three months, does not seem to cure it. The horse is young and otherwise in good health.—H. D., Vacaville.

[Paint the diseased places with tincture of iodine every other day and give Fowler's solution in ½ ounce doses twice a day.]

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OPEN AND BRED GILTS
BOARS.

Breeding and Individuality
Right

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Stout Build. Big Type.

April Boars now ready for
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Shropshire and Merino Sheep
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Shorthorn Cattle

Shropshires sired by rams imported by me from England.

HILLCREST LAD,

Imported 1911.

SHENSTONE CAVENDISH,

Imported 1913.

Individuals and Carload Lots.

A Few Shorthorn Bulls for Sale.



HILLCREST LAD,
1st Prize State Fair, 1911.

Insure your feed supply against
early frost and rain with

REMCO SILOS

The early cessation of the rains last spring and their unusually early opening this fall should be a warning to all feeders of livestock, especially dairymen, to no longer neglect the addition of silos to their equipment.

It is not yet too late to order a Remco silo to save your crop of corn from the frosts likely to follow the early rains, or to save your last cutting of alfalfa.

A Remco silo is your cheapest insurance against all such losses. Send in your order early and avoid delay.

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Catalogs and Barn Plan Books Free.

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Prince Alcartra Korndyke,
Best bred son of Tilly Alcartra.

Our supply of these young sires is always limited, but we have a few now which we are offering at very reasonable prices.

Write us at once, or call and see the herd.

J. S. GIBSON CO., Box 97, Williams, Cal.

"THE NAME GIBSON INSURES QUALITY."

At prices within reach of
every Breeder and Dairyman.

When you buy a son of our herd sire, Prince Alcartra Korndyke, you get more than a Holstein bull with registration papers—you get a grandson of the world's greatest milk cow out of a high-testing A. R. O. dam. Our herd of females has been developed into one of the best in the State.

Live Stock and Dairy Notes.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

DAIRYMEN AND DAIRYING.

C. E. Kent of Stillwater, Nev., recently placed milking machines on his dairy.

F. W. McCulloch of Fernley, Nev., has a number of registered milking Shorthorns.

The first annual stock show which was held at Orland, Oct. 18, was an unqualified success. The prime object of the show was its educational feature. The event brought out 500 people. The auction sale was well attended and practically everything offered found a buyer.

Harold B. Rhoades, the only son of Col. Ben. A. Rhoades, whom he is training to succeed him in the live stock auction business, made his maiden effort at the recent sale of Holsteins on the Baldwin ranch and acquitted himself most creditably. He promises to make a worthy successor to his father.

George Wendt, in charge of the purebred herd at Vina, Tehama county, owned by the Stanford University, reports that they have recently done some official seven-day testing with records up to 25.85 pounds butter. Three others made above 22 pounds and a two-year-old made over 16 pounds. He states that they expect to put eight more cows on test at once.

Dr. Charles W. Keane, State veterinarian, believes that when all the tuberculin tests have been made under the State pure milk law, which became effective October 1, 1916, records will show that about 16 per cent of all the cows inspected reacted to the test. Milch cows on dairies adjacent to the larger cities, including Los Angeles, San Francisco and Alameda county, show a greater percentage of tuberculosis than the herds in the more sparsely settled districts.

Jay Dutter, who recently acquired the position of manager for the Henderson Company's herd of registered Holsteins near Galt, Sacramento county, writes that among other improvements which are being installed at that ranch is a fully equipped cheese factory in charge of Chris Kolbeck, an expert cheddar cheese maker from the U. C. Farm at Davis. He states that they are also doing a lot of official testing and have some very promising young heifers that will doubtless be heard from later.

Arthur Gregory of Redlands, who, last spring, bought 525 acres of land near Byrn Mawr, is now stocking it with Holstein and Jersey cattle and is fitting up an up-to-date dairy farm. Two cottages for dairy workmen have been built and an office for the foreman. An up-to-date creamery building has been built and a large concrete milking barn and shower baths for the cows. Four large silos and two big hay barns have been erected, the whole when finished making it one of the most complete and extensive dairy farms in Southern California.

SWINE AND SWINEMEN.

The Dos Hermanos Ranch, owned by Duveneck & Pickersgill, started in the purebred hog business with 10 sows purchased from Southworth of Napa, heading their herd with a 700-lb. year-and-a-half-old boar bought from Curtis of Napa.

The Whitehall Estates Co. at Tracy have recently sold 12 head of Berkshire sows to the Kings County Land and Cattle Co. of Corcoran, Kings county. These sows were of Rival's Champion Best breeding, the former company having 20 brood sows of that breeding.

At the Napa State Hospital the industry of raising hogs has turned out to be very successful. There are over 600 hogs on the farm of that institution, and as supply has increased faster than the demands of

the hospital it was determined to make ham and bacon instead of buying at contract prices. In the event that more meat is cured than can be consumed at the hospital it will be sold at market prices to other State institutions.

W. A. Young of Lodi, Cal., has recently made the following sales of Poland Chinas: Sow to Louis J. Marsh, Concord; sow to N. C. Anderson, Rio Vista; sow to C. Claffey, San Francisco; three sows to Chas. Olsen, Atwater; sow to E. M. Robinson, Napa; sow to H. I. Marsh, Modesto; sow to Leslie McCracken, Ripon; sow to Mr. Quackenbush, Lodi; boar to C. D. Bovard, Yerington, Nev.; boar to L. C. Mullis, Mendota; boar to Mr. Winters, Ione; boar to Mrs. Blascow, Newark, Cal.

D. O. Lively of the California Swine Breeders' Association, in a lecture on hogs at the Los Angeles Chamber of Commerce last week, said that Southern California was an ideal place to raise hogs and that there was money in hog-raising. As an evidence of the interest taken in this matter of hog-raising, he said, a convention of hog raisers of the State would be held in Los Angeles in January. Mr. Lively spoke of the great success in hog raising in the Imperial Valley and reminded his hearers that 70 per cent of the hogs and hog products used in California came from Idaho and east of the Rocky Mountains. This should not be. California should raise fully 75 per cent of the hogs used, if not the whole of its supply, and there is no reason why it could not be done at a profit.

BEEF CATTLE.

Although range conditions in the mountains of San Benito county were ideal for some time after the early October rains they are drying up rapidly at this time.

Chas. Hawkins, manager of the Pacheco Cattle Co. at Hollister, will leave next week for a trip through the Middle West where he will inspect a number of Shorthorn herds in the hope of securing a bull suitable to use on his registered Shorthorn cows.

The Rose Crest Farm of Perris won some valuable prizes on its stock exhibit at the Riverside Fair this year, among others 1st on Percheron stallion over 3 years; 1st on Shorthorn bull over 3 years; 1st, 2nd, and 3rd on cows over 3 years; besides 2nd on aged boar and 2nd on aged sow in the Berkshire class.

According to reliable reports there are no less than three California farmers, now in the East or who have representatives in the East, securing foundation herds of registered Shorthorn cattle. Besides these there are several of the older breeders of both Shorthorns and Herefords who are buying high-priced herd sires this fall.

The Barco Ranch at Hollister is offering a carload of choice Shorthorn bulls which they purchased in the East last spring but which they have not shipped to their own ranch because of lack of feed. Mr. Colomb, manager and part owner of this ranch, states that he may make a trip East this fall and bring out another carload or two of females to add to their already choice foundation herd.

H. L. Murphy of Sacramento county wires that the Shorthorn sale held by W. A. Forsythe and Sons last week in Missouri averaged \$493 for 52 head, the 44 females averaging \$510. He bought the heifer Miss Orange 12th, a winner of the Shorthorn breeders' trophy this year, and a show cow, Maud Alexandria. He is also bringing out some Scotch bred females and some Milking Shorthorn heifers for California customers.

LIVESTOCK DIRECTORY.

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SWINE.

Poland Chinas.

SMITH'S POLAND-CHINAS—Sows and gilts bred to Joker, First Prize Boar at the Wisconsin State Fair, 1915. These sows and gilts, sired by Iowa Wonder, who is a son of A Wonder, the most celebrated Poland-China boar, living or dead. Litters from this mating are the best I have ever seen anywhere. Prices low quality considered. Will sell one or a carload. As a special inducement each purchaser will be given a year's subscription to the American Swineherd, the best swine paper published and a copy of the Handbook on the Sow; also a copy of the Pig Feeders' Manual. Geo. A. Smith, Corcoran, Cal.

MAKE BIG MONEY with our big-type Poland-Chinas. Smooth, easy feeders that make greatest weight in shortest time at lowest cost, topping the market at 225 lbs. in 6 months. 300 head, both sexes, all ages, reasonable prices. Some fine bred sows and gilts, and top young boars. Best Eastern blood lines. Satisfaction guaranteed. Ranch in Tulare county, but address owner, R. H. Whitten, Route 5, Box 647, Los Angeles.

GRAND CHAMPION SUPERBA POLANDS—A few choice spring Superba boars ready for service. Sows bred to Superba for fall litters. Prices reasonably low. Rough's Greenfields, Arlington Station, Riverside, Cal.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated, purchaser to return crates. E. A. Hall, Watsonville, Cal.

REGISTERED POLAND-CHINAS—Prolific, pabulous, profitable porkers. Choice boars now ready for service, \$25 each. Weanlings, \$15. Dr. J. A. Crawshaw, Hanford, Cal.

LAKESIDE STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Linn, Linview, Route 4, Modesto, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trehwitt, Box 82A, Hanford, Cal.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

POLAND CHINA HOGS FOR SALE—Registration papers furnished free. O. A. Cooley, Durham, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 27A, Davis, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

REAGANS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for Fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

WINONA BERKSHIRES—Won at the 1916 California State Fair and W. A. B. C. eighteen prizes, with four firsts and two championships. F. R. Steel, Winona Ranch, Route 1, A-Box 105, Grant's Pass, Ore.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfossel, Berlin, Cal.

CHOICE REGISTERED BERKSHIRES—Line bred Rival's Champion's Best and Masterpiece pigs, \$15 each, trios \$40. Service boars, bred sows, and gilts at reasonable prices. W. H. Waugh, Riverside, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

BARGAINS IN BERKSHIRES—Write today for our Special List of high-class boars and open gilts. Both the offerings and prices will please you. Silver Birch Farms, Box P. P., Newnort, Wash.

REGISTERED BERKSHIRES—For sale bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Norato, Cal.

REGISTERED BERKSHIRES of prize-winning blood. Write for description and photos. Imperial Stock Farm, Morran Hill, Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Perris, Cal.

SPECIAL—Six good service boars and a few sows in pig to Premier Leader due to farrow in October. Geo. M. York & Son, Berkshire breeders, Modesto, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Weanling pigs, \$10 each. G. A. Casey, R. 7, San Jose.

BERKSHIRES—Carruthers Farms, Mayfield, Cal. Second annual sale, August 2, 1917.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

BERKSHIRES—Butte City Ranch, Butte City, Cal. See our ad in another column.

CHAS. GOODMAN—Breeder of high-class Berkshire Swine. Williams, Cal.

Duroc-Jerseys.

DUROC JERSEYS—My hogs won highest honors at State Fair, taking first prize herd, first prize sow, second prize boar. Were the largest of their age exhibited. Stock all ages for sale. Prices reasonable. Breeding and satisfaction guaranteed. Haden Smith, Route 1, Box 84D, Woodland.

DUROCS from River Bend Farm, St. Helena, Cal., are large type, smooth, rangy, with fine backs and deep cherry color. We sell only those we'd like to keep in our herd. Don't write us if you want cheap stock.

RANCHO RUBIUS DUROCS—A few choice gilts bred for October farrowing; also good service boars, tried sow and weaned pigs, priced right. Elmer Lamb, Ceres, Cal.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

DUROC JERSEYS—Herd boars. E. N.'s Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs \$10. H. E. Boudier & Son, Napa.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class pure-bred hogs, both sexes, any age.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROCS—All ages. Either sex. W. A. Pack, Hollister, Cal.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

REGISTERED DUROC JERSEY SWINE—Frederick M. Johnson, Napa, Cal.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

Other Breeds.

BILLIKEN HERD OF IMPROVED CHESTERS—Prize winners at the State Fair. The Farmer's Utility breed. Size combined with quality; producers of big uniform litters of growthy pigs. 15 bred gilts due to farrow in Jan. boars and sows of spring farrows; first class and extra well developed; best blood lines obtainable; prices reasonable and every one cholera immune. Write for special prices and circulars. C. B. Cunningham, Mills, Cal.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

LARGE YORKSHIRE SWINE—Gilts to farrow in September and October. Service boars and Spring pigs. Both sexes. Riverina Farms, Paradise Road, Modesto, Cal.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

REGISTERED IMPROVED CHESTER Whites—Grizzly Bear Ranch, East Auburn, Cal.

DAIRY CATTLE.

Holsteins.

FOR SALE—A carload of very fine registered Holstein heifers. They are sired by bulls of great producing ancestry and from dams of splendid type and large production. Some are bred to Prince Juliana Walker, a First Prize son of Prince Geleche Walker. Several will be old enough to breed next month. Some are calves. This is a great opportunity for some one who would like to start with a small capital as they will be priced low for a quick sale. I have an extra well-bred Kordyke bull to go with them whose granddam was a former World's Record cow. Write for full information or better some and see them at once if you are looking for a real bargain. Sold subject to tuberculin test. Geo. A. Smith, Corcoran, Cal.

REGISTERED HOLSTEIN BULL CALVES—Sired by Lorena Kordyke Alcarra, whose dam made 29.75 pounds butter fat in seven days as a four-year-old. J. M. Campbell, Escalon, Cal.

REGISTERED HOLSTEINS—Grandsons of King Begis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

REGISTERED HOLSTEINS—Have a few Bulls from El Prado Wayne Colantha, whose dams and sires' dams average per cent fat at 4 years is 5.01. See my stock at the State Fair. J. W. Benoit, Route C, Modesto, Cal.

REGISTERED HOLSTEINS—Sired by King Kordyke Hengerveld Ormsby 53822. Dam Pietertje Maid Ormsby 78051, world's record when made 35.58. Send for pedigrees. Geo. Koulias, Modesto, Cal.

TULARE GUERNSEY AND HOLSTEIN Farm is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

THE MCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

WANTED—High-Grade Holstein Milk Cows. Interested in nothing but the best. Address Box 340, Pacific Rural Press.

A SPLENDID 6-month-old Holstein bull with good A. R. O. breeding for \$135. E. W. Abbott, Milpitas, Cal.

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BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chico, Cal.

BREEDERS OF REGISTERED HOLSTEIN
cattle and Berkshire pigs. Whittier State
School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. Morris
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CREAM CUP HERD—Registered Holsteins.
Pontiac bull calves. M. Holdridge, Modesto,
Cal.

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cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

CHOICE HOLSTEIN bulls for sale. No fe-
males. Millbrae Dairy, Millbrae, Cal.

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Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale.
C. L. Morse, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from
A. R. O. dams. B. F. Anderson, Modesto, Cal.

HOLSTEIN COWS for sale with records
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A. R. O. HERD OF HOLSTEINS—Alex
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JERSEY BULLS AND BULL CALVES—
Sons and grandsons of 2 and 3 lbs. cows. None
better. Cheap for quality. N. H. Locke,
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1868. Young bulls from best cows. Rancho
Dos Rios, R. 2, Modesto.

VENADERA HERD OF JERSEYS is now
offering the heifer calves from register of
merit cows with official yearly record. Guy
H. Miller, Route 1, Modesto, Cal.

JERSEY BULLS—Serviceable age. Sons of
Gertie's Lad, who has two daughters that
made over 600 lbs. butter as two-year-olds.
A. A. Jenkins, Tulare.

**BREEDER OF REGISTERED JERSEY CAT-
TLE**—Duroc Swine. Young stock for sale.
W. J. Hackett, Ceres, Cal.

JERSEY BULLS AND HEIFERS from Reg-
ister of Merit Cows for sale. C. G. McFar-
land, R. 2, Tulare.

**YOUNG REGISTERED JERSEY BULL
CALVES** at reasonable prices. O. J. Ames,
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JERSEY BULLS from Register of Merit
cows. C. D. Hayworth, Modesto, Cal.

FRESH JERSEY MILK COWS for sale. E.
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GUERNSEY BULL CALVES from Grand
Champion Bull. Also Hampshire Swine, both
sexes from Grand Champion 700-lb. boar and
Grand and Junior Champion Sow. Bella Vista
Herd, J. W. Henderson, 1st National Bank
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**SCOTCH AND SCOTCH-TOPPED SHORT-
HORNS**—We have the largest herd of straight
Scotch cows in California. Foundation stock
of both sexes for sale; also a choice lot of
range bulls. Barco Ranch, Hollister, Cal.

REGISTERED BULLS by King Korndyke
Pontiac and out of A. R. O. cows. A splen-
did selection old enough for service. Write or
call. J. H. Harlan, Woodland, Cal.

EDGEWOOD FARM GUERNSEYS—First
in the show ring and in official records. Few
animals of either sex for sale. Edgewood
Farm, Santee, Cal.

**BREEDERS OF REGISTERED SHORT-
HORNS**—Milk strain. Choice young stock for
sale. John Lynch Ranch, Box 321, Petaluma,
Cal.

INNISFAIR DAIRY SHORTHORNS—Reg-
istered young bulls for sale. Alexander &
Kellogg, Suisun, Cal.

AYRESHIRE—Registered; all ages. E. B.
McFarland, 412 Claus Spreckels Bldg., San
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F. A. MECHAM ESTATE, Petaluma, Cal.—
Breeders and Importers of Shropshire, Ram-
bouillets and American Merinos, both sexes
Also Red Polled cattle. Take electric car at
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Breeders and Importers of Hampshire shear-

BISHOP BROS., SAN RAMON, CAL.—
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Rambouillets. Hanford, Cal.

HORSES AND MULES.

STOCKTON PERCHERONS again winners
at Sacramento. Get next, brother farmer.
H. G. Learned Producer, Stockton

REGISTERED SHIRES—Black Hawk Stock
Farm. Importers and Breeders, Easton & Ward.
Proprietors Burlingame, Cal.

FOR SALE—Registered Percheron Stallion.
Address E. I. P. Horse Ass'n, R. 5, Box 32,
San Jose.

MISCELLANEOUS.

SAN FRANCISCO LIVE-STOCK EXPORT
Co., Eugene R. Croley, Manager, solicits for-
eign orders for purebred registered and merit
breeding animals and fowls. California has
great diversity of climatic and other condi-
tions that enable us to select animals that
have been raised under conditions similar to
those of the location for which they are in-
tended. We should be informed regarding
these conditions and be allowed ample time
to make selections. Nearly all disappoint-
ments in buying afar are the result of insuf-
ficient information as to conditions or to lack
of time for proper selection. Our plan and
terms for "raising animals to order" to fit
into peculiar foreign conditions is worth in-
vestigating. References: Dun or Bradstreets,
or San Francisco banks. Office 219 Under-
wood Building, 525 Market St., San Francisco.

D. O. LIVEY, 216 Hobart Building, San
Francisco, buys and sells livestock—any kind
—any quantity

DUROCS AND GUERNSEY BULL CALVES
Bulls bred to 900-lb. boar. Ed. E. Johnson,
Turlock, Cal.

BEEF CATTLE.

FAIR OAKS RANCH Willits, Cal.—Young
registered Shorthorn bulls for sale. Sired
by Landsever 379318, grandson of Imported
Vilager 295884.

SHEEP.

Bankers have offered to buy sheep
and sell them on time to farmers in
Pennsylvania.

Eight cars of sheep were con-
signed to the Golden West Meat
Company and Roth Blum & Co. of
San Francisco, from Colusa last
week via the Northern Electric.

HORSES.

Jack London's famous imported
stallion Neuadd died last week at
the stock farm near Glen Ellen. He
was foaled in England in 1908 and
was brought to this country four
years later. He won the California
State championship first in 1912.

Steve Lorten, representative of
Allbright and Sons, San Francisco,
says that the man who has a horse
for sale any time within the next
four years is going to get an un-
heard-of price for the animal. Mr.
Lorten says there is not one stock
stallion in the whole of France.

MISCELLANEOUS.

El Centro Chamber of Commerce
is planning for a livestock fair for
Imperial Valley.

The University of California will
show its livestock at the Interna-
tional Show at Chicago.

GIBSON BREAKS STATE HOL- STEIN RECORDS.

That California has an excellent
chance of again claiming the world's
long-distance milk cow is the advice
received from Gion Gibson, manager
of the J. S. Gibson Company's regis-
tered Holsteins at Williams.

The cow that gives such great
promise is Winnie Korndyke Cornu-
copia De Kol, who has been on test
since last December and who made
in the first 300 days of her test 1020
pounds of butter from 27,000 pounds
of milk. Mr. Gibson states that she
is still milking better than 75 pounds
of milk a day and is safe in calf to
his herd sire, Prince Alcartra Korn-
dyke. At 272 days after calving
this great cow made 22.53 pounds of
butter from 558.4 pounds of milk
which is the world's record for a liv-
ing cow, only equaled by Aralia De
Kol Burke. Unless something un-
foreseen happens, Mr. Gibson expects
this cow to break the world's yearly
record for milk as she will have to
average only a little over 64 pounds
a day from now on.

Mr. Gibson has been making some
State records with other cows, Hazel
Aaggie of Oakwood Daughter, a
junior three-year-old having just
finished a yearly record of 861
pounds of butter from 21,220 pounds
of milk, the State record for butter.
The same cow made 17 pounds of
butter from 344.5 pounds of milk
in seven days, 304 days after calving,
which is a State record for both milk
and butter.

Another record was made by Inka
Tritomia Walker, a daughter of
Prince Gelsche Walker out of a three-
quarters sister to Tilly Alcartra. As
a senior two-year-old, 254 days after
calving she produced 15.26 pounds
of butter from 445.6 pounds of milk,
a State record for both milk and
butter. This same cow had made
620 pounds of butter from 16,423
pounds of milk the first 266 days of
her test and was still milking better
than 60 pounds of milk a day. Mr.
Gibson states that they have 20 cows
on yearly test and that he is expect-

REGISTERED AND UNREGISTERED
Shorthorn Bulls and Percheron Horses for
sale. Paicines Ranch Co., 320 Sharon Bldg.,
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CROLEY'S CALF FEED with skim milk
will raise fine dairy heifers cheaply. Geo. H.
Croley Co., Inc., 631-637 Brannan St., San
Francisco

HOPLAND STOCK FARM—Registered
Shorthorns. Prices on application. Hop-
land, Cal.

SIMON NEWMAN CO., Breeders of Regis-
tered Herefords. Newman, Cal.

REGISTERED HEREFORDS—H. H. Gable
Diamond G Ranch, Esparto, Cal.

GEORGE WATTERSON—Breeder registered
Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, May-
field, Cal.

DOGS.

THOROUGHbred SCOTCH COLLIES—All
bred from our noted prize-winners. Have a
few 3 months old puppies—very choice. Write
us what you want. Browndale Kennels, Red-
wood City, Cal.

ing the completion of other State
and world records during the com-
ing winter.

SACRAMENTO DAIRYMEN OR- GANIZE.

That the dairymen of the Sacra-
mento Valley who sell market milk
are dissatisfied with the present
marketing conditions was plainly
shown by the meeting held at Sacra-
mento October 25 which was at-
tended by close to 100 producers.

Mr. Jas. Henderson, who presided
at the meeting, stated that he had
made a careful investigation as to
the cost of producing milk and that
it was his belief that the average
cost of producing a gallon of milk
was right around 16½ cents. In
view of the fact that producers in
the Sacramento valley are only get-
ting between 12 and 14 cents a gal-
lon at this time he believes the pro-
ducers must organize or go out of
business.

State Market Director Harris
Weinstock confirmed Mr. Hender-
son's estimate of cost of production
by figures which he secured earlier
in the year in connection with the
producers' association located in San
Francisco. He also offered his as-
sistance to any such association
formed in Sacramento.

The practical workings of a pro-
ducers' organization was explained
by S. N. Ayers, secretary-manager
of the California Milk Producers'
Ass'n of Los Angeles which was or-
ganized June 5, 1915.

At the direction of those present,
Mr. Henderson appointed a commit-
tee of five consisting of F. Morris,
Woodland; J. Guill, Chico; C. E.

Mack, Franklin; H. R. Timm of
Dixon and Mr. Harvey of Galt, who
will in turn name a promotion com-
mittee of 11 dairymen to complete
organization details and secure mem-
bers. The names of this committee
will be given out at an early date.

SAN LUIS OBISPO DAIRYMEN FOR BETTER SIRES.

[Written for Pacific Rural Press.]

We are informed by Prof. E. L.
Westover, in charge of the Dairy In-
dustry Dept. at the California Poly-
technic School, that the meeting of
the San Luis Obispo Dairy Breeders'
Ass'n, held at San Luis Obispo,
October 12, was well attended and
much interest was shown in the ad-
dress of F. H. Scribner of Santee,
one of the leading dairy authorities
in this country, who talked along
feeding, breeding, care and selection
lines of dairy husbandry.

The meeting was presided over by
President A. B. Spooner Jr., and the
constitution and by-laws as sub-
mitted by the board of directors were
read and adopted. There was con-
siderable discussion on the subject
of importing a number of purebred
bulls into the county and it was
unanimously decided to get prices
and information on twenty purebred
sires.

TAMWORTH'S

(The Bacon Hog)

Largest Herd in the State

DUROC - JERSEYS

Mature Stock and Weanlings of both
sexes. Sure to please.

SWINELAND FARM.

W. O. Pearson, Prop. Woodland, Cal.



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Make Fall and Winter
Dairying More Profitable

THERE are special advantages in using the best cream
separator during the fall and winter months. The milk
from cows long in milk is hardest to cream, and like-
wise hardest to separate with an inferior separator.

Moreover, cream and butter prices are highest, so that
the waste of gravity setting or a poor separator counts for most
at this season.

Then there's the sweet, warm skim-milk for stock feeding,
alone worth the cost of a separator in cold weather.

There is surely no reason to delay the purchase of a sep-
arator or to continue the use of an inferior one.

You can't afford to wait until next spring. Let the De Laval
start saving cream for you right now and it will earn its cost
by spring. See the nearest De Laval agent at once, or if you
do not know him, write us direct for any desired information.

DE LAVAL DAIRY SUPPLY CO.

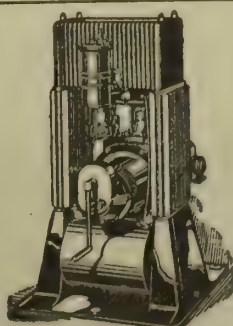
LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST.

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Green Feed Silos, Irrigation Equipment, Centrifugal and Deep
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If your buildings are not wired, send us plans and
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GASOLINE-ELECTRIC UNIT
LIGHTING SYSTEM

Purebreds vs. Mongrels for Pork.

[Written for Pacific Rural Press.]

Purebred hogs return enough more than grades to warrant their purchase, from a pork-producing standpoint alone, according to the experience of S. G. Owens of Madera county who is raising market hogs as the principal product of his ranch.

When Mr. Owens first started to feed hogs, he purchased a lot of mountain-bred hogs for feeders. Unintentionally some of these got with pig to a Poland China boar that was on the ranch so they were reserved at marketing time and the pigs raised.

This year 100 pigs were farrowed that trace back to those sows, being the second cross from Poland China boars. These pigs have had access to alfalfa pasture since weaning time and have been fed grain regularly all of the time. In July it was estimated that their average weight was between 85 and 90 pounds.

Another bunch of 18 purebred Durocs, of the same age and grown under the same conditions for market purposes, averaged 190 pounds or more than twice the weight of the grades. The Durocs in this case are purebreds, but not eligible for registration. The difference in weights is so great that 23 registered sows have been purchased, largely with the intention of making quicker and more economical gains for the butcher trade.

Altogether there are about 300 hogs kept on this place, alfalfa pasture and grain being the chief feeds. All of the fields are provided with self-regulating water troughs. This, with movable shelters, eight feet wide and 16 feet long, enclosed on three sides, constitutes the field equipment.

A central farrowing house is provided near the barn in which all of the sows are confined at farrowing time, which is regulated by breeding so that it comes in September and in the early spring.

At farrowing time the brood sows are fed a ration of rolled barley and shorts, and at all times all of the hogs have access to troughs containing sulphur, charcoal, and salt. As a further precaution against disease, a concrete dipping tank has been built and all of the hogs are dipped at regular intervals. Before putting the sows in the farrowing houses these quarters are well cleaned out and sprayed with a strong solution of sheep dip, the stronger the better in Mr. Owens' opinion.

Unless he can turn off a hog weighing between 180 and 200 pounds at seven to eight months of age, Mr. Owens says there is no money in the business. But with proper breeding and plenty of alfalfa and grain he finds it comparatively easy to meet this requirement.

Another Big Holstein Herd on Test.

[Written for Pacific Rural Press.]

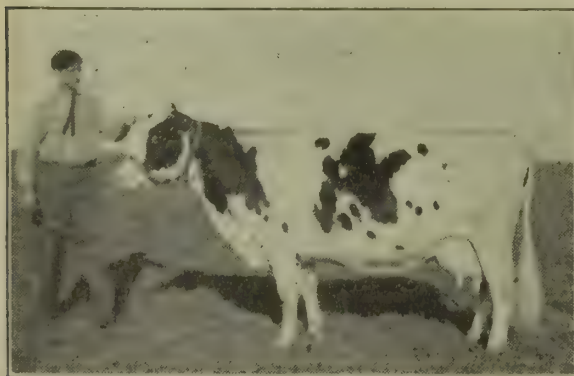
The Bridgford Company at Knighten have just started on 7-day and semi-official test Rilla Canary, who was a prize winner at the Oregon Fair, standing 2nd to Ormsby Lass, the P. P. I. E. Champion. Ten other cows of the Bridgford herd will go

Korndyke Mercedes, first aged cow, and dam of Junior Champion at Sacramento, and Panje Hengerveld De Kol, who has a 22 lb. record as a 3-year-old and who is now giving 35 lbs. of milk per day 17 months after freshening in spite of efforts to dry

her up. The Bridgford Co. is well equipped for record work. Their cows have the breeding and capacity. Their fine island ranch provides the feed. Corn silage, alfalfa, beets, and grain, and their buildings and equipment are up-to-date, having been completely installed within the present year.

At the head of the herd is King

Alcartra Abbekerk, a young bull sired by King Segis Pontiac Alcartra and out of Tidy Abbekerk Princess who has a record of 30.27 pounds as a 4-year-old.



Miss Korndyke Mercedes, First Prize Aged Cow State Fair, 1916, and Dam of Junior Champion.

on test as they freshen between now and Jan. 1. Among them are Finnerne Dream Korndyke who has the highest record as a 2-year-old on the coast (26.37 pounds), Miss

FRESHLY-CUT SILAGE.

To the Editor: I have a silo filled with corn about a month ago. It is still warm. I want to begin feeding it now. Would it injure the cows to feed them so soon on this silage?—E. G., Covelo.

[We know a number of dairymen who begin feeding as soon as the silo is filled, and continue through the various stages of fermentation, without injury to the cows. The corn does not become silage until it has fermented; but cows seem to relish it in all stages.]

GROWTH ABOVE HOOF.

To the Editor: Six months ago my five-year mare got a hard growth above each front hoof. Is it side bone? A neighbor stopped its growth, but it is enlarging again. Will it unfit her for work?—C. N., San Luis Rey.

[This is ringbone. Have your veterinary fire and blister the growths.]

Milk men of Visalia have raised the price of milk from \$1.50 per pint per month and \$3 per quart per month, beginning November 1.

Edgemoor Farm Guernseys



Imp. Itchem May King, 25174.

**Pretty
Productive
Profitable**

A Few Animals of Either Sex For Sale

SANTEE, CALIF.

H. F. SCRIBNER, Supt.

W. H. DUPEE, Pres.

HERE
IS INSURANCE
AGAINST
THIS



The True Blue Pad gives relief from strain on bruised shoulders; aids in preventing galls, chafes and scores.



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Sturdily made for hard continuous use. The pads show horse owners take pride in keeping their horses free from shoulder troubles; besides, it pays to keep a horse free from hurts.

When a dealer offers you a Hercules Harness, Horse Collar, or Saddle, he is offering you THE BEST THERE IS

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THREE BLOCKS FROM THE FERRY

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Please send me, free, a copy of your road map.
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Address _____

Elmer Lamb Closing Out Durocs

AT PRIVATE SALE.

Owing to continued ill health I am obliged to take a year's rest and will sell all my herd of registered Durocs at prices little above the market for common hogs. Everything goes, including State and World's Fair Champions, 25 bred gilts and tried sows, 30 gilts ready to breed for next spring litters. Sows with litters, and weaned pigs, Service Boars, etc. Get my price on what you want. This is your chance and my sacrifice.

ELMER LAMB,

Ceres, Cal.

HOPLAND STOCK FARM REGISTERED SHORTHORN BULLS

REGISTERED BERKSHIRES (Boars, Bred Sows and Gilts)
HERD BOAR, ROYAL POINTER 2nd, 197092, First Prize
Senior Yearling, P. P. I. E.
3 REGISTERED HOLSTEIN BULLS from High-Testing Cows.
SAN FRANCISCO OFFICE. 1210 FLOOD BLDG.

Veterinary Queries and Answers.

[Answered by Dr. H. B. Winttingham, Petaluma, Cal.]

[Subscribers wishing an immediate reply should send money order for \$1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

SWELLING ON BELLY.

To the Editor: A mare that has been running on pasture had a small swelling on her belly that increased till it was swollen from front legs to bag. The swelling was soft at first. It finally left, but the hide is stiff and hard as a drum. The mare walks stiff as if foundered. She eats well, both hay and barley, but has become very thin since being sick.—W. C. R., Sonora.

[Give this mare one dram potassium iodide twice a day in solution. Rub the skin once a day with iodine ointment.]

FRESH COW STRAINS.

To the Editor: A cow that has just freshened gives only enough milk for the calf. She eats hay but won't eat any flaxseed meal. She stands with her back humped as if she were straining. Today her urine was bloody. She was in good condition.—D. M. J., Winton.

[This cow has retained a part of her afterbirth which has become infected. Douch her out twice daily with a solution of a dram potassium permanganate to water one gallon.]

SCABBY SPOTS ON HORSES.

To the Editor: My horses have spots like a bite of some kind. The hair is all off from the spots, and some have scabs. Another horse got a wire cut and screw worms got in.—Subscriber.

[Wash off these animals with lime-sulphur dip every seven days. Wash the cut with a 2 per cent solution cresol three times a day.]

OPERATE AFTER CALVING.

To the Editor: We have been feeding barley hay and have had trouble with the stiff beards causing sore mouths in horses and sore eyes in cattle. A cow soon to freshen has a hard lump under the jaw which is loose in the skin. Will it be better to wait till after calving to operate?—N. M. L., Gridley.

[Have this bunch opened after calving.]

LUMPS ON PIGS' JAWS.

To the Editor: Five out of a litter of seven pigs eight months old have lumps on their jaws. Two have several small lumps close together; one has only one, as big as a fist; another has one still bigger. The lumps do not seem sore and the pigs eat well. Until a month ago they ran in wheat stubble and were fed alfalfa besides. Now they are fed cooked wheat and green alfalfa in a large corral.—H. B., Huron.

[This looks like tuberculosis. Slaughter will determine the trouble.]

SUPERBA BREEDS WELL.

Because we had heard that the Panama-Pacific Grand Champion Poland China boar Superba was not breeding well, we went to see him and his owner, W. H. Rough of Riverside county. In the young orchard close by the big boar's pen were about 45 thrifty young pigs sired by him, all with big hams, good bone, uniform shape, and strong backs. Superba was up on his feet with greetings, thinner than when shown at the Fair, but smooth of flesh, shields not at all prominent, ankles, strong, and back fine.

We were told that he was the only boar on the place, that he would give service quick as a yearling, never had to breed a sow more than twice, no litter by him contained less than 7 pigs, average litter about 8 1-3, one litter 11, of which 9 were raised, all sows on the place littered by him last spring and all were bred to him for fall litters. Do you like to keep track of noted animals in this way?

L. L. Grover of Potter Valley shipped two carloads of hogs to the San Francisco market last week. Jas. Eddie was a heavy consignor to this lot.



The Book of Dairy Books

It's the book, because it's the authority on the breed—the beautiful, ever-paying Jersey.

This book, "About Jersey Cattle," goes way back to the beginning of the breed, shows how it was line bred and protected from mixture by law, and shows why it has developed into the most economic and most persistent milking of all breeds. It gives tests, yields, etc., proving that the Jersey is the money cow—the "Giant of the Dairy."

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everything about a rainy day seems to say
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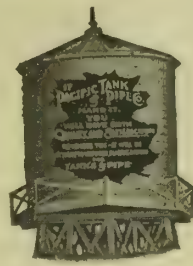
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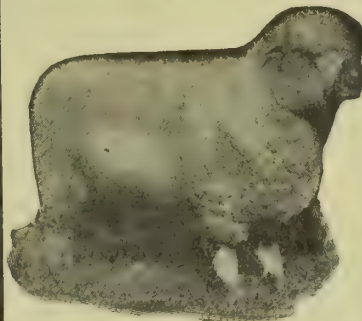
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San Ramon Shropshires

WINNINGS P. P. I. E., 1915.

Aged Ram, First and Second. Yearling Ram, First. Ram Lamb, First, Second, and Third. Champion Ram. Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of Sire, First. Pen of three Lambs, bred by Exhibitor, First and Fourth. Pen of Four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock, one year old, bred by Exhibitor, First. Flock under one year, First. Flock under one year, bred by Exhibitor, First. Produce of Ewe, First. Second and Third. Premier Championship for Breeder. Premier Championship for Exhibitor. A total, including American Shropshire Specials, of 15 Firsts, 9 Seconds, and 6 Championships.

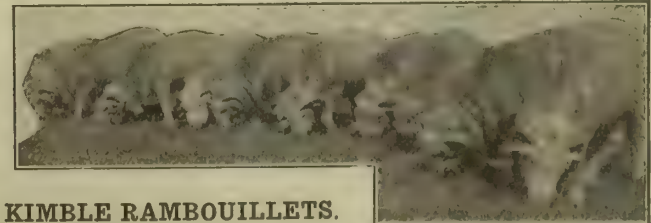
Purebred Registered Rams and Ewes.
Individuals or Carload Lots.
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BASSETT'S POLAND CHINAS



GRAND CHAMPION SOW,
P. P. I. E. 1915; Sacramento 1916.

For many years, at widely separated show rings, under many different judges of varying type ideals, my Poland Chinas have been consistent prize-winners. My herd is large, and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished.
Young Stock, \$30 Up.
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These sheep are purebred, large and smooth, with heavy fleece of fine, long, staple, white wool. Yearling rams and ewes. Individuals or carload lots.

Prices reasonable. Correspondence solicited.
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CATTLE FEED FOR SALE

I have both wild feed and hay to be sold together, and fed out by owner. Write me at once for prices, etc.

JAS. McCORD,

Hanford, Cal.

California Hog Book

BY W. S. GUILFORD.
Price, \$2.00 per Copy. Postpaid.

HOLSTEINS AVERAGE \$338 AT SACRAMENTO.

[Written for Pacific Rural Press.]

The first Holstein sale of the California Breeders' Sales and Pedigree Co. at Sacramento, October 26-27, was a decided success, totaling \$47,405 for 140 head or an average of \$338.60 each.

Though not the highest average that has been secured in the State, it was the consensus of opinion that the majority of the animals were well sold. Two reasons can be assigned for this, namely, the responsible and generous guarantee given on every animal sold as to health, breeding ability, etc., backed by a thoroughly trustworthy organization of business men and breeders, and secondly the terms of the sale, which required but one-third cash provided the purchaser could show satisfactory bank references. Both are conditions which are thoroughly constructive salesmanship practices with purebred livestock and well worth remembering.

It was a well balanced sale in sex, age, and average prices received, 58 heifers averaging \$345.50, the 51 cows averaging \$332.25 and the 31 bulls, \$336.10. Over 40 buyers participated, a number of whom are establishing purebred herds in the State. All of the cattle sold will remain in northern and central California.

The feature of the sale was the buying of Gion Gibson, manager of the J. S. Gibson Co. at Williams, who purchased 22 females at an average of over \$520. Included in this lot were four underyear daughters of King Korndyke Sadie Vale consigned by E. J. Weldon, that brought an average of over \$831, one going at \$1350, the top price of the sale. He also paid the second highest price for females when he purchased Charlotte Walker 2nd, an aged cow from the Morris herd, at \$1,000.

What was admitted to be the greatest bull bargain of the sale was the seven-month-old grandson of King Valdessa, consigned by Toyon Farm and bought by the J. H. Harlan Co., Woodland, for \$500.

The popularity of Prince Gelsche Walker was expressed by the manner in which animals of his relation sold, his son Prince Juliana De Kol Walker going to Frank Helm of Fresno at \$1025 and one of his young grandsons out of a 27-pound dam going to Whaley, Guerin, and Higdon of Tulare for \$900. Females carrying his breeding also sold well regardless of individuality. The same thing applied to females bred to King Morco Alcartra, son of Tilly Alcartra, indicating that these two strains are the popular ones with a large number of breeders.

The Gotshall Cattle Loan Co. of Ripon were heavy purchasers of females, securing 13 head that will be added to their foundation herd. Other buyers were Frank Helm, Bert Vogel, C. H. Williams, Palo Alto Stock Farms, J. L. Lane, Toyon Farm, C. A. Miller, F. W. Hansen, R. F. Guerin, F. Hatch, Henderson Co., G. Robinson, Rev. Hobart, Geo. R. Carr, Clifford Farms Co., Mr. Yocum, F. M. Grier, F. Kiesel, A. A. Merkeley, Mrs. Anna Donders, L. A. Driver, Ginn & Son, I. G. Zumwalt, Alex Whaley, W. Higdon, Mahas Bros., Napa State Hospital, J. T. Cooper, H. H. Sturgill, H. Hewins, T. J. Cox, J. F. Troncatty, A. W. Morris, Bridgford Co.

BERKSHIRES AT THE NATIONAL SWINE SHOW.

[Written for Pacific Rural Press by H. L. Murphy, Perkins, Cal.]

The first National Swine Show held at Omaha, Nebraska, and which I attended, was undoubtedly the greatest show ever held in America. I would roughly estimate that about 1700 head were shown, and much credit is due the management for the manner in which the show was conducted.

Pacific Coast breeders should give due credit to Messrs. Talmage, Bunn, and Clark Bros. for the fine showing they made. It was a long and hard trip on the stock they showed, but

they came through it with ribbons to their credit and established the fact that the Pacific Coast is on the map in the Berkshire world.

The Berkshire aged boar class brought out eight entries, all of excellent type and heavy bone, Long-fellow Double Rival being placed first, senior and grand champion. There was little choice between the first three senior yearling boars, all being heavy boned, smooth and carrying wonderfully arched backs. Silver Tips 7th was placed first. If the junior boar pig Winona Royal Champion 5th, shown at Sacramento could have been here he would have won easily in his class.

The aged sow class was one of the

finest shows I have ever seen with wonderful type all down the line. Dukes Champion Lady 4th was first and senior and grand champion female. The aged herd and herd bred by exhibitor shown by Corsa and the four sows shown by Iowana Farms were the pride of the Berkshire show, the latter having won all over the circuit which is some record in this country.

While here I purchased two sows at the Berkshire Congress sale for Arlington Smith, one an under year sow, Iowana Queen 29th of Rival's Champion breeding on both sides, and the other an under six months sow, Iowana Peaceful 30th, a Rival's Champion and Charmers Duke sow.

I also purchased six head for our own herd including Riverby Princess 6th, a full sister to the P. P. I. E. grand champion sow, Iowana Peaceful 8th, Rookwood Lady 113th, Penrith Belle 2nd, the senior yearling boar Artful King 11th, second prize winner at the National Swine show.

Besides the Berkshires I have purchased three carloads of Short-horn heifers and bulls in Missouri, Nebraska, and Iowa that will be on our home ranch near Perkins, Sacramento county after November 10.

There are about half as many sheep as there are people in the United States.

Your HUDSON SUPER-SIX Will Advance \$175

You who now own a Super-Six will gain in the increase—no change in models

Your Super-Six will be worth more next year. And those who buy then must pay \$175 more. When cars under way are completed we must add to the price the added cost of materials. Price advances December 1st.

This is another unexpected attraction in the Hudson Super-Six.

The usual car, the first season, depreciates some 30 per cent. In addition to that, on later models makers often reduced the price. So the one-year drop in value averaged 40 per cent or more.

The Super-Six motor—almost without friction—hardly depreciates at all. And that's the chief part of a car.

The Super-Six price will advance with materials for we never shall lessen our standards. So December 1st, when materials on hand are exhausted, the price will advance \$175. And you who own the Super-Six will share that added value.

No Pretensions

That very announcement will reveal the strength of the Hudson position. Most weaker cars, we believe, will not dare to advance. Some way will be found to avoid it.

But the Hudson Company, on its Super-Six, will never make pretensions.

Hudson profits, considering our size and output are very small indeed. They have always been so, and all insiders know it. Our very balance-sheet proves that our margins are minimum.

On December 1st, we start using materials bought under this year's contracts. Prices on all of them have advanced enormously.

On a Hudson-grade car makers can lessen the quality without making the difference apparent at once. But that would be treason to Hudson standards.

So we do—and do frankly—what is obviously necessary. We add the extra cost of materials.

No Advance on Sold Cars

You who have already ordered—either open or enclosed Super-Sixes—will get delivery at the price agreed up to December 1st.

And many Hudson dealers, probably, have some cars yet to sell of our present production. We have 3500 cars under way, all of which will be sold at present prices.

If you can get one, get it. Buying now will save you \$175. And the present model will not be changed, unless in some minor refinements.

Another World Record

The Super-Six, as you know, holds a hundred records which no other car ever met. These include all the world's stock touring car records up to 100 miles. They include the 24-hour record of 1819 miles, where we broke the stock car record by 52 per cent.

They include the Pike's Peak hill-climb—the world's greatest event of its kind. The Super-Six won over 20 competitors.

Now we add the ocean-to-ocean record—from San Francisco to New York. The most sought-for record in America. That trip was made by a Super-Six in 5 days, 3 hours and 31 minutes—beating the record by 15 hours.

And that same car turned around at New York and went back to San Francisco in faster time than any other car ever made the ocean-to-ocean trip. It was the first car ever to make a round trip across the continent against time. The time for the round trip was 10 days, 21 hours, 3 minutes. That was only 2½ days longer than the best one-way trip made by a famous eight.

So the Super-Six today stands supreme. And there is no probability that a rival can match it, because we own the patents.

These are all-important facts.

Phaeton, 7-passenger . . . \$1475	Touring Sedan \$2000	Town Car \$2750
Roadster, 2-passenger . . . 1475	Limousine 2750	Town Car Landaulet . . . 2850
Cabriolet, 3-passenger . . . 1775	(Prices f.o.b. Detroit)	Limousine Landaulet . . . 2850



HUDSON MOTOR CAR COMPANY, DETROIT, MICHIGAN

Raising Poultry for Profit

ZEAS FOR HENS.

To the Editor: In the Pacific Rural Press of Sept. or Oct., 1915, was an article by Geo. H. Croley, in which he quotes from a book on Indian corn or maize (Zea Mays). The author states this maize is the staple crop of South Africa, is a fodder grass, grows 7 to 15 feet tall in four or five months, produces 15,000 to 30,000 pounds of green fodder to the acre. Can you tell me where to procure the seed; amount to sow per acre in drills, distance apart between rows, time of planting, and whether the assertions regarding growth and amount it would yield are approximately correct?—L. A. B., Oakland.

[Answered by Geo. H. Croley.]

The maize, Indian corn, or Zea Mays, is the ordinary corn that forms on a cob, the corn that is so extensively grown in the Middle West of America. There are many varieties and they all make good poultry greens. The sugar or table varieties do not seem to be superior to the ordinary yellow or white grain sorts that may be procured at most feed stores.

Poultry raisers generally have for years been so indifferent to the value of growing corn stalks for use as poultry greens, that I wrote the articles in a peculiar manner to create somewhat of a disturbance and thus wake up the poultry farmers to its value. I am told that it accomplished the purpose.

It is wonderful what a quantity may be grown on a small plot of soil (even a very heavy soil that is not considered good corn land), but it must be properly prepared.

This spring I sowed broadcast a small plot of ground that had been prepared as stated in the article. This spring it was simply spaded; no manure was added. Adjoining this plot was similar soil that had not been thus prepared. We sowed both plots at the same time, with the same seed, and treated both exactly alike. We kept pulling the most vigorous stalks as they outgrew those about them, and the result was amazing.

Surely the prepared ground produced ten times the quantity of greens we took from the untreated ground and it was more tender and juicy.

For convenience we sow broadcast in rows about a foot wide and leave about a foot for a walk between the rows.

Time of planting April 1 to Oct. 1. We have some planted about Oct. 1 that is more than two feet high, but we must feed it before we get frost.

POULTRY QUESTIONS.

[Answered by Susan Swaysgood, Pomona.]

Ducks Have Gizzards.—You published the statement recently that ducks have no gizzards!—Subscriber.

That was a mistake. Ducks have gizzards but no crops, which we intended to say in the article mentioned. Everything in feathers has a gizzard, and in ducks, the feed goes directly to this organ.

Hens Sing but Do Not Lay.—I have some old hens that are singing constantly and appear as if going to lay, but they do not. They are getting their new feathers and not all

the old ones are fallen yet. If I feed them well will they lay soon, or would you advise me to sell them now? When a hen sings is that a sign that she is a layer?—Mrs. P. T. W.

I certainly would not sell hens that are so nearly molted. It is the best way for hens to molt easily, because if all the old feathers were shed at once it is very hard on the hen's system to make even a slight covering for the body all at once. Nature tries to do that where a hen is entirely naked but often the hen dies under the strain. A singing hen is almost always a good laying hen, and the fact that these hens sin now while in the molt is evidence that, if fed right, they will lay just as quick as they have their new suit fitted on.

Chicks Have Pox.—I am having trouble with chicken pox and would like to know something of the method and cost of vaccination for pox. Where can vaccine be bought and would it pay to vaccinate chicks three weeks old from good stock after they had become badly infected?

You can obtain the vaccine from the University of California. The cost is about 1½ cents a head and the hypodermic syringe with which the vaccine is injected costs \$2.50. You write to the University, addressing your letter to Veterinary, state what you want and how many you wish to operate on. Dr. Wintringham of Petaluma also has a vaccine for this trouble. I would not want to assume the risk of vaccinating such young chicks. I would prefer to use a good salve made by mixing one part finely powdered iodoform to twenty parts of vaseline. Apply to the chicks' heads, then take a little sponge and dip it in tincture of iron and just wipe the mouth of every chick with the sponge for a few days in succession, feed the chicks all the nourishing food they will eat and that is about all that can be done for small chicks. If you have a large number, spray them at night on the roost. This is really more successful than a person would imagine; but having tried it several times, I know it works most successfully, besides being cheap and easy to apply. For small chicks I would spray with a teaspoonful of creolin to a quart of warm water. For hens, use Kresol Dip No. 1 and make it as strong as for dipping sheep.

Ducklings Die Suddenly.—Why do so many of my ducklings die? They mostly appear well until a few minutes before they die. Then they begin to tremble and are unable to stand. They also run a little at the eyes and mouth. I feed sweet mash several times a day; do not let them in the water until two months old.—Mrs. F. J. H.

You answer your own question. It is too bad you had to wait for me to answer, but anyway you will know now. Never let ducklings into water until they are fully feathered. The ducklings have cramps and that is all. The cold water inside that they have drunk in swimming, and that outside is too much of them.

REMOVING COCKS' SPURS.

[Written for Pacific Rural Press.]

Cocks with long spurs often tear

out feathers and even wound the flesh of hens, besides making themselves awkward.

The proper treatment for spurs, according to J. B. Roe of Los Angeles county, is to touch them with a hot iron when they are just starting.

But if you buy breeding cocks with long spurs, do not saw off the spurs; for that is cruel and the bleeding sets the fowls back or even kills them sometimes. Remove the spurs without bleeding, by use of a small ordinary rubber band not bigger than enough to slip over your thumb. Stretch it tightly around the base of a spur, wrapping several times until it gives good pressure. If it does not stay close to the cock's leg, file a slight notch at the base of the spur with a three-cornered file. Leave the rubber on until the spur falls off, which is usually within 30 days.

If for any reason long spurs are to be left on cocks, they can be rendered harmless to hens by covering with a piece of small rubber tubing.

POULTRY NOTES.

The Coalinga Poultry Association will give a poultry show November 15 to 18.

If you feed sour milk to poultry, do not feed sweet milk occasionally, as that disturbs digestion, says Mrs. C. H. Hosford of Riverside. She prefers sour milk for poultry because of its acid effect on the intestines.

Eighty thousand hens in the Riverside and Gardena districts have been signed up for the new egg marketing plan proposed by the State market commissioner. The new organization is to be known as the Poultry Producers of Southern California.

The products of more than a million hens have been combined for marketing purposes through the organization of the poultry producers of Central California, a co-operative marketing association, formed under the auspices of the State Market Director.

While geese and chickens will live without animal food, though they will not lay eggs or look well, ducklings can scarcely be raised at all without a liberal supply of animal food. What don't die will be stunted and ragged looking if even they live to get feathers.

The best pen of poultry at the Fresno Fair was adjudged to be the Buff Orpingtons shown by J. J. Graves of Oak Shadows Farm, Redwood. The birds were large, glossy, clean, alert heavyweights which drew three championship and one first in other classes.

If you kill or capture a wild duck bearing an aluminum band around one leg, send the band to the Bureau of Biological Survey, U. S. Dept. of Agriculture, Washington, D. C., which endeavors to determine the longevity of individual ducks and the routes of migration of the species.

M. A. Schofield and A. C. Olsen have opened a \$12,000 chicken-raising plant at Van Nuys. The plant contains five double brooders, which house 2,000 chickens each. An addition of five brooders will be made next year, and the capital increased to \$20,000. M. A. Schofield, the head of the firm, is president of the Federation of Poultrymen of Southern California.



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PRICE PER GALLON:

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Colors cans	cans	bbbl.
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Poultry Breeders' Directory.

TURKEYS, DUCKS AND GEESE.

THOROUGHbred FRENCH ROULEN Drakes, \$3 to \$5. All awards at San Jose. Every bird a winner. Eggs \$1.50 and \$2.50 a setting. Emma V. Miller, Farmington, Cal.

HART'S BRONZE TURKEYS AND EGGS.—Large reduction in price of stock. Order now for fall delivery. Free Circulars. Albert M. Hart, Clements, Cal.

CHICKENS, CHICKS, EGGS.

BARRED PLYMOUTH ROCKS.—"The kind that Win and Lay." Eggs for hatching and choice stock for sale. Have bred Barred Rocks for over nineteen years exclusively. Write for catalog showing winnings at California's leading shows. Chas. H. Volden, Box 398, Los Gatos, Cal.

INCUBATOR CHICKS.—Thoroughbred White Plymouth Rock, \$25.00 per hundred; White Leghorn, \$12.50 per hundred. Highest class of stock bred to standard and to lay. Awarded all first prizes at California State Fair 1916. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

BABY CHICKS NOW READY.—Hatches every week. Write for special "Fall Chick" circular. See why Fall chicks pay. R. I. Reds, Barred Rocks, Black Minorcas, White and Brown Leghorns. Campbell Poultry Ranch, Campbell, Cal.

CROLEY'S DRY MIXED INFANT CHICK Feeds for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by Geo. H. Croley Co., Inc., Poultry Supplies, San Francisco.

LARM'S BRILLIANT STRAIN.—Rhode Island Reds. Winners wherever shown. Trapped stock. Cocks, Cockerels, Pullets, Chicks, Hatching eggs. Wm. Larm, 3915 39th Ave., Fruitvale, Cal.

THE SANTA CLARA VALLEY HATCHERY solicits your orders for Fall and Spring delivery in 8 breeds of baby chicks. Order early and get the best. Jos. A. Bihn, Lincoln Ave., San Jose, Cal.

DANISH S. C. W. LEGHORNS.—If you want to increase the size or vigor of your stock or the size and number of your eggs, use one of our cockerels. River Bend Farm, St. Helena, Cal.

HATCHING EGGS from our "Bred-to-Lay" S. C. White Leghorns. Season opens Jan. 1st. The early hatch lays the early winter egg. Booking now. R. H. Dickinson, Dept. IV, Los Gatos, Cal.

BARRED ROCKS, Buff Orpingtons, Indian Runner Ducks. Prize-winning breeding stock. Reasonable. Glendale, Fleming Ave., San Jose, Cal.

EASTMAN'S BREED TO LAY Barred Plymouth Rocks, Chicks, Eggs, Cockerels. Fairmead Poultry Farm, Fairmead, Cal.

WHITE WYANDOTTES.—Blue-ribbon winners. Eggs \$2 to \$5. Chicks, pullets, cockerels. R. W. Stawetaki, Route 2, San Jose, Cal.

HIGH GRADE ANCONAS.—Fancy and utility. Settings, \$3.50. Fertility guaranteed. J. R. Bell, Livermore, Cal.

SICILIAN BUTTERCUP hens and pullets, fancy and utility, for sale. Fine stock at reasonable prices. M. S. Woodhams, San Mateo, Cal.

DAY-OLD CHICKS.—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, Pen Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, Cal.

WHITE WYANDOTTES.—Fine large cockerels, \$3.50. L. Haynes, Chowchilla, Cal.

Mrs. Best's Letter.

My dear Friends: As the season progresses and suits are more in evidence, the array of waists becomes greater. Many beautiful ones in colored crepe with a touch of contrasting color are shown and a great number of the high-priced ones are beaded. They are all soft and clingy and are very high-priced, but so simple in design that it is really not a great task to make them.

They are all long-sleeved and although we hear much talk about high necks, they are still all cut with a V neck and with soft rolling collars of some sort. The thinness of the material has revived the old full corset cover, for the tight brassieres do not look well beneath so sheer a waist. For more dressy wear, the camisoles made of a combination of satin and lace are very good. There is a plain net brassiere on the market for wear under the thin corset cover or camisole.

Petticoats of silk are as gay of coloring as the party dresses and messaline has given way to taffeta as the skirts grow fuller. One of the stores is showing what they term the Rainbow petticoat, an appropriate name, for they represent every color of the rainbow made with pretty flounces and much shirring. Black sateen petticoats for everyday wear are now very well shaped and have eliminated the old-fashioned draw-string at the waist, being finished with an elastic band and snapper. For evening wear with the party coats, a yard of tulle of the shade of the coat is used around the hair instead of the silk evening caps. This is newer than the caps and does not muss the hair so badly. Tulle scarfs are also popular for evening wear—they add a daintiness to the costume and are particularly becoming to girls with long necks.

This winter the silk stockings must match the party slippers in color; last year's style of stockings and slippers contrasting has passed on.

I saw a very novel set made of a Paisley shawl the other day. The scarf was wide and in shape was more like an oblong cape than a scarf. It tied at the throat with black ribbon. The hat was of black beaver with cut-out designs of the shawl cross-stitched on and the bag was of black silk with pieces of the shawl applied in points. The effect was certainly unusual, and worn over a very full black silk skirt made the wearer look like portraits of our grandmothers. Rosabella Best.

TWO SOAPINGS IN LAUNDERING.

Do not expect in washing out small articles in the washbowl to get them snowy white by washing in only one soapy water. The first soaping loosens the dirt, but does not entirely remove it. The best plan is to wash well in a strong suds, squeeze out and rinse slightly, then immerse in a second suds. After that, rinse in two or three waters to remove all soap.

Clean white sand makes a very good filling for a jardiniere that is to be used for cattails or grasses. By pressing the stalks into the sand, they can be arranged much more gracefully.

THE HOME CIRCLE

LANDSCAPE GARDENING.

Any community in the State that is contemplating the improvement of its district by tree planting, landscape gardening or floriculture can have, without charge, a representative from the Division of Landscape Gardening and Floriculture of the University of California to aid in the planning. When the work is of general civic value, no charge whatever is made, but if of value to individuals only, a charge is made, for the expense incurred. The University will also send experts to give public addresses on any phase of civic improvement or landscape gardening if desired by improvement clubs, school boards or other organizations interested in the beautifying of their home communities.

HOUSEHOLD RECIPES.

Making Potato Salad.—If potato salad is mixed while the potatoes are still warm, the flavors seem to blend much better than when the ingredients are all cold.

Quick Mustard.—Blend together thoroughly, 1 beaten egg, 3 tablespoons sugar, 1 tablespoon flour, and 3 tablespoons ground mustard; add 1 cup vinegar; stir and cook until thick as cream. Ready for use immediately.

Chutney Sauce.—Eighteen large, sour apples, $\frac{1}{4}$ lb. sugar, $\frac{1}{2}$ lb. salt, 1 oz. garlic, $\frac{1}{4}$ lb. onions, $\frac{1}{2}$ lb. mustard seed, $\frac{1}{2}$ lb. raisins, stoned and chopped fine, three pints vine-

gar. Mustard must be well bruised, garlic and onions sliced and pounded fine; the apples peeled, cored and boiled in the vinegar until well cooked, then mashed fine with a spoon. When cold, add other ingredients and blend well together.

SIMPLE REFRESHMENTS.

Editor Home Circle: I want to entertain some small children and would like suggestions as to the refreshments. — Miss A. M., Martinez.

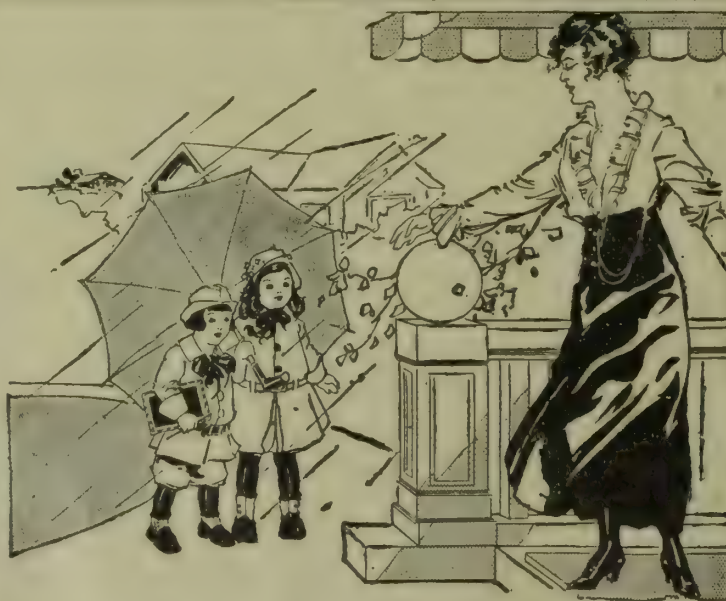
Have the refreshments simple. Hot chocolate, nut and raisin sandwiches and sponge cakes will be sufficient. The simplicity of the menu may be made up by the service. Tie the sandwiches with ribbons. Float a marshmallow in each cup of chocolate and ice the cakes with colored icing.

TO ERADICATE BEDBUGS.

Practical information as to how to deal effectively with bedbugs is contained in Farmers' Bulletin 754 recently published by the U. S. Department of Agriculture. This bulletin contains information on the habits of these pests and suggests simple household measures, as well as more radical methods for getting rid of them.

Benzine, kerosene or gasoline used freely are very effective, while sulphur fumigation is recommended where the whole house is infested.

Peroxide of hydrogen is recommended for use on the bites, and for adults tincture of iodine is also good.



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Ground Chocolate

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It comes PROTECTED—as all chocolate should—in $\frac{1}{2}$ -lb., 1-lb., and 3-lb. hermetically sealed cans.



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Floral Department.

[By Geo. N. Tyler.]

Now is the time to make your fernery. Make it at least eight inches deep, of pure leaf mould, in a shaded situation and where you can give it abundance of water through the summer. Put in a number of large rough rocks, as ferns love to grow in among them. Put in also rotten pieces of wood, and well rotted sawdust—the wild ferns love sawdust. You can go out into the woods and gather the roots now. Five-finger fern is one of the best for a fernery. The coffee or rock fern another. Polystichum Californicum, which grows where the five-finger are found, is a lacy fern and very beautiful. Polypodium, or the licorice fern is good. Woodwardias and the wild sword fern are taller growers, and should be used for a background. The wild maidenhair does not do well, as it has to go dry in the summer—so does the sulphur-back fern.

Following is a list of the hardy domestic ferns that will stand frost: Nephrolepis tuberosa, Pteris cretica, Pteris cretica alba lineata, Pteris tremula, Pteris winiseti, Pteris Winiseti Multicaps, Pteris Adiantoides, Polystichum setosum, Pteris Wilsoni, Pteris flabellata, Aspidium tsussimense, Cryptomium falcatum, Cryptomium Rockfordi, Cryptomium fortunei, Dordia aspera, Alsophila Australis (Australian tree fern).

If you can get the above ferns in four-inch pots, they can be planted now and will make a fine growth in early spring and through the summer. But if the plants are small, you had better wait till spring before planting, unless you have a very favorable location. The Australian lace fern is another splendid variety. This is also called the mother fern, as it forms little plants on the old fronds when they fall to the ground. This variety is also one of the best house ferns.

You can also put in the fernery wild strawberries, also Yerba buena, a creeping plant that is very fragrant, and a number of other plants that you will find growing in moist places in early spring.

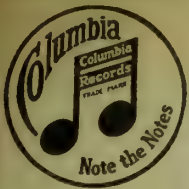
In gathering the roots of wild ferns now, cut off all the fronds and the roots will establish themselves in their new location much better, and be stronger plants in the spring.

LUSCIOUS GRAPE SALAD.

Harmony of foods has a new meaning similar to harmony of music since we enjoyed a grape salad made by Mrs. F. H. Booth of Fresno county. The grapes were Thompsons, but she said any kind are good with this dressing. She heats one cup vinegar with butter half the size of an egg. She mixes three eggs with one teaspoon mustard, one teaspoon flour, two tablespoons sugar, and one teaspoon salt. This mixture is added to the hot vinegar for the boiled dressing.

THE SAUCEPAN COVER.

When a saucepan cover seems useless because the little knob or handle is lost, push a cork part way through the opening and secure it by driving a small nail horizontally through the cork on the under side.



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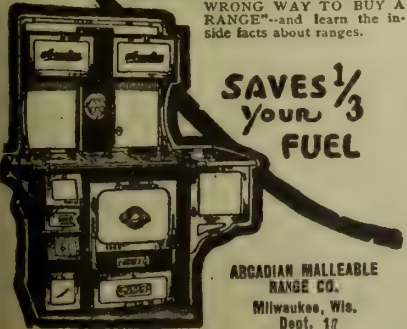
But it is more than beautiful. It is the perfect baker and the big fuel-saver, and STAYS so for a lifetime!

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Circular containing 100 mechanical movements mailed free.

Good Health.

(By H. E. Pastor, M. D.)

Olive Oil as a Food and Medicine.

California olive growers are occasionally much exercised to find adequate outlet for their increasing crops of fruit. One of the best ways of recommending an article to others is to make liberal use of it oneself. While the consumption of the olive in its several forms of preparation is spreading as its value as a food and medicine is becoming better understood, Californians still fall far short of according this excellent and time-honored fruit the appreciation its virtues merit. As an article of food, and in other ways, it has been used in the countries bordering on the Mediterranean Sea from time immemorial, and is used there today with undiminished popularity. The olive takes kindly to our California climate and soil, which are similar to those of its ancestral home. Its cultivation in the State is destined to assume an importance in commerce and in home consumption as yet scarcely realized.

While it is not the province of this department to dwell at length on food values, it may be permitted to say that in those countries where the olive is commonly used as an article of diet it has been demonstrated that its use lessens the destruction of muscular tissue; hence we find among these peoples such prodigies of strength and endurance as the Japanese jinriksha runners, Chinese burden-bearers, Turkish porters, etc., whose diet is largely confined to rice and oils. The expressed oil of the olive has many physiological and curative properties which should be more widely known and made use of. As a nutrient in wasting diseases olive oil is only surpassed by cod liver oil, for which it is a very good substitute, besides being more palatable and cheaper. Even when applied externally, and rubbed into the skin, it is taken up by the lymphatics with a decidedly nutritive effect. It is a very good laxative for infants and small children, taken internally, and may be used in the form of an enema as well as per mouth, in which case it should be followed by an injection of warm water. It is also an excellent lubricant for the intestines, and is a handy antidote for use in corrosive poisoning. Were its use as an article of diet more general, we would have fewer cases of appendicitis and hear less of the fashionable but dangerous and expensive operation frequently following in its wake. It is not possible within the brief limits of this column to enumerate all the medicinal virtues of this valuable vegetable oil, but we will take space enough to mention one thing more in its favor, and say that it has high value in warding off those degenerative changes of advanced life indicated by hardening of the arteries. Don't sell all the olives you grow; keep some for home use.

Brieflets.

Avoid excesses and enjoy a happy and a long life.

Air-tight dwellings make the undertaker's business flourish.

Walking is no less valuable as an exercise because it is cheap.



—“woman's work is never done”

Especially on the farm. Busy from morn till night—cooking, churning, feeding the chickens, getting the youngsters off to school, washing dishes and a thousand and one odd jobs.

When the day is done and the lights are lit, out comes the darning basket. It isn't fair to mother. Let the whole family wear

DURABLE DURHAM HOSIERY FOR MEN, WOMEN AND CHILDREN

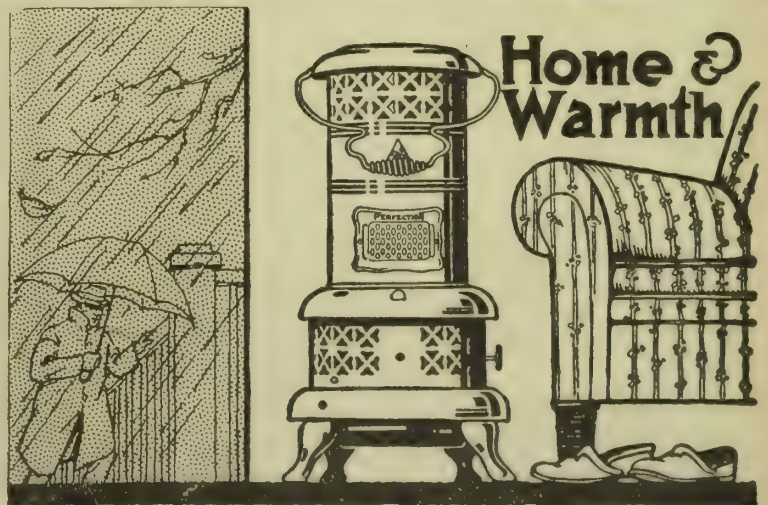
and darning will be a thing of the past. Durable as their name, this famous hosiery wears best where the wear comes hardest. Made of sturdy, stretchy yarn, shaped to fit, with extra strength at heels, toes and soles. Different weights for different purposes—a hose for every use, for every member of the family and at a price you'll be glad to pay. 10c, 15c and 25c a pair.

Ask your dealer for Durable Durham Hosiery. He ought to have it in stock, as we are the leading makers of low-priced hosiery in the world. Have him show you the 25c mercerized hose. Don't forget the name—Durable Durham.



DURHAM HOSIERY MILLS

Durham, N. C.



Perfection Oil Heater

Ready and glowing at the touch of a match—giving a cheery, odorless warmth. Burns PEARL OIL, the clean, cheap fuel. In blue or white enamel or plain black—harmonizing with the finest surroundings. Dealers everywhere.

Prices: \$3.75 to \$7.75

STANDARD OIL COMPANY
(California)

SAN FRANCISCO.

San Francisco, Nov. 1, 1916.

WHEAT.

Heavy export buying in the East continues to set the pace for the wheat market. All supplies on the Coast are very closely held, and local stocks are getting light. Prices have made quite a sensational advance within the last week.

[First-hand prices on strictly first-class grain, San Francisco.]

Sonora wheat\$2.65@2.70
Northern club2.45@2.50
Calif. club, cti.2.45@2.50
Northern Bluestem2.85@2.90
Northern Red2.75@2.85

BARLEY.

Buying interest continues strong in the local market, both for Eastern and foreign shipment, and prices for both grades show a further advance.

Shipping, cti.\$2.00@2.10
Choice feed, cti.1.95@2.10

OATS.

The shortage of other grains has caused comparatively little advance on oats so far, though the market is very firm, and higher prices are expected. White oats have been marked up a little, and Texas red seed is also higher.

Red feed\$1.80@1.85
Red seed2.15@2.30
White1.90@2.00
Black seed3.00@3.25
Texas Red seed2.50@2.60

CORN.

No Eastern or local yellow corn is offered on the spot, values being largely nominal. Egyptian is in strong demand and held at higher prices, though there is a great deal of poor corn that is hard to move.

[First-hand prices on strictly first-class grain, San Francisco.]

Eastern Yellow, cti.\$2.10@2.15
Milo MaizeNominal
Egyptian, new2.00@2.25

BEANS.

According to recent reports the crop outlook in Michigan is very doubtful, and locally there is a great shortage in several lines. Small and large whites are especially scarce, offerings being much less than the demand, and prices have taken another big jump. Red kidney beans also are very scarce and high, and Mexican reds have advanced sharply. Pinks, bayos and limas stand as last quoted, but all varieties are quite firm.

[First-hand prices on wharf, San Francisco.]

Bayos, per cti\$5.90@5.25
Blackeyes4.40@4.60
Cranberry beans5.50@5.75
Horse beans3.25@3.50
Small Whites (south) new crop8.00@9.50
Large Whites, new crop8.10@9.50
Pinks5.25@5.50
Limas (south)5.50@5.75
Red Kidney8.00@8.25
Mexican Reds6.00@6.50
Tepary beans4.25@4.50

SEEDS.

Values are about stationary, with an active demand for most cover crop seeds. Alfalfa is now in fair supply, though first-class seed is firm.

(Wholesale Prices, S. F.)
Alfalfa, per lb. (guaranteed)\$1.19@1.19 c
Oregon Vetch4.45@5 c
Mellilotus Indica7.45 c
Mellilotus Alba23 c
Bur clover, recleaned12.45 c

HAY.

Alfalfa hay is coming in rather freely from the river, causing a slight increase in arrivals, but it is hard to get rail shipments of grain hay to this market. The local demand for hay is lighter than usual, however, and shows less strength as to values than last week. Dealers predict a weakening of the market during the early spring, when cars will be more plentiful and hay held in the country will be sent in. This, however, depends on the tonnage stored in the country; and the demand in rural districts is said to have been very good all season, and continues quite active, notwithstanding the rapid growth of green feed. There is still some complaint of alfalfa arriving in bad condition due to wetting. Straw continues quite firm.

[Wholesale prices per ton, carload lots, San Francisco.]

Wheat, No. 1\$14.50@16.50
No. 212.00@14.00
Tame oats12.50@16.50
Wild oats11.00@13.50
Barley12.00@13.50
Alfalfa10.00@14.50
Stock hay9.50@11.00
Straw, per bale50@70

FEEDSTUFFS.

Rolled barley has advanced sharply, and rolled oats are higher in sympathy. Alfalfa meal, per ton\$18.00@19.50
Bran, per ton26.00@47.00
Oil CakeNominal
Cocoanut cake or meal23.00@25.00
Cracker corn44.00@45.00
Middlings35.00@38.00
Rolled Barley40.00@41.00
Tangle45.00
Rolled oats40.00@41.00
Rice middlings30.00@32.00

POTATOES, ONIONS, VEGETABLES.

Celery is now coming in freely from the Delta district, selling at \$1.75 to \$2 per crate. String beans are becoming rather scarce, and bring better prices. Tomatoes have been marked up, as the season is about over, and desirable lots are getting well cleaned up. There seems to be a great shortage of potatoes all over the country, and prices have advanced sharply here as well as at many other markets, though there is a good deal of Oregon stock offered here now. Sweets also are very firm, bringing

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

\$1.50 f. o. b. Merced. Onions are all in storage, and with a good demand prices are up again.
Celery, Alameda, bunch10c
Cucumbers, lug50@75c
String Beans40@50c
Lima Beans30@40c
Summer Squash, lugs50@75c
Eggplant, lugs30@40c
Peas, lb60@80c
Tomatoes, lugs50@65c
Rhubarb, lugs75@1.00
Potatoes, cti., Delta2.00@2.20
Salinas2.65@2.75
Sweet Potatoes, per cti.1.60@1.75
Onions2.75@3.00
Garlic, new crop, per lb3.00@5c

POULTRY.

Turkeys are coming in more freely, and prices are easing off, only the best dressed birds bringing the figures quoted, while live turkeys are lower. Young chickens have been quite easy of late, but the demand is improving a little, and while large broilers are lower the general situation is steady. Wild ducks, etc., are coming in freely. Turkeys, dressed, large, lb28@33c
Turkeys, live, lb, young, large, 21@24c
Old, large20@22c
Broilers, 18 lbs. to doz. and less, lb.26@28c
do, over 18 lbs. to doz.21@23c
Fryers20@22c
Hens, extra, per lb., colored20c
Small leghorn15@17c
Smooth Young Roosters, per lb. (3 lbs. and over)20@21c
Squabs, per lb35@40c
Geese, per lb14@15c
Ducks14@15c
Old13@14c
Belgian Hares11@12.45c

BUTTER.

Butter continues at the same range as last week, though the average for the week is slightly lower. There is very little demand outside of the local trade, and with arrivals nearly normal the light supply of storage butter is about all that keeps prices up.

Thu. Fri. Sat. Mon. Tu. Wed.
Extra32 1/2 33 32 1/2 33 32 1/2
Prime 1st31 1/2 32 32 32 32 31 1/2
Firsts31 31 31 31 31 31 31

EGGS.

There was a little slump at the end of the week, but the market is now in better shape, though without any very great firmness. Pullets are easier, with quite liberal offerings, and the demand is turning from extras to this grade.

Thu. Fri. Sat. Mon. Tu. Wed.
Extras46 46 47 48 48 48
Sel. Pul.39 39 39 39 39 37 1/2

CHEESE.

Y. A.s have been marked up 1/2c, with less liberal offerings at the moment. Other grades are unchanged.

[S. F. Dairy Exchange prices.]
Y. A.s, fancy13 c
Fancy Calif. Flats, per lb16 c
Monterey Cheese14@16 c

DECIDUOUS FRUITS.

The first-hand market for apples continues very strong and the New-towns are cleaning up in good shape, carload lots being held at 85c per box, while the street price is quite firm. The only difficulty now is to get cars to handle the shipments. The grape crop is about cleaned up in the country, after quite a successful stilling season. The local market is still fairly well supplied, and prices are steady as last quoted. Strawberries are somewhat higher. Persimmons are offered in considerable quantity, and seem to be gaining in popularity. White figs are gone, and the black variety soon will be. Casabas are lower, but are moving well.

[Wholesale prices, San Francisco.]
Huckleberries, lb., fancy10@11c
off grade6@8c
Strawberries, chest\$5.00@8.00
Cranberries, Cape Cod, bbl.9.30@9.50

Apples:
Bellflower, box75@85c
Jonathans85@1.00
Newtown85@1.00
Pears, Winter Nellis1.25@1.75
Persimmons, box, dbl. layer75@1.00
Pomegranates, lug1.00
Quinces, lug40@50
Figs, Cal. black box, double layer75@85
Casabas, crate60@75
Grapes, Malaga, lug75@1.30
Muscat, lug75@1.00
Tokay, lug75@1.00
Black, lug75@1.00

DRIED FRUITS.

The upward movement in the dried fruit market continues, with a strong demand in practically all markets. The heavy orders recently received for raisins have resulted in prices being again withdrawn on all grades, and another advance on peaches is reported, though definite information has not yet been received here. With all white figs apparently cleaned up, black cannot be had below 5 1/2c for salable stock. Prunes also are getting rather scarce in the country, while the demand from consuming markets shows no let-up, and small sizes are held at a 6 1/2c basis. Apples show no further change, but the season's output is believed to be pretty well sold out.

[Net to growers, bulk basis, f. o. b. shipping point.]
Apples, new crop6 1/2@7 c
Apricots, per lb. 191614 15 c
Figs, white, 1916None offered

Figs, blk5 @ 5 1/2c
Callimyrnas, 1916None offered
Prunes, 4-size basis, 166 1/2 @ 6 3/4c
Pears6 1/2 @ 7 c
Peaches: Standard yellow6 r
Muir's6 1/2c

ALMONDS.

Exchange prices are still quoted, though practically nominal, trading being mostly of a small jobbing nature at an advance of about 2c. Efforts to buy in the country bring out practically nothing, and the Exchange has about completed its shipments.

[Exchange prices.]
Nonpareils, lb.20 1/2c
I. X. L.18 c
Ne Plus17 c
Drakes16 c
Languedoc16 c

HONEY.

Water white, comb13@14 c
Light Amber10@12 c
Amber8 @ 9 c
Water white, extracted8 @ 9 c
Light amber6 @ 7 c
Dark4 @ 4 1/2c

HOPS.

The California market remains rather easy and slow, with prices offered unsatisfactory to growers, and buyers taking little interest.

Sacramento11@12 c
Mendocino11@13 1/2c

HIDES.

Prices have advanced rather sharply on most lines, and the market is very strong, with expectation of a further upward movement, owing to heavy export demand for leather.

Wet salted:
Steers20 1/2 @ 21 1/2c
Cows20 1/2 @ 21 1/2c
Light hides, 25 to 48 lbs.20 1/2 @ 21 1/2c
Kip23 @ 24 c
Calf and veal31 @ 32 c
Dry Hides32 1/2 @ 33 1/2c
Dry Kip35 @ 36 c
Dry Veal and Calf38 @ 42 c
Pelts, long wool\$1.75@1.99
Short wool85@1.10
Horse hides, wet, large, ea.5.00@5.50
dry, large3.00@3.50

HORSES.

Local sales for the week included another stable cleanup, besides a good-sized shipment from northern California which included some rather attractive stock. Little more interest was shown than for some time past, and it was difficult to effect sales at satisfactory prices. Another country sale is announced for the end of the week, and good stock of light to medium weight seems to move better in the country than locally.

Drafters, 1700 lbs and up250
Drafters, 1550 to 1650 lbs150@200
Chunks, 1350 to 1500 lbs150@175
Wagon horses 1050 to 1350 lbs 110@150
Green Mountain-range horses, 950 to 1200 lbs20@75

PETROLEUM.

Red Crown Gasoline, drums, etc.,

per gal.19 c
Red Crown Gasoline, cases, per gal.27 c
Engine Distillate, drums, etc., per gal.9 1/2c
Engine Distillate, cases, per gal. 17 1/2c
Pearl oil, bulk, per gal.9 c
Pearl oil, cases, per gal.17 c
Zerolene, lt. med., heavy, bbls., per gal.40 c
Zerolene heavy duty oil, bbls., per gal.50 c
cases, per gal.60 c
Arctic cup grease (No. 0 to No. 5), 10 lbs., per lb.9 c
25 lbs., per lb.8 c
Zerolene transmission lubricant, 10 lbs., per case\$1.85
25 lbs., per case\$2.50

LOS ANGELES.

Los Angeles, Oct. 31, 1916.

BUTTER.

Receipts California by rail for week ending Tuesday, October 31:
1916322,600 lbs.
1915210,980 lbs.

There was more in the past week, but under the influence of light stocks and firm markets east a steady and rather firm 33c market was had throughout the week. While the production here on the coast may be expected to increase a little from this forward, the consumption may also be expected to increase during the winter months, and the eastern situation is growing steadily stronger each day, this being the time of year for the production to fall off in the Central West and East, which may be expected to offset the increased production here on the coast. The market closed Tuesday on 'change steady and firm at 33c for extra California creamery.

Wed. Thu. Fri. Sat. Mon. Tu.
191633 33 33 33 33 33
191526 26 26 26 26 26

EGGS.

Receipts by rail as reported to the Produce Exchange for week ending Tuesday, Oct. 31:

1916693 cases
1915576 cases

Life seems to be out of the egg market for the time being. Receipts the past week were light and a good percent of the arrivals were pullets and as they are coming in of better size they brought a little more money. Our review week opened 1c lower at 43c for fresh ranch case count and remained so up to Saturday. Trading on 'change was light even at that price. Much of the Street Trade giving preference to cold storage eggs at the difference in price, hence a slow market. Monday under very light receipts for two days and San Francisco being up 1c caused the market to advance the same. The market, however, was very quiet. Tuesday there was a further advance of 1c to 45c for case count, but no trading as buyers refused to go above 45c while holders wanted more. Receipts by rail for the week were 693 cases and estimated by truck 600 cases, total 11,293 cases. Same week last year receipts by rail and truck were 1176 cases. Daily quotations the past week:

Special Livestock Market Report.

San Francisco, November 1.

CATTLE. The cattle market continues to be anything but attractive, but the trade is expecting better things soon. Heavy killings are reported from all quarters.

[Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.]

Steers, No. 16 1/2 @ 7 c
No. 25 1/2 @ 6 c
Cows and Heifers5 1/2 @ 6 c
No. 25 1/2 @ 6 c
Bulls and Stags4 @ 4 1/2c
Calves, light8 @ 8 1/2c
Medium7 @ 7 1/2c
Heavy6 @ 6 1/2c

HOGS have swung back to a better price, packers finding conditions better than they had hoped for as the season advances. Lard is the principal factor in hog values at this time and if the war stops so that America can reach the German market prices are expected to sky-rocket. The largest exporter of pork and provisions at this time is the Belgian Relief Committee who are reported to be taking about 25 million pounds a month. Prices subject to seller standing one-half of any loss from condemnation by government inspectors.

Hogs, grain-fed:
100 to 150 lbs.8 1/2c
150 to 250 lbs.9 1/2c
250 to 325 lbs.8 3/4c

SHEEP. continue inactive, practically all of the lambs being in killers' feed lots and nothing attractive being offered in other lines.

Prime Wethers6 1/2 @ 7c
Spring Lambs, f. o. b.\$5.25@5.75

WOOL activity has been pronounced in the country on fall clips. Buying is on a speculative basis, the eastern markets not warranting present prices here. Reports indicate that most of the fall clip is now out of growers' hands. Eastern markets fair on year's staple. London 5 to 10 per cent higher at sales on good long staple goods but remains the same on defective wools. Mountain fall notably higher.
Red Bluff, year's25@27c
Mountain, fall16@20c
Sacramento Valley, year's19@25c
Mendocino, year's31@32c
Mendocino, fall18@20c

Southern, year's18@21c
Southern, 7 months'13@16c
Southern, fall9@11c
Imperial Valley, year's17@19c
Imperial Valley, 7 mos.14@15c
Nevada21@23c
Fall wool10@20c

Los Angeles, Cal. Oct. 31.

CATTLE: There was a little better tone to the market the past week, though prices notably unchanged. California continues to give us a very fair supply of very good grass cattle. Killers were all in the market and wanted supplies and what came in were disposed of without much trouble, both steers and cows. The strength of the markets East having a sympathetic influence on the markets here on the coast.

Quotations are f. o. b. Los Angeles:
Beef steers, prime, 1000 to 1100 lbs.\$7.00@7.75
Stockers and feeders5.50@6.00
Prime cows and heifers6.25@6.50
Good cows and heifers6.00@6.25

HOGS: In sympathy with high markets East, the market here the past week was advanced 25c per cwt. on light and mixed packing hogs. California continues to furnish most of the supply and gave us some very good hogs. Killers were all in the market and wanted supplies and the light receipts were worked off without much trouble.

Per cwt. f. o. b. Los Angeles:
Heavy, averaging 250@300\$8.50@9.00
Mixed, 200@2509.25@9.50
Light, 175@2009.25@9.50

SHEEP: A firm and very good market was had the past week. Both muttons and lambs were wanted. Utah gave us a very good supply of yearlings and lambs, but flock-masters were reluctant to sell their older sheep. Killers were all in the market and took everything coming in as fast as it arrived.

Per head f. o. b. Los Angeles:
Prime wethers\$7.30@7.35
Prime ewes6.50@6.75
Yearlings6.50@7.00
Lambs6.50@7.00
CALVES: Not so many coming in and market steady and demand fair. Selling at \$8.50 to \$9.50.

Daily quotations the past week:
 Fresh ranch case count45c
 Pullets40c
 Daily quotations on 'Change:
 Wed. Thu. Fri. Sat. Mon. Tu.
 191643 43 43 43 44 45
 191542 43 43 43 43 43

POULTRY.

There was a better movement the past week in all desirable offerings. Broilers, fryers and heavy hens were all in very good demand, and were steady. Turkeys and ducks also sold in a fair way and turkeys were 1c higher. Ducks steady and geese continue dull. Receipts were very good and altogether local, the high price of feed causing growers to weed out their flocks, thus giving up an unusual supply for this time of year.

Broilers, 1 1/2 to 2 lbs.24@25c
 Fryers, 2 1/2 to 3 lbs.20@22c
 Hens, over 4 lbs.19@20c
 Hens under 4 lbs.15@16c
 Ducks14@15c
 Geese13c
 Roosters, 3 lbs. up (soft bones) 20c
 Turkeys, heavy, 12 lbs. and up. 22@23c
 Turkeys, light19@20c
 Squabs, live, per doz.\$1.50@3.00
 Dressed3.75@4.85

HAY.

Receipts the past week were again light, only 95 cars, a scarcity of cars checking the movement to market. Under the light offerings prices were held steady and firm. Demand, however, was light and only for such lots as had to be had for immediate use. We quote:

(F. o. b. Los Angeles.)

Barley hay\$14.00@16.00
 Oat16.00@18.00
 Alfalfa, Northern14.09@15.00
 Alfalfa, local16.00@17.00
 Straw7.50@ 8.00

WALNUTS.

A steady and firm market continues to be reported for all good nuts. Now that the weather has become settled marketing is well under way again and the crop is fast getting out of the hands of growers.

The Associated prices for this year and last are:

	1916	1915
No. 1	\$15.50	\$13.60
No. 2	12.50	10.60
Budded	19.00	17.00
Jumbos	17.50	16.60

Orchard run 3c per pound less.

Special Citrus Market Report.

Los Angeles, Oct. 31, 1916.
 Shipments of oranges from Southern California from November 1, 1915, to October 26, were 31,610 cars and lemons 6,873 cars. Same time last year shipments of oranges were 33,182 cars and lemons 6,773 cars. Shipments of oranges from central California from November 1, 1915, to October 25, 1916, were 5,404 cars. There was less life to the market the past week, but while the demand was not so active, good prices were obtained in all the markets. Lemons were again higher in the East under light offerings. No new oranges in yet. Reports from Central California, however, say the crop of early oranges is coming on nicely and there will be some ready for shipment in about two weeks. Locally the market continues quiet. A fair movement was reported in desirable sizes, but small and over large were hard to sell and lemons were very dull. Oranges selling at 2 1/2 to 3 1/2c per pound in the grove and lemons 1 1/2 to 2c per pound in the grove.

FROM THE AUCTION SALES.

New York, Oct. 27, 1916.—Seven cars of Valencia and one car of lemons sold. Market firm on both oranges and lemons. Weather fair. Valencias averaged \$4.10 to \$7.00.

Boston, Oct. 27.—Four cars sold. Market unchanged. Valencias averaged \$4.80 to \$5.30. Lemons \$4.05 to \$6.80.

Philadelphia, Oct. 27.—Two cars sold. Market unchanged. Valencias averaged \$3.85 to \$4.95.

New York, Oct. 30, 1916.—Sixteen cars of oranges and 3 cars lemons sold. The market is easier on Valencias, but strong and higher on 360-size lemons. Weather cloudy. Valencias averaged \$3.60 to \$7.05. Lemons averaged \$5.20 to \$6.50.

Boston, Oct. 30.—Six cars sold. Market stronger and higher on both oranges and lemons. Valencias averaged \$4.60 to \$5.50.

Philadelphia, Oct. 30.—Four cars sold. Market strong. Valencias averaged \$4.25 to \$5.40.

Publisher's Department.

During the past week 215 new paid subscribers were added to our list. Renewals have also been received at a very gratifying rate, the number being larger than any preceding week in our experience.

Geo. L. Horine of Winton, when renewing his subscription, writes: "It is the biggest dollar's worth of information I have ever received from any source, and what is more, we always feel sure everything within the covers can be taken at face value."

J. L. Gish of Laws, Inyo county, has decided to raise purebred hogs for the market only. He will no longer supply breeding stock as he says he is too far from the market. Mr. Gish has good stock and we trust will be paid extra prices for the fine pork he will furnish the butcher.

The first edition of the book "Pro-

ductive Feeding of Farm Animals" by Prof. F. W. Woll of the University of California, which was issued in January, 1916, has been exhausted and a new one has just been issued by its publishers, the J. B. Lippincott Co., East Washington Square, Philadelphia, price \$1.75 net. In this new edition Prof. Woll has revised the former text and also added a chapter on feeding poultry by Prof. J. E. Dougherty of the University Farm. The new edition will prove more valuable and we trust will meet with as hearty a reception as the first.

Again we wish to call the attention of our readers that all subscribers sending in queries for reply, to the Rural Press, must sign their names, or no attention will be paid to the request for information. We now receive so many inquiries daily that all the time possible is devoted by the editorial staff to the proper care of them. We want the Rural Press to be of the greatest service possible to its patrons and in order to give this service we must limit it to our subscribers. On the day this is written one mail brought in nearly twenty queries, of which three were not signed; one came from Edenville, another from Laton, and the third from Calistoga. None of these will be answered unless the writers will send us their names.

Classified Advertisements

MISCELLANEOUS.

REBUILT GAS ENGINES from 3 to 50 h.p. thoroughly overhauled and guaranteed. We handle only high-grade engines. Write us your requirements. Motors, Gas Engines bought, sold and exchanged. Mechanical Installation Company, 181-89 Second St., San Francisco.

EVERY SIZE WROUGHT IRON WATER PIPE and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a Square Deal. Weisbaum Pipe Works, 160 Eleventh St., San Francisco.

SECOND HAND WATER PIPE and Screw Casings. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SPECTER PIPE WORKS, 308-8 Howard St., San Francisco.

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APPLES DIRECT FROM PRODUCER—Fancy grade, bulk pack. Bellefonte, 75c per box; Newtown Pippins, 85c; Missouri Pippins, \$1. No. 2 grade, 60c. Edward A. Hall, E. F. D. 1, Watsonville, Cal.

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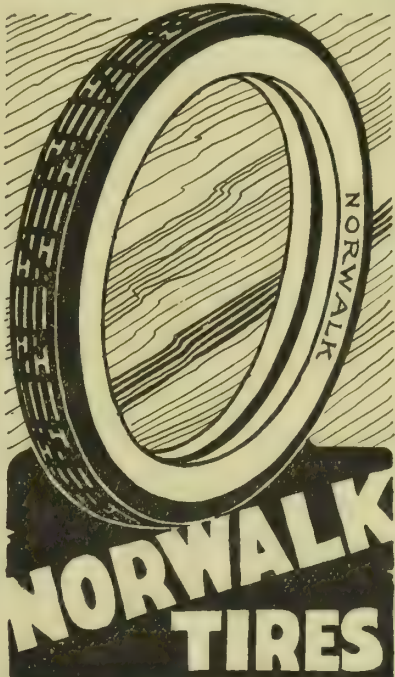
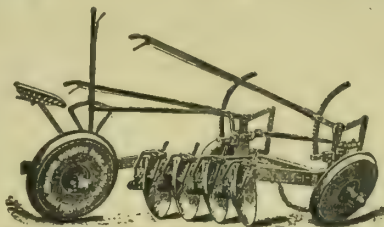
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THE PACIFIC RURAL PRESS

SAN FRANCISCO

NOVEMBER 11, 1916.

LOS ANGELES

The Complex Problem of Marketing Hogs.

University Test Shows Great Advantage of Ground Milo Over Rolled Barley, in Rate of Gain, Cost of Gain, and Dressing Percentage.

[Written for Pacific Rural Press.]

DISSATISFACTION seems to be general among growers, buyers, and packers of hogs in California if one is to judge by comments heard in private and public meetings. From the growers comes the most emphatic criticism of present hog values as compared with the price of feed and the price of pork at all of the centralized markets in the country. They also criticize the system which allows the grower of poorly bred and poorly fed hogs to receive as much or nearly as much for his product as his neighbor can get for his hard-finished and well-bred animals.

These points are illustrated by prices received at other markets. For example, on October 2, the top prices at the different large markets were as follows: Kansas City, \$10.00; Denver, \$9.80; Omaha, \$9.75; Chicago, \$10.15; South St. Paul, \$9.60; Portland, \$10.00; San Francisco, \$8.75; Los Angeles, \$9.25. While high, the Eastern market is higher.

But price alone does not tell the complete story. In California the price quoted is f. o. b. destination without feed or water, whereas at other points the quotation is f. o. b. destination after feeding and watering. The difference in shrinkage in the two systems means somewhere near a half cent a pound to the producer, it is claimed.

Although there is a difference in California quotations between the good and the poor hog, farmers complain that the average small raiser does not get the advantage of this on account of the local buyer's method of buying.

It is claimed, and local buyers have admitted the practice to the writer, that the grower with less than a carload cannot secure any decided difference in price for his hard-finished 200-pound hog than his neighbor with undersized soft hogs. Farmers point out that this condition does not encourage better breeding and feeding, but tends toward the increased production of soft, undersized hogs.

Another complaint of growers is based on the relative price of pork and grain. They maintain that quotations on hogs in other sections of the country rise or lower as the price of feed goes up or down, whereas in California there is no sympathetic rise in the price of pork when feed is up as at present.

The Local Buyer.—Naturally, the middleman is between two fires: the farmer and the packer. He answers the farmer's criticism as to the spread in his price by the statements (1) that he dares not pay one farmer more than another for fear of losing the patronage of one, and (2) that to break even on the poor hogs he must cut on the good ones in order to buy at a satisfactory average.

He further strengthens this argument by the assertion that farmers sometimes misrepresent the hogs they are selling by claiming they have been grain fed continuously since weaning, whereas they have been fed grain for only a short period before marketing. Another fault he finds is that the farmer usually wants a bulk price on the lot he is selling. Sometimes these lots are of very uneven quality, comprising piggy sows, lightweights and only a few tops. On the two former kinds he is docked severely by the packer, whose only recourse is to put them in the feed lots after arrival till such time as they are fit for killing or reject them and compel the buyer to render this service.

The buyer contends that besides the losses above mentioned he is

compelled to stand shrinkage, freight, expense of collecting for shipment and in some cases loss from tubercular animals. His half-share of this latter loss amounts to about one and a half per cent of his total shipments taking the average for the State; but in some of the large dairy sections the loss is much heavier. With all of these losses and expenses he insists that he is conducting his end of the business at as small a cost as is possible under prevailing conditions.

The Packer.—Although there is but one true definition of the word "packer" there are two interpretations of the word in this State. Here every large butchering plant is called a packing plant whereas in reality many of those so called are not in the business of packing cured meats and should not be termed packers.

Between the two there is much difference in operations, requirements, and prices. The true packer desires a hard-finished, well-bred hog weighing around 200 pounds live weight. From such a hog he can get a larger percentage of ham, loins, and bacon, with a smaller loss in dressing than from the lighter hog; and his price is therefore usually highest on such an animal.

The concern that is in the butchering business, purely from a fresh meat standpoint, prefers on the other hand a lighter hog, one weighing 150 to 175 pounds, as the smaller cuts, hams, shoulders, etc., are most

in demand among fresh meat consumers. They also want well-bred and properly fed animals in order that the dressing percentage may be satisfactory. As their requirements are different from the pork packer they usually pay more for the hog above designated than the packer but less for the 200-pound animal.

At the recent meeting of the California Swine Breeders' Ass'n at Hanford, W. Hough, Frank Hauser, and H. L. Kelley spoke at length on the unsatisfactory system California farmers have of growing hogs for the packer, all three representing concerns which are in the packing business.

Largely their troubles are, they say, traceable to poor quality. Mr. Hauser pointed out that the large majority of the hogs arriving at his plant from California

points are poorly bred. This means that they usually have large, coarse head, neck, and shoulder, the parts which are in least demand for packing purposes and which sell at a lower price accordingly. Instead of having well-sprung ribs, thereby increasing the amount of side meat, an article in demand, they have a peaked back with no spring of rib and dressing out a smaller percentage of loin and bacon. In hams also they are deficient, this portion of their carcass starting high above the hock joint with a small diameter and continuing in like manner by the tail setting.

He showed by a comparison of a purebred barrow with a grade barrow where the purebred animal possesses all of these desirable qualities which are deficient in the mongrel; and gave it as his opinion that when California hog raisers improve the breeding of their hogs, the packer will gladly pay the additional price which their dressing percentage warrants.

Both he and the other packing house representatives present emphasized the importance of better feeding practices. They admitted that some growers are finishing their hogs in the proper manner; and Mr. Hough pointed out that for such hogs his concern paid accordingly, basing the price on the percentage the hogs dressed out, with a 10 cent premium for each point over 77 per cent.

But in the great majority of cases they find too few farmers feed grain as they should and as they do in the Middle West, where hog growing has become a permanent venture and where prices are better also.

(Continued on page 524.)



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EDITORIALS

AFTER THE ELECTION.

WE ARE writing on Election Day, and thinking of what will come afterward. Our very large circulation makes it impossible to wait for returns. We have to get ahead early in the week with the kind of printing this journal has to do, and therefore the country will know more than we now do of the incident of choice for the presidency, before this paper can reach the readers. But as we said last week, the country has a clear duty before it, for itself and for the world, and it will do it about in the same way, whether the high-cockalorum at Washington shall be Charley or Woody. The campaign justified that irreverence. We tried to say last week that we never saw a campaign "with so few issues and so many tissues" in it—but the printer would not have it that way. The next time we try for an epigram we shall furnish the printers a diagram. But it did not matter much. It made nonsense of our comment, and that, too, was quite characteristic of the claims of the campaign which has now happily ended—happily either way, say we.

But of course we do not mean to say that there are no issues pending. Everybody knew all the time there were great issues, and that practically all patriotic Americans will insist upon meeting them aright, but neither side in the recent controversy dared to credit the other with the patriotism he really had, and this forced both sides to go to spinning political tissues, the flimsiest the American people have ever been called to vote upon. All this will be immediately forgotten, for the American can see through it all clearly enough though it must have been films in the eyes of the world which, may be, is flattering itself that this republic is blinded by its own cataracts. Not so: the public eye of the United States has been scraped clean. Every one knows now, unless he is hopelessly hyphenated, that this country must protect itself against every kind of aggression from the rest of the world. We must have ample and ready force, for the world has shown its disrespect for everything else. We must have ample and just protection for our capital, our labor and our commerce. We must have more even justice and opportunity for our own people in their relations with each other. There was much in the foundation principles of this nation which must now be recalled and vivified. There was much in the unfair purposes and achievements of the last half-century which must be abandoned and forgotten. There is much now dawning in the realization of "life, liberty, and the pursuit of happiness," which must be developed and enforced in the governmental policies and attitudes of this country toward its own citizenship. These are the real issues of the day and every true American knows them and will work earnestly for efficiency-methods which lie in the course of their full attainment.

COLONIZATION IN CALIFORNIA.

IN A little local way there is a reflection of these great principles of fairness between man and man in the notable contribution to knowledge of land settlement in California which we present to

our readers in this and next week's issues. This week we have startling facts about land prices, as related to the earning capacity of lands, in our subdivision and settlement enterprises of the last decade. Next week we shall have a masterly interpretation of these facts and a suggestion of what should be done about them. Most people have known that our land settlement efforts were going wrong, but very few knew how far they were going wrong, or in what particular ways. Very few also knew that the fallacies and inflations of the last decade have practically put the State out of the game of organized settlement, and reduced us to the limited dimensions of individual search and purchase by home-seekers. This is a calamity for a large, new State, which ought to be growing and making rural millions happy and prosperous, as well as building up great cities. The facts of present stagnation in rural lands is all the more depressing when one remembers that there was a time when California took some of her best forward steps through colony subdivision and settlement. Anaheim, Riverside, Fresno, and other now famous developments began on the colony plan thirty or forty years ago, and most of those who were in at their beginnings advanced to the ends of their lives in the joy and prosperity with which well-grounded development rewards its leaders and pioneers. There were profits in promotion in those days, but as we remember they were small and reasonable as compared with the calculations of more recent exploiters. In a way the pioneer colonists had less done for them, and they had a struggle which made them strong. They did at least get the land at fairer price even if they did have to fight to get the water out of the hands of the speculators in some cases. But they enjoyed the unearned increment of the land which followed their improvements, and nearly all men and women who worked well and wisely realized their reward, and enrich their descendants who had sense for continuing their work. This is all quite in contrast with the facts visible on another page of this issue, which show that promoters, by multiplying overhead expenses out of all occasion, by unreasonable selling cost, by trying to appropriate to themselves all unearned increments, made increments of all kinds impossible, and broke down the machine. How these performances have brought our present settlement conditions to impossible competition with other parts of the country, and how they have made it impossible for a settler to exist on California land as now fussed-up and surcharged with expense, will appear more fully in next week's issue. It is a sad story for the chances of a man in this State; it is a sad story for the outlook of the State itself. It involves problems of what should be done about it, which every one who owns land, or wants to own land, should immediately bestir himself to solve. If we mistake not, the questions raised will constitute a line of earnest work by the next legislature. Of course, California is not alone in the misfortune of the present condition. It is quite possible that even worse things have been done in the same line in other States. If so, there is all the more reason that California, by virtue of her leadership of the newer States of the country, should point the way out. Every one should go to work at it.

WHAT ABOUT CEREALS?

WE HOPE that readers having land for wheat will not kick themselves so hard for not heeding our advice about growing wheat last year that they will be too lame to plow wheat land this year. For it keeps on looking better for the man who has wheat, and worse for the one who has not. And, as you know, all California is the man without wheat, and will pay a lot of millions to the men in other States who have it—for the which California ought to be horse-whipped. Think of it: thirty-odd years ago California, the first wheat State in the Union, and now buying wheat, and buying it at a higher price than most people can remember, too! Why, if California had had the wheat crop she had in the '80's—and she could have it too without taking away land from any other crop—the growers would have brought into the State this year more gold than there now is in this district's Reserve bank—probably, for we do not know exactly how much that is. In-

stead of doing that we are pinching money out of fruit, etc., to buy bread; pinching the millers to take the bran off and pinching bakers to put wind and water in, when we might be getting fat on our own bran, wind and water, and filling our pockets at the same time. And yet, people say this is a day of efficient and economic regulation of things!

The only thing which keeps us from utter disgrace in this line is that we are selling barley—maybe voting ourselves dry (though we do not know it at this moment) to keep Europe and St. Louis wet. This is the barley story which came last week from the Sacramento statisticians:

California again leads all the other States of the Union in the yield of barley, according to advance reports of the 1916 crop. California's 1916 yield is placed at 31,975,000 bushels, while Minnesota is second with 31,143,000 bushels. But the difference in favor of California is greater when it is noted that California's yield is based on an acreage of 1,279,000 as compared to 1,482,000 for Minnesota. North Dakota has the largest acreage, 1,650,000, but its output is less than 25,000,000 bushels. With both its acreage and production increasing yearly, there is little chance for California to lose its lead.

But what sense is there in selling barley to buy wheat when so large a State can sell both and still not drive the mosquitoes out of the rice fields?

OLD HUMUS GETS A SET-BACK.

66 "H, YES," we hear some reader say, "you are going to give us a sermon on humus: that humus is the stuff which will enable us to grow just as much grain as ever; therefore, get humus." Nothing of the sort. You might have guessed right that way a while ago, but now Old Humus has got a crick in his back! Professor Madson has just shown in University Bulletin 270 that this old apostle of reform has been tipped over by the demonstrations at the University Farm at Davis during the last few years, and that for unirrigated grain at least the strife to secure cover crops yields no more than the drive on Verdun. This is based on nine years' experiments on the same land, which show that "the use of cover crops, even if they be legumes, does not seem to increase the content of humus or of humus nitrogen in the soil to any appreciable extent; the favorable effects of cover crops that are frequently observed must, therefore, be attributed to other causes than an increase of the humus in the soil. The organic matter added to the soil by the cover crop appears to be practically lost by oxidation the following summer."

Well, then, since continuous cropping will reduce the yield, and efforts to add organic matter by cover crops yield nothing to prevent it, where are we at with all our preaching? Where do you think? We are right back to the old "bare fallow," which seemed to be the right practice for forty years before Old Humus butted in—a practice which has probably made more clean money for good farming than any other culture method ever devised for dry farming. And this is the present tribute to this old Bare Fallow against whom Old Humus made his chief drive about a decade ago; for Professor Madson concludes: "Under a system of continuous cropping to wheat the yield decreases very rapidly to a point below profitable production. The year of fallow is one of the most effective means of retaining the productive power of semi-arid soils. The use of green manure crops increases the productivity of the soil, but not to the same extent as does the bare fallow."

BARE FALLOW KNOCKS HIM OUT.

NOW the proof of the foregoing preachment is thus condensed:

The annual increase in yield of 6.29 bushels per acre, which was obtained from the fallow plots, is largely clear gain. To be economically a success, the fallow plots would have to produce only twice as large yields every alternate year as was produced by the continuous cropped plots annually, whereas the actual average production of the fallow plots every two years was 35.35 bushels per acre, as compared with 11.38 bushels per acre, which was the annual production of the plots cropped continuously. While the yields with green manuring were considerably larger than those obtained under continuous cropping, they were, on the whole, somewhat lower than the yield obtained on the fallow plots. Furthermore, the cost of producing and handling the green manure crop is at least 50 per cent greater than the cost of maintaining the

fallow, including the cost of putting in the cost of the seed and additional plowing in the spring, besides the same summer cultivation that is given to the fallow. On the whole, therefore, the actual economic returns attending the use of a green manure crop is but slightly greater than those obtained under a system of continuous cropping.

From this it appears that in this period of nine years the bare fallow actually produced more wheat than the land farmed for humus, and did it at half the cost. Also that when you count the cost of cover cropping the return from humus-fed crops is but little larger than if you grew wheat every year. Of course the reader must not conclude from these results that the soil does not need added nitrogen nor that rotation is irrational, but they must be provided for upon some other economic basis. There is also no arraignment of the value of cover crops when measured in other terms than those of a grain crop when the whole cost of cover-cropping is charged to it.

BARE FALLOW AND THE TRACTOR.

WHAT is the immediate lesson of it? Just this: get back to the bare fallow riding on a tractor. To get the benefit of a bare fallow it has to be bare, and it has to be well

made and maintained. Its first purpose is to put as much as you can of two years' rainfall in one year's crop, and you can only do this by reducing evaporation to a minimum by fine surface cultivation and by absolutely allowing no weeds to drink up moisture, except during the winter. Spring working must be undertaken as early and for practically the same purpose as spring working of fruit lands. This is to prevent early evaporation, and to put the land in condition to take fine summer cultivation—which must be given it or your bare fallow lacks efficiency. And does this need to be done with a tractor? Not at all. Teams can do it to the limit of their capacity, if the man knows what good tillage is and is willing to get it and keep it. But on larger areas the tractor has greater capacity and speed, and can do great work, in breadth and depth, at less cost. It is in the history of our wheat-growing that we stayed in at one time against low prices, because the combined harvester cheapened harvesting. Now the tractor comes in, not at this moment against low prices, for prices are all right, but to improve and cheapen tillage so that we can secure a really good bare fallow, which seems to be the essential to getting more wheat with a good profit in it.

plant. It is controlled by Bordeaux mixture applied when the new growth is about six inches high and repeated two or three times at intervals of about ten days. The worm you speak of needs an arsenical like arsenate of lead as soon as you see it at work.

Who Invented the Apple Box?

To the Editor: Kindly tell me where I can find an account of the first use of the box as a package for California apples. I understand that California is the home of the box apple, and that the Northwest has simply adopted the package which originated with us, refined it and brought it to their present high standard. If you can not tell, be so kind as to give me any historical points which you may have in mind in this connection.—W. P. Tufts, University Farm.

At the moment we cannot answer your question and print it to draw out superior wisdom from others who may have the facts. When we came to California in 1875 the apple box was universally used along the coast and had been for a long time. We suppose the box came into use at the very beginning of American fruit selling on this coast because any man who had boards and nails could make a box while to make a barrel is a much higher mechanical art. After that the box prevailed because it is more rational and portable. As apples came to California from Oregon before they were fruiting here, except on a few old mission trees, there would be a presumption that the first artist with boards and nails was in Oregon. Apple trees were planted in Oregon in the later '40s; in California in the early '50s. Now who has any record of the facts about the box? We can dig them up, we doubt not, but cannot stop to do it now.

Moving Olive Trees.

To the Editor: I have a number of olive trees which have been planted two years this winter. I wish to move them. When would be the best time to do so?—I. T., Stockton.

Olive and citrus trees are usually moved most successfully considerably later than deciduous trees. Wait until the air warms up and excess water goes out of the soil. This will depend upon the season somewhat. It may be in February or March, according to the season and the soil. With irrigation it can be done even a month or two later. Take up the trees carefully with a ball of earth, water-settle the soil around the ball and cut back the top considerably.

Killing a Poplar.

To the Editor: I have a poplar tree which brings up the new growth all over the yard. Kindly advise me how to destroy the tree without taking it out.—A. A., Los Gatos.

You can kill the tree by girdling—removing a ring of bark about a foot wide, clear down to the wood, near the base of the tree. You will have to grub out the suckers wherever you find them, going deep enough to get out the roots from which they start. Probably you can kill the tree by making a ring around it, in the ground at the base, and pouring in a gallon of gasoline so as to saturate the bark. But you will have also to chase the suckers and grub or gasoline them also.

Planting Almonds.

To the Editor: I have been told that the best way to start an almond orchard is to plant bitter almond nuts in the assigned places and after two years graft over to whatever kind you want. Is this a good plan?—J. D. N., Modesto.

It is not a good way. It will give you a mean, irregular lot of trees and a lot of vacancies, which will keep you busy trying to fill when you ought to be doing something else. Plant yearling budded trees from the nursery.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., November 7, 1916.

STATIONS	Past Week	Rainfall Data		Temperature Data	
		To Date	Normal To Date	Max	Min
Eureka	1.14	3.45	1.89	61	38
Red Bluff	.26	3.62	2.95	70	38
Sacramento	.04	1.06	1.72	72	38
San Francisco	.74	2.78	1.91	68	46
San Jose	.32	1.95	1.48	74	34
Fresno	.26	1.84	1.08	78	42
Independence	.01	1.12	1.04	72	
San Luis Obispo	.38	4.10	2.03	84	40
Los Angeles	.08	3.12	.97	74	46
San Diego	.04	1.19	.66	66	46

By the Editor || QUERIES AND REPLIES ||

Inquirers Must Give Full Name and Address.

Which Prune?

To the Editor: Which prune do you consider most profitable? We have the French which yields well but in many orchards they grow rather small. I have been thinking of planting the Imperial. Are they a shy bearer or will they produce as many pounds as the French one year with another? Will the Imperial stand as much frost as the French? Will they ripen the same time? What distance apart should they be planted? Will they need as much pruning as the French?—M. S., Ukiah.

There are several types of Imperials with somewhat different behavior. It is our conviction that no one should plant Imperials except for trial unless he has evidence of its value in his locality. As a rule they bear less than the French, though some find their bearing good. They ripen about the same time as the French and being larger are harder to cure. They should in all cases be allowed to ripen fully on the tree. In places where fall rains are apt to come early, these large late prunes might be troublesome. The Sugar is earlier than French, larger, if well thinned, and an easy drier; to our notion, inferior in quality, but in valleys north of the bay is profitable so far. Size in the Imperial, as in other plums, is promoted by systematic pruning and it is rather more necessary than with the French, for the wood is less elastic. Twenty-four feet is a good planting distance; with twenty-eight feet more desirable where conditions favor free growth.

Sowing Johnson Grass.

To the Editor: Is it against the law to sow Johnson grass in Monterey county? And, if not, will it grow on high land unirrigated? If it can be sown, where can the seed be purchased?—R. D. M., Monterey.

We presume it is not against the law to sow Johnson grass anywhere, but it is against the law to grow it so that the seeds can fall into irrigation ditches or near the boundaries of others' property. If the Monterey supervisors have legislated against a man's sowing Johnson grass or anything else on his own property, they have surely put one over on the constitution of the United States. But you do not want Johnson grass, for the only place where it will not grow is on high, dry land, where it might be of some use. And if you did want it you could not buy the seed of any reputable seedsmen—he would not dare to keep it, even in the pages of his catalogue.

Treatment of Seed Potatoes.

To the Editor: I had cold storage potato seed for a part of my crop this year and they come very badly. Would you advise cold storage potato seed? I lost over \$100 worth of my storage seed this summer.—C., San Bernardino.

We do not advise any one to hunt for cold stor-

age seed: we would prefer seed kept under more normal conditions, but sometimes seed out of storage has to be used. In that case we should vitalize it by exposure to half sunlight for two weeks or more and see that it was minded to sprout before planting. This is a rational treatment for all potatoes which do not seem to be starting their eyes. In the fresh seed it promotes maturity; in stored seed it determines viability. Never mind if it greens the tuber—that is no objection, though of course one does not wish to blister or burn the skin by too much direct sunshine.

Killing Mustard and Turnip.

To the Editor: Is there any known way of destroying mustard and radish seed on land that is infested with them? I have sixty acres of bottom land covered with those nuisances.—I. H., Wallace.

We know no practicable way to get at the seed before sprouting. The common way to clean land for grain is to disk or cultivate two or three times, killing the weeds as they are started by the fall rains, before seeding to grain, and then hand-pull the stuff which starts with the grain before it ripens seeds. If you put on alfalfa after the fall cleaning, it will usually take care of such weeds by smothering, especially if helped by early mowing. If you do not want alfalfa and can use the land for beets this winter or for corn or other cultivated crop next summer, the cultivation will clean out these annuals.

Vine Pruning.

To the Editor: I have some six-year-old Malaga vines that have two trunks and have been advised by some to cut one out; what do you think about it? How long will it take to rot the next prunings if plowed under; also, would it be beneficial to the ground? I expect to cut it short and plow under.—F. B., Clovis.

If the two trunks are about the same size we should leave them alone. Large cuts are apt to introduce decay and give you a bad trunk. If one is much larger than the other remove the small one. It will have a good chance to heal over. The rotting of prunings depends largely upon the moisture of the soil in which they lie and how finely they are hashed up. In a retentive soil, fine-cut prunings ought to disintegrate in a year and add humus to the soil which is desirable if it does not cost too much.

Early Blight of Potatoes.

To the Editor: With what do you spray potatoes for early blight? Is there any remedy for it? In Yucaipa Valley the potatoes grow very rank and do fine except for the early blight. This year, however, there was a tiny worm that worked on the leaves of the potatoes.—E. E. C., Yucaipa.

What is usually called early blight is the work of the fungus (*Alternaria solani*) which causes dead spots to appear on the leaves of the young

The Currant Grapes in California.

[By Prof. Frederic T. Bioletti.]

The dried grapes imported from Greece under the name of "currants" or "Zante currants" are made from a variety of vine known as the Black Corinth. A few are made from a similar variety known as the White Corinth. These are somewhat larger, of lighter color, but are not quite equal in quality to the black. Both varieties have been grown in California for many years in various localities.

The White Corinth is growing in commercial quantities in the Sacramento Valley, but does not seem to be altogether satisfactory, partly because its grapes when dried are somewhat different from the imported currants and partly because the crops are not large, owing principally to unsuitable pruning. A few growers of White Corinth, however, are well pleased with their results and some people prefer their currants to those of the black variety.

The experience with the Black Corinth has been disappointing in practically every case. The vine has grown vigorously, but has borne little or nothing.

Two notable exceptions to this have been observed. In Lake county Mr. Fifield of Kelseyville has a Black Corinth growing on his house which is said to produce regularly very large crops. The vine grows around the house, having developed a stem about 200 feet long. The grapes, however, have to a large extent lost their most valuable character, that of seedlessness. Many bunches consist chiefly of large grapes with seeds which make them useless for drying. It seems probable then that by allowing the vine to develop to a large size over trellises it might be possible to obtain good crops from the Black Corinth, but if this method of training resulted in producing grapes with seeds it would be useless.

The other exception is the grafted vines growing in the experiment vineyards at Davis and Kearney. At Kearney, Black Corinth grafted on 41B, 3306, and Riparia gloira have yielded at the rate of 6.55 tons of fresh grapes per acre corresponding to 1.59 tons of dried currants. These vines are four years old. At Davis two rows of Black Corinth six years old on their own roots have produced almost nothing, while two rows grafted on 41B, 3306, and Rupestris St. George have produced heavy crops at four years.

Small quantities of currants—both black and white—were made by the California Experiment Station in 1914 and in 1915. The quality was good and all by whom they were examined considered them as good as those imported from Greece. This year a somewhat larger quantity has been made and they will be tested for their commercial value.

It appears certain that it will be possible to grow paying crops of both varieties if the price obtained is a little higher than that of Sultanas (Thompson). It will probably be necessary to use American roots, at least for the black, which will increase the cost of establishing a vineyard about \$30 or \$40 per acre.

One great advantage in growing Corinth grapes will be the lengthening of the raisin-making season. This is indicated by the following list of the dates at which the various varieties of raisin grapes were ready to harvest at the Kearney Experiment Vineyard this year.

Black Corinth (grafted), Aug. 15.
White Corinth (grafted), Aug. 26.
Sultanina (Thompson) (grafted), Aug. 30 to Sept. 16.
Muscat (grafted), Sept. 9 to Sept. 16.
Muscat (on own roots), Sept. 26.
University of California.

A Good Method of Curing Olives.

To the Editor: Please send me a recipe for curing olives.—Mrs. W. J. Y., Stockton.

We quote the following which appeared in our issue of Nov. 21, 1914, as the practice of P. H. Steude of Yolo county.

Olives should be cherry color for pickling. In this way they have a good flavor and are appetizing. I consider the Mission olive the best for home use. It is best to not mix the olives from different trees as some trees have more bitter ones than others. This accounts for having some bitter olives among the sweet.

When you pick olives, get them into clear water as soon as possible.

Never use ditch or dirty water, as olives absorb the mud and are easily spoiled. Olives picked into lug boxes will mold in 24 hours.

Dissolve one pound concentrated lye and 1 pound pure salt in 2½ to 3 gallons of water, and see that it is thoroughly dissolved, then skim. Then drain all the water from olives, and pour the preparation of salt and lye over them. Weight the olives down to keep them covered. In 12 to 48 hours, the bitter will be entirely removed from them. Draw off the preparation and fill in on top again about once or twice a day to find out if the bitter taste is all out of them. If you see milk on them,

by cutting them open you will find the bitter still. For further test, you can wash off a few olives and bite, being sure to keep your lips away from them. Spit out at once and rinse your mouth with clear water. As soon as the bitter taste is out, turn in clear water. The first few days, change 4 or 5 times a day, and 2 to 3 times a day for about 10 days or till the lye is all gone.

Should they get a little soft, put a strong salt brine over them for 24 hours and then wash in clear water afterwards. I usually have olives to eat in one week from the time they are picked, but there is still a little lye on them.

To keep the olives a long time, use 12 ounces of salt brine to a gallon. That will make a potato swim. Olives should be in a dark place and covered with brine or water. By keeping them a long time, a scum should rise to the top and should be skimmed off, and the olives rinsed in clear water and put in new brine. If olives are too salty, lay them in water for a few hours and they will be ready to eat.

This preparation is strong enough to take the color out of the dark olives. They will not look as well as the commercial, but are far superior in taste.

YELLOW ORANGE LEAVES.

To the Editor: Enclosed is an orange leaf yellowed except along the principal veins. My trees have many such. My land is part red and part heavy black. Trees seem about the same on both.—Subscriber, Woodlake.

We believe the trouble is due to lack of nutrition. This may be due to lack of fertility or lack of water to make fertility available or to too much water which is just as bad. Knots on the roots, disease of the trunks, or injury to roots or trunks are less likely causes.

Workmen are at work grading for the extension of the Santa Fe line to Porterville.

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ETTERSBERG STRAWBERRIES BEAR.

[Written for Pacific Rural Press.]

Ettersburg strawberries remind J. W. Givens of Merced county of a hen with chickens all around and under her. They bear from late April until October. The roots go six or eight inches deep, while Brandywines go only three or four. They are watered every 7 to 10 days, the soil being a silty, bakey loam. In hot weather the wind sometimes blows the irrigation dry overnight, and blasts some of the blossoms. It is a mistake to plant this variety 15 inches apart according to Mr. Givens. They should be three feet apart in rows four feet apart. After the fruit is off, Mr. Givens cuts off enough leaves and runners so he can cultivate. Then in spring, just before they send out blossom shoots, he cuts off all the leaves. Possibly this pruning treatment is one secret of making Ettersburg berries bear.

Windsor Beans for Cover Crops.

[From Fair Oaks Citizen.]

In the Pacific Rural Press of August 19 appeared an article by W. M. Mertz on "The Latest in Cover Crops," in which he recommends "a trial of the Windsor bean" for a cover crop.

I raised a crop of these beans the past season and it occurred to me that it would be a fine green manure plant for Fair Oaks orchards. It is the hardest plant I ever saw and will grow when it is so cold that other plants are either killed or at a standstill. It has fully twice as many nitrogen nodules on the roots as I ever saw on any other legume. It is not a vine, but grows upright, its branches close to the ground. I have counted a dozen branches on some plants, but that is unusual. Four to ten is the average number.

I think it would make a heavier crop of "green stuff" to plow under in the spring than any legume that has been tried so far in Fair Oaks. Right here I wish to say that I have no seed to sell.

Mr. Mertz says: "Objections are that the seed is so large that it requires 100 to 150 pounds of beans to sow an acre thick enough for cover-cropping. The seed costs 4 or

5 cents a pound, which makes the cost of seed two or three times that of melilotus."

I think that 75 pounds of seed per acre would be enough. In West Sacramento, when planting for a crop, 45 to 50 pounds were used. I had to pay 5 cents for my seed last fall, but if an orchardist will arrange to get his seed direct from the grower he can be sure that he will rarely have to pay more than 3 cents a pound. There are no horse beans in the hands of the growers here now except what have been saved for seed.

I would think that the best way to plant these beans in an orchard would be to sow them broadcast and then disc and cross-disc. In West Sacramento they are planted in rows, a furrow is made with a plow and the beans are dropped, a foot apart, by hand, then two furrows are turned, and so on until the field is planted. There is little danger of planting too deep. I have seen them covered a foot deep and come up all right.

If they are planted thick there will be few branches to each plant and the growth will be tall and straight. If less seed is used, the bean branches more and does not grow so tall. I would prefer not to answer inquiries by mail.

Harry D. Williams.

West Sacramento.

NOVEMBER CROP REPORT.

Horticultural commissioners' reports compiled by Secretary E. J. Vosler of the State Horticultural Commission, as of Nov. 1, are as follows:

COUNTY	Grapefruit		Lemons		Olives		Oranges	
	% of normal crop.	% of State acreage	% of normal crop.	% of State acreage	% of normal crop.	% of State acreage	% of normal crop.	% of State acreage
Butte	100	100	100	100	100	100	100	100
Fresno	100	100	100	100	100	100	100	100
Kern	100	100	100	100	100	100	100	100
Los Angeles	100	31	100	14	60	26	100	100
Madera	100	100	100	100	100	100	100	100
Merced	100	100	100	100	100	100	100	100
Orange	100	7	100	100	100	100	100	100
Placer	100	100	100	100	100	100	100	100
Riverside	100	16	90	11	60	14	80	100
Sacramento	100	100	100	100	100	100	100	100
San Bernardino	80	13	90	7	75	31	95	100
San Diego	100	10	75	5	100	100	100	100
San Joaquin	100	100	100	100	100	100	100	100
Santa Barbara	100	85	100	100	100	100	100	100
Shasta	100	100	100	100	100	100	100	100
Sonoma	100	100	100	100	100	100	100	100
Stanislaus	100	100	100	100	100	100	100	100
Tehama	100	100	100	100	100	100	100	100
Tulare	95	5	95	6	95	13	90	100
Ventura	100	15	100	100	100	100	100	100
Yolo	100	100	100	100	100	100	100	100
Yuba	100	100	100	100	100	100	100	100

Figures in table indicates condition of crop in per cent, on the basis of 100 normal. No report since October 1, 1916. *Less than 2% of state's normal crop grown in this county.

PEACH FRUIT BUDS.

To the Editor: What can I do to make the Elberta peach produce fruits? I think most of the blossoms bring fruit, but it is a shy bloomer with me. The trees are doing well and have a fine growth.

—E. B., Santa Cruz.

If you prune this winter, do not cut back, but thin out where desirable. Then do your cutting back next June or July on non-productive limbs, and wherever else seems desirable. This treatment favors formation of more and stronger fruit buds.

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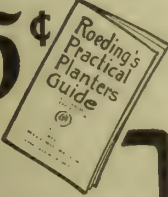
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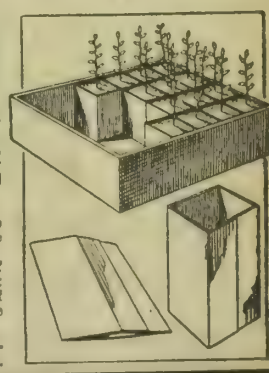
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Colonization in California.

[Compiled for the Pacific Rural Press.]

FIRST PAPER.

Several months ago the Commonwealth Club of California demonstrated its patriotic attitude toward the State by appointing a large, representative committee to study the facts and tendencies of colonization efforts recently undertaken in this State and by the appropriation of \$1000 of its funds to bear the expense of original investigation. The work was undertaken in co-operation with the University of California, Stanford University and the State Commission on colonization and rural credits, through its members who are in the service of those institutions. The results of the investigation are beginning to be attained, and as they underlie true State development and the prosperity of those seeking homes in this State, we shall present them for the consideration of our readers with such detail as shall be compassable. The reader will hardly need to be told that the undertaking is unique and the facts never before disclosed. Our showing will occupy several issues. First we have a condensed summary of the leading facts secured by the investigation compiled from the report submitted by Frank Adams, Professor of Irrigation Investigations of the University of California.

Consent of the Investigated.—At the outset the committee felt that the value of the results to be obtained would depend quite largely on the co-operation received from those interested in land colonization: commercial bodies promoting settlement, selling organizations engaged in actual colonization, owners of

large estates, and settlers already on the land.

What Chambers of Commerce Say.—The investigating committee met with the executive committee of the California Development Board, of the Sacramento Valley Development Association, and of the chambers of commerce of San Jose, Stockton, Merced, Fresno, and Los Angeles.

The average cost of unimproved land given by these bodies was \$260 and the time for payment allowed varied from 3 to 8 years, with interest on deferred payments at an average rate of 6.73 per cent. Outside of mortgage loans up to 30 to 40 per cent of the value of the property, none of these bodies could suggest any source from which settlers can borrow money to complete improvements and equipment except from private individuals. The answers are exceedingly interesting as evidence of what intending settlers without sufficient capital to carry themselves through the period of development can expect from the communities inviting them to come to California.

Land Sellers are Quiet.—Questions were addressed to California land-selling agencies, it being assumed that they would feel some interest in a public inquiry of the nature undertaken. It is regretted that practically no response was received.

Statements of Settlers.—The principal field work of the investigating committee was obtaining statements from settlers. The projects were selected with a view to making them representative of the entire State. Not

counting several projects which were visited, but in which no systematic attempt was made to obtain statements of settlers, the projects or sections included numbered 25 and the settlers interviewed numbered 25 and the settlers interviewed numbered 991.

The chief questions asked were as follows: Occupation prior to settlement; number in family; area in farm; capital at time of purchase and price of land; cost of improvements made annually since purchase, and cost of all necessary improvements; cost of farm equipment, acreage and value of crops from the first to the fifth years after settlement; number and value of livestock on hand during 1915; and present indebtedness and rate of interest charged.

The answers show the average price of land charged settlers in all the projects or sections included to be \$187 per acre; the average time of payment allowed, 5.6 years; the average capital of settlers, \$4,813; the average cost of improving farms, \$2,368; the average indebtedness of those having bank or private loans or contracts on their land, \$2,931; the average rate of interest on bank loans, 8.05 per cent; and the average rate of interest on contracts, 6.92 per cent.

The average area of farms for all of the projects is 36.94 acres. The average capital of settlers per acre is \$130, and the average acreage cost of improvements, \$64.

Adding to the average cost of land the average cost of improvements necessary gives a total acreage cost of approximately \$250. This is the average amount that settlers must have to improve, but not to equip a California farm.

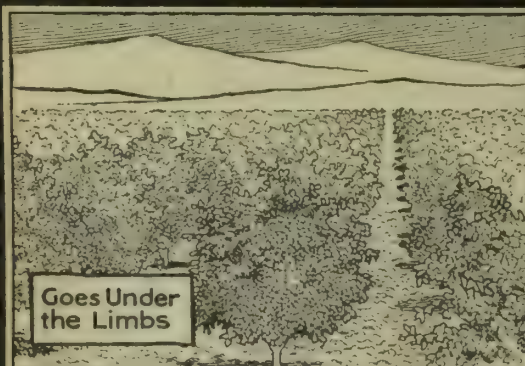
The average age at which settlers

have purchased their land shows that California lands are being settled, not by young men, but those whose average age is 43.6 years.

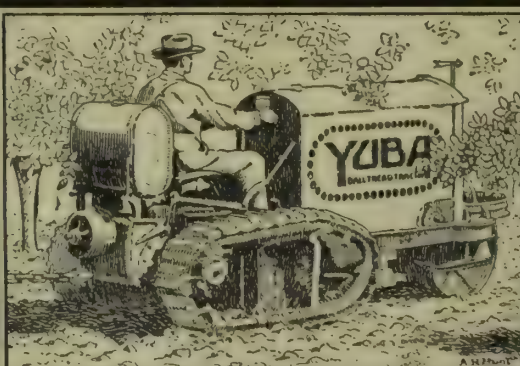
The return received by settlers from their land, exclusive of from live stock, during the first year after settlement, range from \$2.17 per acre to \$14.93 per acre, and with a mean of \$6.78. The average gross return per farm during the first year after settlement is approximately \$250, which is considerably less than the amount needed to keep the average farm family in only meagre circumstances during the first year.

Little Landers Unreasonable.—The reports on the Little Landers Colonies by Professors Wildeman and Adams presents a searching inquiry into results that have been obtained on 1-acre farms in several parts of the State. The conclusion on this type of colonization, based on results at the older colony at San Ysidro, is that it is unsound when viewed in the light of its commercial results. After about five years this colony has not succeeded as a commercial venture because one acre of land under the conditions found at San Ysidro is clearly demonstrated as insufficient to provide a living for a family. This aspect of the colonies does not, of course, affect such residential value as they may have to those financially independent of making their livelihood from their holdings.

Requirements of Settlers.—The report of Professor R. L. Adams seeks to determine for selected business what in California agriculture constitutes: (1) a living income; (2) a family business; (3) the capital required to equip and establish a family business; (4) the capital needed for running expenses; (5) the probable returns; and (6) what farming



Goes Under the Limbs



Goes in 7 foot Rows

New Model 12-20 Yuba

It is only 55 inches wide. It works in vineyards with 7-foot rows. It goes under the limbs and gets close to the trees in orchards. It is simple in design, light in weight and priced accordingly. Write us about the lower price.

It is built particularly for orchard, vineyard and side-hill work; but may be used in scores of other ways, and in any kind of soil.

Its three speeds give it unusual flexibility. It has few wearing parts, and low upkeep. Big operators need it for its particular purposes; smaller operators need it for all purposes.

Orders now being booked for future deliveries.

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SAN FRANCISCO

Works at Marysville, Cal.

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STUDY THESE SPECIFICATIONS

MOTOR: 4½ inch bore, 6¾ inch stroke. Side plates for the easy adjustment of bearings. Extra heavy crank shaft. Equipped with Ensign Carburetor and automatic priming tank. Fly wheel clutch.

TRACK: Tread shoes of cast steel—without bolts. Pins and bushings are renewable. The races are of manganese steel.

TRACK DRIVE: Through manganese pinion that meshes directly with the chain. This pinion is completely enclosed and protected from wear.

AIR CLEANER. Equipped with a Donaldson Air Cleaner, which is almost 100 per cent. efficient in removing harmful dust from air that enters the carburetor.

TRANSMISSION: Of the sliding gear with three speeds forward and one reverse. Direct drive on all three

speeds. Low speed 1½ miles per hour. Intermediate speed 2½ miles per hour. High speed 3½ miles per hour.

DIMENSIONS: Over-all width, 55 inches. Length, 12 feet, 3 inches. Height, 4 feet, 6 inches.

TRACK AREA: 935 square inches. Pressure per square inch less than 5 pounds.

WEIGHT: 6200 pounds.

THE YUBA CONSTRUCTION CO.

Department A-105

433 California Street, San Francisco, California

Gentlemen: Kindly send me a copy of your booklet, "The Yuba Ball Tread Tractor."

Name	CHECK MAIN CROP RAISED
P. O. Box	Fruit..... Rice.....
Town	Grapes..... Alfalfa.....
State	Grain..... Hay.....
Size of Farm..... acres	Hops.....

should pay and whether the selected businesses fulfill their financial obligations. Professor Adams discusses the financial aspects of five different types of agriculture—grain-farming, deciduous fruit raising, poultry raising, dairying, and diversified farming. He finds the total cost of equipping these selected businesses (over and above the cost of the land) to range from \$3,260, for deciduous fruit growing (not counting the cost of setting out and establishing the orchard), to \$6,570 for a 20-cow dairy farm.

He finds that, in order to meet the cost of operating, including depreciation and living expenses of the family, the total sum the various types of business should pay annually varies from \$1,695 for a 20-cow dairy farm, to \$5,768 for a 2500-fowl poultry establishment.

Tenant Farms.—The report of Edwin E. Cox on Farm Tenantry reaches the conclusion that while California's tenants as a whole are faring better physically and financially than those of Eastern and Southern States, yet the prevailing debilitating conditions of land tenantry are by no means absent in California. He finds that aside from the rapidly growing Asiatic element that can not be assimilated, the white contingent of California's tenant class are generally living under conditions inimical to democratic citizenship. "The tenants' children can not make the desired progress in education as they are constantly moving from one school district to another; the parents, because of their transitory life, take little interest in the school. Neighborhood solidarity, so important to communities of home owners, is lacking.

In Southern California.—In his report on land settlement problems in Southern California, A. L. Cowell brings out the fact that, in general, farming in southern California must always be an expensive business because of the high cost of land and water, the constant necessity for experimentation because of the variation of soil and climate, and the long wait for returns from orchards. He finds that real estate men of Southern California have apparently generally given little consideration to the problem of the men with small results.

Mr. Cowell visited five different colonization enterprises and interviewed a number of land-selling agencies, but states that with two exceptions he found no colonization agency that seemed to feel responsibility for the success of its colonists or that had made special plans to help them succeed. This he considered to be due in part to the fact that the selling of land in Southern California, as it generally is elsewhere in the State, is usually independent of the ownership of the land sold. The net result of this he found to be selling costs ranging from 20 per cent to 40 per cent of the sale price, misrepresentation by salesmen in order to secure commissions, and an almost total disregard by the selling agencies of the adaptability of the prospective settler to the conditions to be met with. In closing his report Mr. Cowell suggests the need for a State bureau of information for the dissemination of authoritative data to prospective settlers.

NURSERYMEN'S ASSOCIATION DOINGS.

In our comments on the recent convention of California nurserymen in Santa Barbara, we have spoken chiefly of matters which seemed to have the widest popular interest. Other matters of particular importance to the craft are the following:

The report of the legislative committee consisting of George C. Roeding, M. McDonald and M. L. Germain was submitted by Mr. Germain. Among other things it advised that nursery stock or horticultural products bearing a label showing by whom and where grown is utterly immaterial to the State. But if it is deemed advisable to show

where grown, this requirement may be embodied in the law.

"That shipments from one county into another should have a duplicate invoice mailed to the county horticultural commissioner of the county of destination.

"That the State should be divided into districts of five to seven counties, the chairmen of boards of supervisors in each district to select some prominent fruit grower who will be one of a board to act as an advisor to the State horticultural commission. George C. Roeding, chairman of the legislative committee, was appointed to represent the association in proposed legislation revising our horticultural laws. The members of a special committee on seed legislation are M. L. Germain,

C. W. Ward, George C. Roeding, W. J. Pettingell and F. H. Wilson.

A committee which has important work laid out for it is that of standardization and values. It consists of J. J. Reeves, F. M. Warner, J. D. Meriwether, J. S. Armstrong, G. F. Otto.

A committee, new to the organization, is that on information and publicity. It consists of H. W. Kruckeberg, Charles W. Ward and George C. Roeding.

Officers elected for the coming year are: President, Leonard Coates, Morganhill; vice presidents, John Vallance, Edward H. Rust, Max J. Crow, Chas. Howard, Geo. F. Otto; secretary, H. W. Kruckeberg; executive committee, J. D. Meriwether, Frank H. Wilson, John Gill.

Why Plant Trees?

- They add value to the property
- They add beauty and comfort to the home - - - - -
- They cool the air in summer and radiate heat in winter
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Successful Planters

—recognize the fact that they can't get good results from poor trees. This is true of fruit trees as well as ornamentals. It doesn't pay to take chances on inferior stock—even though you may "save" a few cents at the start. The cost of planting, pruning and bringing an orchard into bearing is no more for good trees than for poor ones.



Thousands of planters all over the coast know the real worth of Roeding's True Trees. Our stock is healthy, firm rooted, and presents an attractive appearance. Our fruit trees will bear fancy fruit—the kind that tops the market, and you know what that means in the way of profits.

We Grow Nearly Every Thing that Grows

—and can fill your orders complete. For this season we have a splendid stock of apples, pears, peaches, prunes, apricots, almonds, plums, nectarines, cherries, walnuts, pecans, olives, oranges, lemons, pomeles, etc.; also nearly every wanted variety of palms, evergreen shrubs, climbing and trailing vines, etc.

Get Roeding's Advice

—before ordering. Let us help you plan your grounds. Whether you buy of us or not we are always glad to help prospective planters in their selection of varieties, and this advice costs you nothing. Write us.

OUR NEW CATALOG WILL SOON BE READY

If you wish a copy please let us know now so we can send it as soon as it comes off the press. When writing send us your list for prices and suggestions.

Fancher Creek Nurseries

Geo. C. Roeding
President & Manager

407 Holland Bldg.
Fresno, Cal.

Mechanical Power on the Farm.

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of your experiences and troubles.

GRAIN SACKS TOO EXPENSIVE.

[Written for Pacific Rural Press.]

Barley sacks didn't cost anything last year for E. V. Givens of Merced county, though his brother had to pay 13 1/2 cents each for his. The former put up a 500-bushel temporary bin in the grain field, dug a pit beside it and installed a hopper into which he could dump his wagon-loads of bulk grain from the ground. To raise the grain from pit to bin he put in a cup-and-belt elevator run by a gas engine of 2 or 2 1/2 h.p.

One team and grain-tight wagon hauled grain from the hopper on the harvester to the bin; while two teams of 10 animals each hauled 6 or 7 miles to the grain elevator at Merced.

The wagons hauling to town were loaded direct from the belt-cup elevator by swinging it around away from the bin. If the field wagon were dumping at that time, the grain was handled only once. If not, a trap was opened to let grain from the bin into the hopper, whence it would be elevated into the wagons.

Bin for Hilly Land.—If the ground were hilly, the engine could be dispensed with. The bin would be built on a steep hillside. A road would be dug above it and another below it. Field wagons would drive above and dump into a chute that would carry grain into the bin. Hauling to town, the wagons would drive along the lower side of the bin and open a trap to load, also by gravity.

DUAL PURPOSE TRACTORS.

[Written for Pacific Rural Press.]

Whether a dual purpose tractor and automobile or auto truck is of more value than dual purpose livestock, is yet to be tested out. There are several attempts along this line recently put on the market or about to be.

One of them is the La Dow Combination Road and Farm Tractor which runs 7 miles an hour at normal speed on the road and 3 to 5 miles in the field. It has hauled 12 tons of hay on trailers at 8 miles an hour, though part of the road was freshly oiled.

It has a regular auto truck front and tractor wheels behind, is about 12 feet long, and is supposed to give 16 h.p. on the drawbar at 4 miles per hour.

The Barker Tractor is another dual purpose machine soon to be put on the market. Its feature is the drive from all four wheels, four speeds forward and two reverse, ranging from 1 1/2 to 12 miles per hour. It is four feet high and 12 feet long, develops 20 h.p. on the drawbar and is claimed capable of pulling 25 tons at 12 miles per hour on hard roads.

PLOWS AND SEEDS GRAIN IN ONE OPERATION.

[Written for Pacific Rural Press.]

About two weeks after early rains, C. T. Givens of Merced county starts plowing for grain. To start sooner would turn under a lot of weed seed which would hurt the grain. He hooks a Stockton gang plow of 7

ten-inch bottoms behind a 30 h.p. Best tractor. He fastens one end of a seeder to the rear of the plow and lets the other end run on a wheel. Behind the seeder are two harrows. Thus the whole operation of putting in the crop is done with one trip over the ground.

The advantage of narrow bottoms is in the smaller chunks turned over. The advantage of only one trip is that a second one would pack the ground noticeably. Another advantage of waiting till after the first rain is that the ground on top is somewhat mellowed and turns fewer clods under.

PUTTING DOWN A WELL.

[Written for Pacific Rural Press.]

Instead of using a divining rod or other hoax to find water when it was decided to sink wells for certain orchard land on North Whittier Heights, Los Angeles County, a test hole was sunk near the creek, at considerably less cost than for a well, which might not yield enough water. Their test hole was a well itself, being 12 inches in diameter, according to Dr. G. E. Wanberg who controls the water company. A 12-inch hole cost 4 cents a foot. Water prospects being found satisfactory, a 24-inch well was sunk 209 feet at a cost of \$2600.

Lots of Loose Sand was encountered. In the 24-inch hole an 18-inch casing with 600 perforations per foot was sunk. Three or four carloads of sand were pumped out as the work progressed, and this was replaced in the space outside the casing with 113 yards screened gravel to hold the rest from coming through and yet permit easy flow of water. A Layne and Bowler pump in the 14x10 pit 18 feet deep, forces 101 inches up hill through a 12-inch steel pipe line.

POWER NOTES.

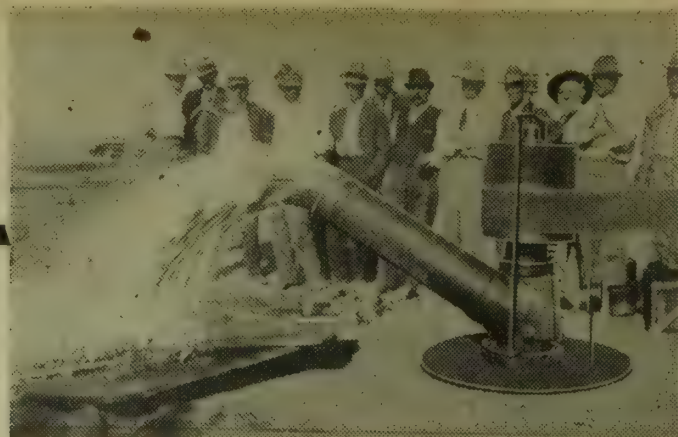
Shipments of Samson Sieve Grip tractors have been going to France, Australia, New Zealand, Canada, and Mexico.

The Waterloo Boy tractor manufacturers have been making an average of 30 tractors a month for the past year for a European firm who sells them for farm use, according to Mr. Sells.

"Does it turn short enough to use in an orchard?" was the commonest question at the Puente Tractor Demonstration. "Doesn't it pack the ground?" was another, to which the usual reply was that the weight of the tractor is distributed over enough more square inches of ground so that the pressure per inch is less than that of a horse.

A "rice chisel" consisting of a frame in which are fixed five subsoiler standards about two feet long has been made by the Killefer Mfg. Co. for Lutz & Co. of Santa Ana. Rice fields are often too wet to plow decently, but the subsoiler opens and loosens the soil without slicking or packing it.

An automobile to haul freshly packed Malagas to the shipping station for A. B. Cate of Fresno coun-

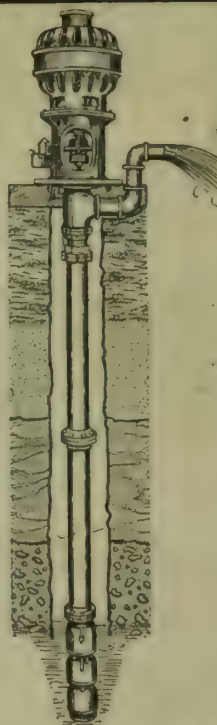


Layne & Bowler Pump in operation near Los Angeles.

LAYNE & BOWLER PUMP Minimizes Trouble

Are you having difficulties with your present pumping system? Are you getting only part of the water your well should produce? Is the expense of operation eating up the profits? Is your pump continually out of order? Almost always needing some kind of repairs? With the old-style pumping plant you are bound to have trouble of this sort, more or less. Install the LAYNE & BOWLER PUMP and be on the safe side. It's the final choice of the up-to-date pump user. Our new catalog No. 25 gives full details. Write for it.

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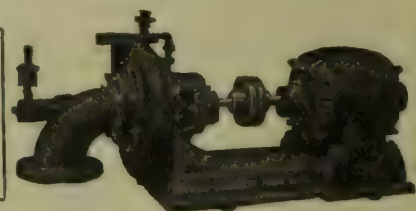


DEEP WELL TURBINE

No valves to pack or plunger rods to get out of order. For use in any well ten inches in diameter or over.

A complete line of irrigating pumps of all descriptions, horizontal and vertical for belt drive or direct connection to electric motor.

Prices as low as are consistent with good quality and workmanship.



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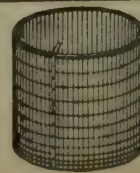


Because it's a refined gasoline—not a mixture.

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ty is fixed to hold 45 crates per load by laying 2x4's crosswise of the bed.

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Water Troughs, Windmills, Frames, and Towers, Steel and Wood. Prices the lowest.
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Send me samples of Belting that you will guarantee to give satisfactory service on my work and quote prices delivered at

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M.P.	Gasoline Engine	_____
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	Straight	_____
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REDWOOD TANKS — SILOS.
Thirty-five years in this business in Stockton.—A 500-gallon tank, \$8.00. A tank 6 ft. x 2 1/2 ft., \$7.50. Other tanks equally cheap. I deal direct with the consumer, saving 10% to 25%. All sizes in stock. Clear, dry redwood direct from the mill. Write for price today. Latest improved machinery. Doors, Windows, Frames, Mouldings.
R. F. WILSON, STOCKTON, CAL.

TRACTOR FOR TEN ACRES.

(Written for Pacific Rural Press.)

F. P. Clark of Covina has had a 6-12 Samson tractor since two years ago this fall, for use on his 10 acres of oranges. He has used his team less than six days during that time, except in hauling fruit to the packing house. He plows, cultivates, and furrows with the machine, figuring \$1 per 9-hour day for fuel. He has also used the tractor to pump water into the tank for house use. He was well satisfied with it for the 10 acres of orchard, but for less than that, he thinks a tractor does not pay.

POWER NOTES.

Churchill county, Nev., has purchased a large Holt Caterpillar and is using it for road work at the present time.

Philip F. Rose, a Wisconsin machinery expert, says that more power is used on the farm than in manufacturing enterprises. Counting horses, mules, windmills, tractors, and gas engines, the total power developed on farms amounts to 28,000,000 horse power. Manufacturing enterprises use about eighteen and three-quarters million horse power.

Included in the machinery recently purchased by the Lindsay-Strathmore Irrigation District, Lindsay, California, were eighteen pumps to go in 16-inch wells. All these pumps were manufactured by the Layne and Bowler Corporation of Los Angeles.

The California and Hawaiian Sugar Refining Company has just contracted with the Layne and Bowler Corporation of Los Angeles to drill a test well and install an up-to-date pumping plant to supply water for its big refinery at Crockett, California.

CONCRETE FIREPLACE.

To the Editor: Is concrete fire-resistant enough to be used for back and sides of a fireplace instead of fire brick? If so, what proportions should be used and how thick should the walls be?—R. S. H., Napa.

[Yes, if mixed with clean sharp sand and pebbles or rock which do not crack when exposed to fierce heat. We would make the walls about 3 inches thick and not put wood or other inflammable material directly against them on the back side. A sack of cement, two cubic feet sand, and three or four cubic feet of pebbles or rock mixed thin enough to pack well around woven wire or rod reinforcement, will be good. Be sure if you lay wet cement against bricks, that the bricks are absolutely full of water first. We were once accused of using poor cement on bridge piers because a local resident had plastered his brick fireplace with some of it and the cement dried out before it could set. It should be kept moist for several days.]

The first farm loan association organized in the West is the Delano-McFarland National Farm Loan Assn., in which 24 farmers have taken membership, and will apply for \$66,800 loans, in sums ranging from \$500 to \$10,000.

The Farmers and Merchants' National Bank, an organization of the National Loan Ass'n, branch of the Federal Loan Bank, has been organized by farmers in the vicinity of Merced.

ED. H. WITTE
Master Engine Builder, Farmer, Breeder of Prize Winning Holstein Cattle

My Big Factory Output Makes WITTE Prices Low

Buy On Your Own Terms

I have now made it possible for any worthy, creditable man, anywhere in the United States, who wants a high-grade farm or shop engine, to buy practically on his own terms—any size or style WITTE Engine—Saw-Rig Complete, Stationary, Portable, or Horse Portable—

NO MONEY DOWN—Easy Payments—Bank Deposit, or Cash

Take your choice of payments—take your choice of engines—Gasoline or Kerosene. Then take the engine you want, try it 90 days—prove its superiority—learn how easy it is to do your work with a WITTE. I could not make you this offer if I did not own and operate the largest exclusive engine factory in the world, manufacturing and selling high-grade engines direct to users—capacity 12,000 engines yearly.

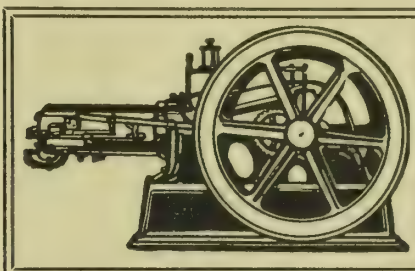
Write for latest WITTE prices on 5-Year Guarantee, and my new Free Book, "How to Judge Engines"—mailed postage paid.—Ed. H. WITTE.

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That's what you require in a pumping engine—also simplicity and economy in operation. **COMMERCIAL ENGINES** combine all these salient features in the highest degree. They are built for strenuous work and long service—built to do just what is expected of them without hitch or trouble.

We are always glad to meet the man who wants to investigate—who says, "Show me." It is the discriminating and careful buyer who picks a **COMMERCIAL**. And don't forget you are protected by an ironclad Written Guarantee. Write for our handsome new illustrated catalog—tells all about **COMMERCIAL** construction.

Commercial Engine Co.

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Branch: 1228 "H" St., Fresno, Cal.

Pull Big Stumps by hand

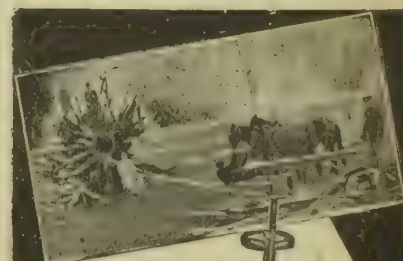
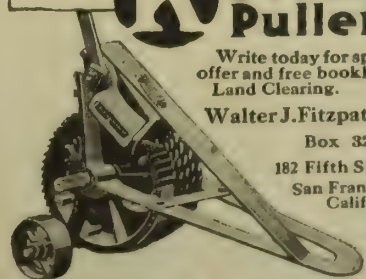


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Pull Out Stumps With the Famous Hercules!

Triple-Power

Pull an acre or more of stumps a day. Pull any stump in 5 minutes or less. Don't have loader land when it's so easy and cheap to pull the stumps out! Make 1000% profit by using the Hercules. \$1281.00 the first year on 40 acres! \$750.00 every year after. Let us prove it.

Low Price and Book Free!

Get the facts. Read our book. Tells what all steel, triple-power means. Shows many features of the Hercules. Shows many photos and letters from owners. Postal will do.

HERCULES MFG. COMPANY
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Wanted, a Thousand Farms.

Farms for annuity bonds! Why not sell your farm, avoid all care, anxiety about crops, and invest the proceeds in annuity bonds, yielding a sure even income from 4% to 9% on one life and 4% to 8.3% on two lives. These bonds are of special interest to Baptists and others who wish their money to help Christianize America. Forty years' experience! Write for our booklet. **CHARLES L. WHITE, The American Baptist Home Mission Society, Dept. O, 25 East 26th St., New York.**

The San Francisco restaurant men are preparing to enter the hog and poultry raising business, to save restaurant patrons of San Francisco from paying war prices for food, says a daily press report. They have bought a large tract of land near San Rafael, and will ship food refuse from their restaurants to the ranch for feed.

General Agricultural Review.

FIELD CROPS.

The late rains did not materially hurt the Lompoc Valley crops.

Manteca will experiment with the growing of cabbage as a winter product.

The bean losses of the Santa Ynez Valley were much less than first feared.

H. Eto, a Japanese at Lompoc, disposed of 16,000 barrels of mustard at ten cents.

The Pacific Rice Growers' Association claims to have an outlet for 500,000 sacks of rice as soon as it comes in.

State Housing Commissioner Brown says he found bad sanitary conditions in the rice fields, on a recent tour of inspection.

Joseph H. Stephens of Sacramento, president of the Pacific Rice Growers' Association, estimates California's production of rice this year at \$5,000,000.

George Cook of the Mount district, Ventura county, says from a portion of his ranch that last year he got 385 sacks of limas; this year he will thresh 933 sacks.

Reclamation of alkali lands through rice cultivation looks very promising, says Chas. E. Chambliss, in charge of the rice investigations of the U. S. Dept. of Agriculture.

The bean crop of Sutter county this season will be about three million dollars. The price is far above the average, the best varieties now selling at 8 to 9 cents per pound.

Sweet potato growers of the Atwood district are reaping a harvest of profits for this year's crop, the price, \$1.25 per hundred weight, being double last year's quotations.

Bean growers of Santa Barbara county report a banner crop of beans, and say the damage by the rains was not near so great as expected. Growers are said to be getting 9 to 9½¢ for whites, both large and small.

The high price of cotton and cotton seed, it is said, will stimulate the planting of cotton next year in the Imperial Valley. The acreage in the Valley this year was 100,000; next year it is thought that it will reach 140,000 acres.

Reports from the Whittier district say that the loss to the bean crop will not be as heavy as first reported. The threshing of blackeyes and Lady Washingtons is nearly completed, and the yield is turning out better than expected.

The estimated average yield of wheat per acre in Canada in 1916 is 10.5 bushels in Manitoba, 16 in Saskatchewan, and 24.25 in Alberta. The low yields are due largely to crop damage.

The combined harvester made especially by the Holt Manufacturing Company for cutting rice will reduce the cost of production at least one-third, it is said, and will practically revolutionize the rice-growing industry of the State.

The Sacramento canneries have shipped most of their produce and will be entirely cleaned out of canned goods, both fruit and vegetable, before next season arrives. Tomatoes are being shipped East at prices hitherto unheard of.

All Japanese engaged in rice-growing in California will become members of the Pacific Rice Growers' Association according to a pledge given the executive board of the Association at its meeting by M. Matsumoto, secretary of the Japanese Agricultural Association.

The pink boll worm, the most destructive pest known to the cotton-grower, has appeared for the first time in North America. Following a recent visit of a number of Federal Horticulturists to Calexico, the local custom house officials were notified by telegraph Nov. 4 that a

quarantine had been placed on all cotton from Mexico except Imperial Valley.

Ten thousand sacks of rice, grown in the vicinity of Madison, are daily being brought to Woodland by trucks which are operated day and night. The Globe Milling Company's warehouse, which has a capacity of 250,000 sacks, will not be able to accommodate the crops of the county.

H. C. Woody of Van Nuys says he has sold \$690 worth of potatoes from an acre of land this year. His first crop was 142 sacks, which he sold at \$1.60 per cwt., netting \$240. His second crop was planted July and was irrigated once. This planting made 150 sacks, which are worth at the present time \$3 per sack.

DECIDUOUS FRUITS.

The California Peach Growers have withdrawn prices on fancy Muirs. The supply is exhausted.

The State convention of the California Nurserymen's Association for 1917 will be held in San Jose, October 11, 12, and 13.

Interest and faith in the California Prune and Apricot Growers' Association is evidenced by a large number of Hollister ranch owners, who have signed up to take stock in the organization.

The United States Department of Agriculture says that reports from 352 storages show that 949,147 barrels and 1,062,564 boxes of apples had been stored in their rooms before the 15th of October, 1916.

The State Horticultural Commission has established a sub-laboratory at Pasadena, with E. J. Branigan in charge, for the purpose of breeding "paraleptmastic abnormis," a near relative of the common ladybug, a parasite from Sicily, to destroy the destructive mealy bug.

The new Yolo County Horticultural Commissioner to succeed G. H. Hecke, who was recently appointed State Horticultural Commissioner, is Wm. Gould of Woodland. Mr. Gould has proved most efficient as Deputy County Horticultural Commissioner, and is highly recommended by Mr. Hecke.

CITRUS, NUTS, SEMI-TROPICAL.
The Riverside orange crop this season totalled 3236 cars.

It is estimated that 900 to 1,000 tons of olives will be forwarded from Lindsay this year.

U. S. citrus experts have just visited Porterville to study grapefruit conditions.

Orange packing started in the Oroville district about the middle of this week.

Oranges in the Pomona Valley, it is said, are coloring nicely, and the crop there this year will be worth \$3,000,000.

Ventura county is moving in the interest of the standardization of oranges and lemons before the same are put on the market.

It is reported from Walnut that the Walnut Fruit Growers' Association has paid out \$68,000 for English walnuts, and the end is not yet.

The consumption of walnuts in the United States is increasing rapidly. The estimated consumption of the past year is 67,515,000 pounds.

The first car of oranges from the Lindsay district was shipped to San Francisco November 6. The fruit was of good color and tested over 8 to 1.

The packing-house of the Covina Heights Grove Assn. was totally destroyed by fire on the night of Oct. 27, with a loss of \$12,000, covered by insurance of \$10,000.

M. J. Rouse, local nurseryman of Visalia, has offered to donate 2,000 California black walnut trees to plant on each side of the State highway between Visalia and Goshen.

The first car of navel oranges to be shipped from California to the Eastern markets was sent November 2 from Woodlake. It tested 9½ to 1. The car was billed to Minneapolis.

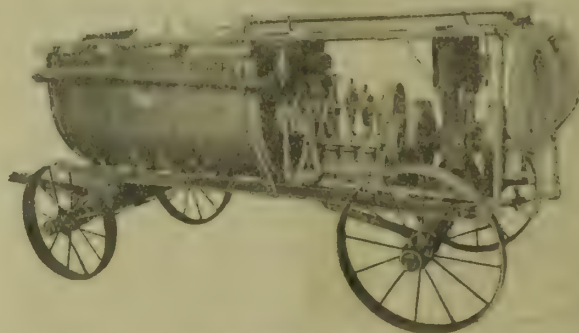
A new record high price for Porterville lemons has just been made in New York, where a carload lot has just been sold for \$6 per box. The lemons were grown in the Farr & Shippey grove at Zante.

On petition of the Tulare County Protective members, packers and shippers, the newly-adopted orange standardization law has been amended so that funds to cover inspection work will be paid by the packing organizations.

At a meeting of 250 orange growers at Riverside last week it was voted unanimously to ask the Board of Supervisors to adopt an ordinance requiring that all oranges shipped

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BEAN Power Sprayer

It pays to clean up your trees.

Scaley, moss-covered trees may pay fair profits—but they can never bring you the full returns you can get from trees that are clean and healthy.

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The Losse is unsurpassed for size, uniformity, color, quality, and all-round merit. It is absolutely the best cot for hand-eating or canning. When you plant a cot orchard—plant the best trees you can buy. It pays.

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Trees and Shrubs

Suitable for Pacific Coast conditions.

Mail Us Your
Name and P.O.
Address,
PLEASE

from Riverside county shall pass the eight to one test.

The California Associated Olive Growers, Inc., have just completed their plant at Fallbrook, San Diego county. They are also packing under contract at Porterville. They expect to put out 15,000 cases this season, all of which is already sold. They report that oil olive growers are "up against it."

The supervisors of Los Angeles county have been petitioned to pass an ordinance prohibiting the shipping of oranges that will not pass the 8 to 1 test. While the majority of growers favor the ordinance, some independent shippers object to it, and say they will fight such a measure. The matter is being taken under advisement by the supervisors.

Walnuts around Whittier have nearly all been harvested; only the work of gleaning is now to be done. Wallace Gregg, secretary of the Whittier Walnut Growers' Association, says that already 1,000 tons of walnuts have been delivered to the Los Nietos packing house, and about 50 tons more yet remain to go forward, making a total of 1050 tons.

GRAPES.

The Lodi wineries are taking Tokay strippings now, paying \$8 per ton for them.

California raisins are bringing the highest price in Chicago in the history of that city.

Sixty tons of Sultana seedless raisins were shipped last week from Woodland to Liverpool, Eng., via New York.

Between 25 and 30 per cent of the 1916 muscat crop was lost as a result of the early rains, entailing a loss of about \$2,000,000.

W. E. Lewis of Selma took 45 tons of green grapes from his five acres of three-year-old Thompson Seedless vineyard. These were sold at \$27.50 per ton to a private party, to be bleached.

The Sebastopol winery of the California Wine Association has begun crushing the second run of grapes. Thus far this season the winery has crushed 1200 tons of grapes, dispensing \$22,000 to the growers and \$1200 in labor.

MISCELLANEOUS.

San Luis Obispo Co. is after a Farm Adviser from the State University.

Libby, McNeill & Libby have purchased five acres of land adjoining their big plant in Selma.

Approximately \$4,000,000 is the estimated cost of the work necessary to reclaim Tulare Lake if an overflow district is formed.

Modesto has been chosen as the meeting place of the 1916 State Convention of the Farmers' Educational and Co-operative Union of America, to be held Dec. 18, 19, and 20.

NAPA PRUNE GROWERS ORGANIZE.

The prune growers of Napa Co. held a well-attended mass meeting at Napa last Saturday and decided to organize for mutual protection and to promote their common interests. The meeting was addressed by Hugh Hersman of Gilroy, who has done such effective work in Santa Clara Co. in the same line, and also by H. C. Dunlap of Napa, both of whom explained to the growers how they were exploited by the packers, and exhorted them to make an organized effort to bring about better conditions in conjunction with similar organizations springing up in the prominent prune-growing sections of the State. A committee was appointed to complete the organization. Four hundred acres were signed up. A similar meeting is to be held at Suisun today (Nov. 11).

THE CITRUS INSTITUTE AT RIVERSIDE.

The five-day program of the Citrus Institute under the auspices of the Citrus Experiment Station, University of California, to be held at Riverside, November 20-24th, in-

clusive, 1916, has been issued. In arranging this program great care has been exercised to present discussion of as many of the factors of orchard management as possible. The men who are scheduled to speak on the different subjects are highly qualified through experience and investigation. Discussion of those

phases of management upon which no definite suggestions from experimental data are at hand have been purposely omitted. The lectures will be held at the Polytechnic High School, Riverside, Calif. All who can possibly do so should attend these sessions. There is no charge of any sort for the course.



DEEP TILLAGE FOR BEET CULTURE

Cutting 100 Inches Wide and 14 Inches Deep.

Two Knapp Tractor Plows behind a 75 H. P. engine. Look how they stand up to the work. Ten discs—making a cut 100 inches wide and 14 inches deep in hard soil. It pays to plow with a good plow like

THE KNAPP TRACTOR DISC PLOW

Absolutely the best tractor plow on the market. Built solid and strong. Handles easily and quickly adjusted. Light in draft. Stays in the ground. Will plow any soil that can be plowed. We also build specially designed orchard plows.

Write for Descriptive Circular and Full Information.

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Hairy Peruvian produces 2½ tons more per acre than the ordinary varieties of alfalfa, and one ton more per acre than the famous smooth Peruvian alfalfa.

HAIRY PERUVIAN is a thoroughly tested plant. It has been tried out and endorsed by the Arizona State Experiment Station, and by growers in both hot and cold countries. It produces heavily in all climates practically the year round. Does well at 5000 feet, or at sea level.

HAIRY PERUVIAN produces large leaves from the top to the crown of the plant, and as the leaves contain the greatest and best part of the food value, this is the most important reason why you should plant Hairy Peruvian.

Don't fail to plant Hairy Peruvian this season. Send for folder containing facts and testimonials.

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**Produces 2½ tons
more to the acre than
common alfalfa**

Milo Better Hog Feed Than Barley.

University Test Shows Great Advantage of Ground Milo over Rolled Barley, in Rate of Gain, Cost per Pound of Grain, and Dressing Percentage of Carcass.

[Written for Pacific Rural Press.]

The 97-day hog-fattening test completed under direction of Prof. J. I. Thompson, at University Farm, Oct. 17, with eight pens of 12 hogs each, was described in a recent issue. The pigs averaged about 4 months old, weighing 102 pounds at the beginning. They averaged 220 pounds at the end, but each lot differed from any of the others.

The Western Meat Co. bought and butchered them, keeping records of their dressed percentages and paying accordingly.

Twenty cents per hog per month was charged for pasture, which is higher than is ordinarily used, but present prices of alfalfa seemed to warrant this. Eleven cents per 100

omy of production, anyhow.

Ground mlo, tankage, and alfalfa pasture produced gains at a cost of 6.6 cents a pound; while rolled barley, tankage, and alfalfa pasture made the gains cost 7.7 cents, and averaged 38.3 pounds less gain per hog in the same time. It took 10 per cent more barley than ground mlo to make one pound of gain when both were fed in self feeders with tankage and alfalfa pasture. The dressed percentage of the mlo-fed hogs was 83.1 as against 78.8 for those fed barley.

The figures for Lot 1 furnish conclusive evidence that \$32 barley can not be fed profitably to hogs in a dry lot, and according to Lot 5, there

RESULTS OF UNIVERSITY HOG FEEDING EXPERIMENTS.
Closed October 17.

Lot	Kind of feed. Average weight	at beginning lbs.	Average weight at finish, lbs.	Feed for 1 lb. gain	Cost of 1 lb. gain at aver. cost of feeds for 5 yrs.	Cost of 1 lb. gain at actual cost of feeds.	Per- centage	Selling Price
1	Rolled Barley Dry Lot	102.2	193.7	Barley . . . 6.0	8.1c	9.6c	73.6	\$8.75
2	Rolled Barley, Alfalfa	101.0	212.3	Barley . . . 5.2	7.6c	8.9c	79.8	9.05
3	Rolled barley in self-feeder. Alfalfa pasture	100.9	220.0	Barley . . . 4.5	6.6c	7.7c	79.1	8.95
4	Rolled barley and tankage in self-feeders. Alfalfa pasture	100.8	223.7	Barley . . . 4.4	6.6c	7.7c	78.8	8.95
5	Rolled barley, cut green. Alfalfa	102.1	200.8	Barley . . . 5.6	7.7c	9.1c	78.7	8.95
6	Rolled barley (2-3) shorts (1-3). Alfalfa pasture	103.3	226.3	Barley . . . 3.5	7.4c	8.6c	80.3	9.05
7	Rolled barley (1/4). Coc. meal (3/4). Alfalfa pasture	102.3	227.0	Barley . . . 3.6	6.7c	7.3c	80.0	9.05
8	Ground mlo and tankage in self-feeders. Alfalfa pasture	102.8	254.0	Mlo . . . 4.0	6.0c	6.6c	83.1	9.35

lbs., or \$2.25 per ton, was charged for green alfalfa. Twenty-seven dollars was used as the average price of barley for the past five years and \$32.00 is the present price. Similar figures for tankage are \$41.00 and \$42.00; shorts, \$29.00 and \$33.00; coconut oil meal, \$24.00 and \$20.00; and mlo maize, \$27.00 and \$30.00.

The pigs in Lot 1 cost 5c per pound up to the time they were put into the experiment, and this figure is used for all lots. No labor costs are included, and this gives additional advantage to the self-feeder lots, all three of which lead in econ-

is little economy when cut green alfalfa is fed in addition. Lot 6 shows that when hogs are selling below 9 cents, shorts at \$29 and \$33 a ton are too expensive a supplement to rolled barley when alfalfa pasture is available. Lot 7 shows a saving of .7 to 1.1c per lb. in cost of production, when coconut meal at \$24.00 and \$20.00 is used instead of shorts at the above figures. Lot 1 was divided, the lighter hogs being separated out. The heavy ones dressed 77.7% and brought \$8.85; the others bringing just \$8.75. Lot VIII dressed the highest, 83.1%, and sold for \$9.35.

San Benito Berkshires.

[Written for Pacific Rural Press.]

Among other fruit growers who are establishing herds of purebred livestock on their farms is Dallas Basche of San Benito county, who has been growing hogs for the past four years in connection with the cultural work of raising a young orchard.

Mr. Basche has been growing purebred Berkshires for some time, but during the past summer has started to improve the quality of his herd by the purchase of some of Rival's Champion Best female stock, and one of the best sons of Grand Leader 2nd for his herd sire. With his four years' experience and the present high quality of his foundation herd,

Mr. Basche hopes to breed an outstanding line of Berkshires.

UNIVERSITY CO-OPERATION.

The University of California will co-operate with the Farm Loan Board in inaugurating in California the new rural credit plan. The Farm Advisers, maintained by the university and the United States Department of Agriculture in various counties, will take up with the Board of Directors of the Farm Bureau in each county the plan of appointing a farm loan committee to take charge of inaugurating the federal farm loan system. There are 175 such Farm Bureau Centers in California.

Shorthorn Bulls

BERKSHIRE SWINE

We will arrive about November 8 with the best shipment of Registered, Tuberculin-Tested

Scotch Topped Shorthorn Bulls

we have ever brought out from the East. We have visited the numerous herds in Nebraska, Iowa, and Missouri, and selected only large, growthy, heavy-boned bulls, ranging in age from 15 months up and in splendid condition.

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GRANDSONS OF TILLY ALCARTRA



Prince Alcartra Korndyke,
Best bred son of Tilly Alcartra.

Our supply of these young sires is always limited, but we have a few now which we are offering at very reasonable prices.

Write us at once, or call and see the herd.

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"THE NAME GIBSON INSURES QUALITY."

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GRAND CHAMPION BOW,
P. F. I. E. 1915; Sacramento 1916.

For many years, at widely separated show rings, under many different judges of varying type ideals, my Poland Chinas have been consistent prize-winners. My herd is large, and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished. Young Stock, \$30 Up.
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AMERICAN JACKS AND JENNETS.

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40 Head Jacks

CAN SUPPLY YOUR WANTS AT ALL TIMES.

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Digester Tankage

Send for Sensible folder on feeding hogs

Western Meat Company

Animal Food Dept. 704 Townsend St., San Francisco

California Hog Book

BY W. S. GUILFORD.
Price, \$2.00 per Copy, Postpaid.

Livestock on Public Highways.

To the Editor: In a county like Lassen where there is no law against turning stock out on the roads, does not the owner of said stock turn them out at his own risk, or can he claim damages if stock is injured or killed by autos or teams?—H. A., Standish.

[Answered by T. C. Judkins, Jr., University Farm, author of our recent article on "Agricultural Fence Laws."]

Yes, it would be illegal to turn stock out upon the highways of any county in California. "Any person at any time finding any stray animals upon the highways adjacent to his property, may take up the same and have a lien upon them for all expenses incurred in keeping said animals" until the owner himself appears and claims them. Thus the State law implies clearly that no animals shall be turned out upon any public roads and should only be permitted thereupon when being driven from one farm or place to another (and must then be in care of a herdsman, etc.) Any cattle let

roam at-large upon public roads are there illegally and the owner will be liable for any damages they inflict. If stock is at large by mistake and is wilfully and maliciously run down by a passing vehicle, the conditions would be altered however, but this would be an exceptional case. It is also highly probable that the county of Lassen further supplements this State law by more definite and stringent local ordinances, which make it even harder upon such stockmen. The California Legislature has made an exception of the stock-ranging counties of Shasta, Trinity, Modoc, Del Norte, Siskiyou, and Lassen counties, however, in that cattle found upon the lands of another are not necessarily to be classed as strays. But this exception would have nothing to do with the State law covering estrays upon public roads and such turning out of stock is as unlawful, in our opinion, in Lassen county as in any other California county.

Are Rice Middlings Good Sow Feed?

[Written for Pacific Rural Press.]

Since the advent of rice mills in this State there has been more or less experimenting with rice by-products as a feed for farm animals and particularly has this been true with rice middlings as a hog feed. When fed in connection with other feeds to fatten market hogs rice middlings seems to be well thought of by all those who have tried it, but in at least two cases this has not held true with brood sows.

Two prominent breeders inform us that when rice middlings comprised one-fourth of the ration it seriously affected the young pigs in the litters, in both cases the middling fed sows farrowing pigs weak in constitution and lacking uniformity in size, one breeder stating that many of the pigs never got out of the sheath

and some were badly decayed, looking as though they had been dead a month. When this condition was found to be prevalent with all of the sows being fed the ration the middlings were discontinued and since then no like experience has been had.

For fattening hogs middlings seem to be entirely satisfactory, one of the before mentioned breeders relating how he had turned off five-month-old hogs weighing on the average 169 pounds and these had been fed on rice middlings, soaked milo, skim milk and molasses. While the gain was not unusual it indicates that the middlings had no harmful effects in this case. We should be glad to hear what others have found out about rice middlings as a feed for brood sows.

Benefit by State Dairy Cow Competition.

[Written for Pacific Rural Press.]

If you are not already a member of a local cow-testing association and expect to enter grade cows in the California Dairy Cow Competition it will pay you to join your local association at once.

Although it is not compulsory for a contestant in the State competition to belong to his local cow-testing association, such members will have decidedly lower cost of testing. The rules provide that weights and tests provided by an officially recognized cow-testing association shall be considered official if the testing is done every fourth month by a representative of the University of California.

It will be necessary to send a University tester only twice during the ten-month lactation period instead of 10 times as will be the case when the herd is not entered in a recognized local association. The regular charge for grade cows will be \$5 for each 15 cows or less each month, making a total of \$50 for the 10 months, but under the above ruling association members will only pay \$10 for 15 cows during the entire lactation period in addition to their regular association dues of \$1 to

\$1.50 per cow per year.

This will undoubtedly result in a large number of entries of grade herds already entered in cow-testing associations as it only means an additional charge of \$10 for each 15 head entered, and allows the member to compete for all of the grade cow prizes, which amount to many hundreds of dollars.

Where several neighbors wish to enter only a few cows each, they may be able to bring them together into a herd of fifteen ready for the tester; and share the expense.

Intending contestants should write at once to Prof. F. W. Woll, University Farm, Davis, Cal., for entry blanks and rules.

COWS EAT FENCES.

To the Editor: My cows are trying to eat up all the fences on the place—shakes, shingles, or any old redwood they can get.—A. B. K., Manchester.

[Give these animals one dram iron sulphate desiccated, one dram saltpeter, and one ounce charcoal in the feed once a day. Place salt where they will have free access to it.]

REMCO

Air-Dried Redwood

PIPE

For Irrigation—Water Supply—Power. Sizes 2 inches to 12 feet. For pressure up to 400 feet head. Guaranteed for 100 per cent overload.

Costs less than any other pipe of equal capacity, efficiency and endurance.

Not affected by worms or insects, acid or alkaline soils, electrolysis or roots.

Withstands extremes of heat and cold, dryness and moisture.

Outlasts any pipe except cast iron, and maintains its full flow capacity to the end.

TANKS

For Water—Wine—Vinegar—Oil—Acids—Solutions. For Storage—Mixing—Fermenting—Pickling—Leaching. In all shapes and sizes—500 to 650,000 gallons.

SILOS

For Dairymen—Stockmen—Feeders. Sizes, 25 tons to 300 tons. The STANDARD.

ALL REMCO PRODUCTS are manufactured to your order from CLEAR, AIR-DRIED REDWOOD. Selected from our stock of forty million feet. Their outstanding features are HIGHEST GRADE MATERIAL, SUPERIOR EFFICIENCY, MECHANICAL PERFECTION, MAXIMUM DURABILITY.

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HOPLAND STOCK FARM REGISTERED SHORTHORN BULLS

REGISTERED BERKSHIRES (Boars, Bred Sows and Glts)
HERD BOAR, ROYAL POINTER 2nd, 197092, First Prize
Senior Yearling, P. P. I. E.

3 REGISTERED HOLSTEIN BULLS from High-Testing Cows.
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ABSORBINE STOPS LAMENESS

from a Bone Spavin, Ring Bone, Splint, Curb, Side Bone, or similar trouble and gets horse going sound. It acts mildly but quickly and good results are lasting. Does not blister or remove the hair and horse can be worked. Page 17 in pamphlet with each bottle tells how. \$2.00 a bottle delivered. Horse Book 9 M free.

ABSORBINE, JR., the antiseptic liniment for mankind, reduces Painful Swellings, Enlarged Glands, Wens, Bruises, Varicose Veins; heals Sores. Allays Pain. Will tell you more if you write. \$1 and \$2 a bottle at dealers or delivered. Liberal trial bottle for 10c stamps. W. F. YOUNG, P.D.F., 86 Temple St., Springfield, Mass.



Purebred Registered HOLSTEIN CATTLE

The preliminary report of tests covering the period since 1909, and just published by the Iowa Agricultural Experiment Station, states that the average of records made by first generation heifers by a purebred Holstein sire, shows an increase of 71 per cent milk and 42 per cent fat, at an average age of 3½ years, over the record of their scrub dams at an average age of 6 years. These dependable reports show very plainly that the introduction of a purebred Holstein bull to a herd of common cows will materially increase production and profits. There's big money in the big "Black and White" Holsteins.

Send for FREE Illustrated Descriptive Booklets. The Holstein-Friesian Association of America.

F. L. Houghton, Sec'y.
Box 230, Brattleboro, Vt.



BLACK LEG LOSSES SURELY PREVENTED

by CUTTER'S BLACKLEG PILLS
Low-priced, fresh, reliable, preferred by western stockmen, because they protect where other vaccines fail.
Write for booklet and testimonials.
10-dose pkg. Blackleg Pills, \$1.00
50-dose pkg. Blackleg Pills, \$4.00
Use any injector, but Cutter's simplest and strongest. The superiority of Cutter products is due to over 15 years of specializing in VACCINES AND SERUMS ONLY. INSIST ON CUTTER'S. If unobtainable, order direct.
The Cutter Laboratory, Berkeley, California

Durocs For Sale

OPEN AND BRED GILTS
BOARS.

Breeding and Individuality
Right

Tagus Ranch

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TULARE, CAL., via TAGUS.

POLAND CHINAS

We have 20 head of good gilts and 3 two-year-old sows for sale. Either sired by or bred to I. B. A. Wonder, Reserve Champion at the P. P. I. E. Also a few extra good young boars ready for service sired by I. B. A. Wonder.
Also a fine lot of Fall pigs.

We please you or refund your money.

W.A. YOUNG, Lodi, Cal.

--FOR SALE--

Registered

DUROC - JERSEY BOARS

Deep Red. Big Bone.

Stout Build. Big Type.

April Boars now ready for service.

Ormondale Co.

R. F. D. 1,

REDWOOD CITY, CALIF.

Live Stock and Dairy Notes.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

DAIRYING AND DAIRYMEN.

Ralph Newman of Elk Grove, whose dairy has for a month been putting out certified milk, has recently returned from Fresno where he went to buy a purebred Holstein bull.

All the herds of cattle in the vicinity of Bodega are to be entered in a competition that is to be held under the auspices of the Bodega Cow Testing Association, a new association.

A. Niboli of Surf is milking 18 head of dairy stock, feeding 200 head of beef stock, and has over 100 acres of small white beans. He and two hired men do all the work except at threshing time.

Impressed with the quality of Kings Co.'s Holstein-Friesian cattle, Prof. A. L. Westover of the San Luis Obispo Polytechnic School selected a carload of fine young milk cows of the Holstein breed for two cattle buyers of his county.

The Le Baron Estate of Valley Ford, Sonoma county, has just purchased a carload of advanced registry Ayrshire cows in Wisconsin to add to their foundation herd of registered Ayrshires. They will start to do official testing shortly.

Creamcup Vogelschen Cornucopia, owned by K. W. Abbott, Moorland Farm, Milpitas, the oldest daughter of his herd bull Colantha Sir Pontiac Aaggie, has just made a 7-day record as a junior four-year-old of 28.005 lbs. butter from 529.6 lbs. milk.

Mr. D. H. Bitner, representing the Greeley Ranch of Bakersfield, has just purchased a two-year-old bull from Mr. A. A. Jenkins of Tulare. This bull is by Mr. Jenkins' herd bull, Gerties' Lad, and has been a consistent prize winner at the many county fairs this fall.

Dr. Chas. Keane, State Veterinarian, warns dairymen to beware of fake inspectors representing themselves to be operating under the provisions of the new milk law which became effective Oct. 1. Dairymen should require all persons claiming authority to show proper credentials. A number of impostors are at work throughout the State administering the tuberculin cure.

Relative to a news item appearing in these columns in the issue of Oct. 21, N. H. Locke writes: "Empress Lass made 11,314.4 pounds milk, 603.17 pounds fat, in 281 days, not 603.17 pounds butter. The Holstein breeder would figure one-fifth more butter or 723.8 pounds butter. She gave 34 pounds fat for last monthly test, and is due to freshen in ten days, having carried a calf during most of the test period, run in pasture day and night, and milked twice a day."

The Rural Press has received copies of the second edition of the De Laval Dairy Handbook, which is filled with good, practical information and advice to cow-owners from cover to cover. The book evidences care in its preparation; and while the various phases of dairying are discussed by the best and highest authorities, the book is not technical, but is written in plain, understandable language. The De Laval Separator Co., 165 Broadway, New York City, states that it will be glad to send this handbook free to any of our readers who write for it.

The following is the score of the recent test in the Gridley Cow Testing Association: Beauty, Holstein, owned by S. A. Mealey of Gridley—pounds of milk, 1814; per cent of fat, 3.8; pounds butterfat, 68.9. Gladys, Shorthorn, owned by C. Goetz, Tudor—1150; 4.9; 56.4. Darkey, Holstein, D. Beale, Gridley—1181; 3.8; 53.1. Maud, Holstein, J. H. Guill, Chico—1376; 3.8; 52.3. Sadie, Holstein, L. Kaiser, Biggs—

1395; 3.5; 48.8. Rone, Shorthorn, M. Shibig, Meridian—942; 5.0; 47.1. Gladys, Holstein, D. Beale, Gridley—1246; 3.7; 46.1. Brandal, Jersey, M. Shibig, Meridian—939; 4.9; 46.

BEEF CATTLE.

Vincent Brothers near Porterville have shipped two thoroughbred Hereford bulls to Waldon Lewis, near Madera, recently. The younger bull brought \$175.

A shipment of 650 range cattle was received in Visalia this week by Frank Brundage for the Brundage & Crowley Cross Creek Ranch, where they will be fattened for the market.

Several special freight trains unloaded 53 cars of Nevada cattle at the Newman stockyards Thursday, coming to California to escape the snow and cold of the ranges in that State.

The Rural Press is advised that Henry M. Elberg has leased the T. B. Gibson interests in the Rose Lawn Stock Farm estate, near Woodland, and taken over all the livestock. Mr. Elberg is the son-in-law of the late T. B. Gibson, and will continue the business, specializing on Shorthorns.

The Central Stockmen's Association held a most successful meeting at Coalinga, Nov. 4. The counties represented were San Luis Obispo, Monterey, Santa Barbara, Kern, Fresno, Tulare, and Kings. The meeting met in the interest of good road construction and to formulate a bill to be introduced into the next Legislature providing that all notes secured by chattel mortgages shall become negotiable instruments.

Other important business was transacted and a good time had.

SWINE.

John P. Walker of Visalia has ordered from the East an entire new strain of the finest pure-blood Duroc-Jersey hogs which he is importing to his ranch near Visalia for breeding and showing purposes. Mr. Walker is among the several new ranchers of the community who believe in having only the finest bred stock.

Donald H. Graham, Lancaster, writing under date Nov. 4 to one of our staff, says: "It may interest you to know that those purebred Duroc gilts of mine which you saw here during the summer have farrowed. Of the nine, in the picture I sent you, we are very proud and happy. None of them farrowed less than 7 pigs; they went as high as 12, with an average of 9 2-9. We lost all of one litter of 9 so that our average raised is but 6 8-9. We lost some in nearly every litter, but the average raised is not bad for gilts. A gilt I got from Elmer Lamb farrowed 10, the second litter."

SHEEP AND GOATS.

Kaupke Bros., Hampshire breeders of Yolo county, report the sale of a foundation flock of ewes to Dr. E. E. Brownell of San Francisco, who will run them on his ranch near Woodland.

A nation-wide alliance of sheep producers, wool manufacturers, railroads, mutton handlers, etc., is to be proposed at a big meeting in Chicago during the International Livestock Exposition Dec. 2-9.

It is reported from Redlands that Winthrop Howland of the Rancho el Chivar is making a cream cheese from goat's milk that is as good, according to the formula of the famous Neufchatel cheese that is imported from France.

The Frank Mecham Estate at Petaluma has recently shipped a carload of Merino ewes and rams to N. E. Curtiss of Lone Pine and a carload of Red Polled heifers to Wm. Rust of Ukiah. They have also recently received an order from Central

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2 1/2 c per word.

SWINE.

Poland Chinas.

SMITH'S POLAND-CHINAS—Sows and gilts bred to Joker, First Prize Boar at the Wisconsin State Fair, 1915. These sows and gilts, sired by Iowa Wonder, who is a son of A. J. Ceder, the most celebrated Poland-China boar, living or dead. Litters from this mating are the best I have ever seen anywhere. Prices low quality considered. Will sell one or a carload. As a special inducement each purchaser will be given a year's subscription to the American Swineherd, the best swine paper published and a copy of the Handbook on the Sow; also a copy of the Pig Feeders' Manual. Geo. A. Smith, Corcoran, Cal.

MAKE BIG MONEY with our big-type Poland-Chinas. Smooth, easy feeders that make greatest weight in shortest time at lowest cost, topping the market at 225 lbs. in 6 months. 300 head, both sexes, all ages, reasonable prices. Some fine bred sows and gilts, and top quality young boars. Best Eastern blood lines. Satisfaction guaranteed. Ranch in Tulare county, but address owner, E. H. Whitten, Route 5, Box 647, Los Angeles.

GRAND CHAMPION SUPERBA POLANDS—A few choice spring Superba boars ready for service. Sows bred to Superba for fall litters. Prices reasonably low. Rough's Greenfields, Arlington Station, Riverside, Cal.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated, purchaser to return crates. E. A. Hall, Watsonville, Cal.

REGISTERED POLAND-CHINAS—Prolific, pabulous, profitable porkers. Choice boars now ready for service, \$25 each. Weanlings, \$15. Dr. J. A. Crawshaw, Hanford, Cal.

LAKEVIEW STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Linn, Linview, Route A, Modesto, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trewitt, Box 82A, Hanford, Cal.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

POLAND CHINA HOGS FOR SALE—Registration papers furnished free. C. A. Cooley, Durham, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 27A, Davis, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

REAOAKS RANCH herd of registered Poland-Chinas. W. J. Hanna, Gilroy.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow, Wines Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for Fall pigs. A. B. Humphrey, Ecalon, San Joaquin Co., Cal.

ABOUT BERKSHIRES—You know Frost? He publishes the "Berkshire World." He says of one of our herd boars—Mayhem Leader 6th—"A grand hog—one of the very best to be found in America. This boar is a son of the World's Fair Grand Champion Grand Leader 2nd, owned by the great breeder, A. B. Humphrey." We shall be pleased to book a few orders for the get of this splendid boar out of some of our leading sows. Write to Butte City Ranch, Home of Good Berkshires, Box P, Butte City, Cal.

WINONA BERKSHIRES—Won at the 1916 California State Fair and W. A. B. O. eighteen prizes, with four firsts and two championships. F. B. Steel, Winona Ranch, Route 1, A-Box 105, Grant's Pass, Ore.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

CHOICE REGISTERED BERKSHIRES—Line bred Rival's Champion's Best and Masterpiece pigs, \$15 each, trio \$40. Service boars, bred sows, and gilts at reasonable prices. W. H. Waugh, Riverside, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Bunch, Santa Rosa, Cal.

BARGAINS IN BERKSHIRES—Write today for our Special List of high-class boars and open gilts. Both the offerings and prices will please you. Silver Birch Farms, Box P. P., Newport, Wash.

SPECIAL—Six good service boars and a few sows in pig to Premier Leader due to farrow in October. Geo. M. York & Son, Berkshire breeders, Modesto, Cal.

REGISTERED BERKSHIRES—For sale bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Napa, Cal.

REGISTERED BERKSHIRES of prize-winning blood. Write for description and photos. Imperial Stock Farm, Morgan Hill, Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Perris, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

BERKSHIRES—Carruthers Farms, Mayfield, Cal. Second annual sale, August 2, 1917.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Weanling pigs, \$10 each. G. A. Casey, R. 7, San Jose.

FOR SALE—Thoroughbred Berkshire Boar. One year old. J. W. Noble, Livermore, Cal.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

CHAS. GOODMAN—Breeder of high-class Berkshire Swine. Williams, Cal.

Duroc-Jerseys.

DUROC JERSEYS—My hogs won highest honors at State Fair, taking first prize herd, first prize sow, second prize boar. Were the largest of their age exhibited. Block all ages for sale. Prices reasonable. Breeding and satisfaction guaranteed. Haden Smith, Route 1, Box 84D, Woodland.

DUROCS from River Bend Farm, St. Helena, Cal., are large type, smooth, rangy, with fine backs and deep cherry color. We sell only those we'd like to keep in our herd. Don't write us if you want cheap stock.

RANCHO RUBIUS DUROCS—A few choice gilts bred for October farrowing; also good service boars, tried sow and weaned pigs, priced right. Elmer Lamb, Ceres, Cal.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

DUROC JERSEYS—Herd boars. E. N.'s Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. F. Walker, Visalia.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs \$10. H. R. Bondier & Son, Napa.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class pure-bred hogs, both sexes, any age.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROCS—All ages. Either sex. W. A. Pack, Hollister, Cal.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

REGISTERED DUROC JERSEY SWINE—Frederick M. Johnson, Napa, Cal.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

Other Breeds.

BILLIKEN HERD OF IMPROVED CHESTER—Prize winners at the State Fair. The Farmer's Utility breed. Size combined with quality; producers of big uniform litters of growthy pigs. 15 bred gilts due to farrow in Jan. Boars and sows of spring farrow; first class and extra well developed; best blood lines obtainable; prices reasonable and every one cholera immune. Write for special prices and circulars. C. B. Cunningham Mills, Cal.

LARGE YORKSHIRE SWINE—Gilts to farrow in September and October. Service boars and Spring pigs. Both sexes. Riverina Farms, Paradise Road, Modesto, Cal.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

REGISTERED IMPROVED CHESTER Whites—Grizzly Bear Ranch, East Auburn, Cal.

DAIRY CATTLE.

Holsteins.

FOR SALE—A carload of very fine registered Holstein heifers. They are sired by bulls of great producing ancestry and from dams of splendid type and large production. Some are bred to Prince Juliana Walker, a First Prize son of Prince Gelsche Walker. Several will be old enough to breed next month. Some are calves. This is a great opportunity for some one who would like to start with a small capital as they will be priced low for a quick sale. I have an extra well-bred Komdyke bull to go with them whose granddam was a former World's Record cow. Write for full information or better come and see them at once if you are looking for a real bargain. Sold subject to tuberculin test. Geo. A. Smith, Corcoran, Cal.

REGISTERED HOLSTEINS—Grandsons of Pieterie Maid Ormsby. World's record 35.56 lbs. when made. Average test 5.51. Also related to Duchess Skylark Ormsby, present world's record of any age or breed, 1508.36 lbs. butter in a year. George Koulas, Modesto, Cal.

REGISTERED HOLSTEIN BULL CALVES—Sired by Lorna Komdyke Alcarra, whose dam made 29.75 pounds butter fat in seven days as a four-year-old. J. M. Campbell, Ecalon, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segia and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

REGISTERED BULLS by King Komdyke (Pontiac and out of A. R. O. cows. A splendid selection old enough for service. Write or call. J. H. Harlan, Woodland, Cal.

TULARE GUERNSEY AND HOLSTEIN Farm is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Hixon, Tulare, Cal.

A NICE YOUNG SON from El Prado Wayne Colantha and from a 24 2/2 lb. dam. J. W. Benoit, Breeder of Registered Holsteins, Route O, Modesto, Cal.

THE McCLLOUD RIVER LUMBER CO., McCloud, Cal.—Highclass thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

WANTED—High-Grade Holstein Milk Cows. Interested in nothing but the best. Address Box 340, Pacific Rural Press.

THE HENDERSON CO.—Breeders and importers. Registered Holsteins. Sacramento Bank Bldg., Sacramento.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chino, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons, Corp., Importers and Breeders. Woodland, Cal.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O dams. B. F. Anderson, Modesto, Cal.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Calif.

Jerseys.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3 lbs. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

VENADERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly record. Guy H. Miller, Route 1, Modesto, Cal.

JERSEY BULLS—Serviceable age. Sons of Gerie's Lad, who has two daughters that made over 600 lbs. butter as two-year-olds. A. A. Jenkins, Tulare.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

YOUNG REGISTERED JERSEY BULL CALVES at reasonable prices. O. J. Ames, Oakdale.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

Other Breeds.

GUERNSEY BULL CALVES from Grand Champion Bull. Also Hampshire Swine, both sexes from Grand Champion 700-lb. boar and Grand and Junior Champion Sow. Bella Vista Herd, J. W. Henderson, 1st National Bank Bldg., Berkeley, Cal.

EDGEMOOR FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farm, Santee, Cal.

BREEDERS OF REGISTERED SHORT-HORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Rambouillet and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

KATPKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshire.

CHAS. KIMBLE—Breeder and Importer of Rambouillets. Hanford, Cal.

HORSES AND MULES.

STOCKTON PERCHERONS again winners at Sacramento. Get next brother farmer. H. G. Learned, Producer Stockton.

REGISTERED SHIRES—Black Hawk Stock Farm. Importers and Breeders. Easton & Ward, Promoters Burlingame Cal.

FOR SALE—Registered Percheron Stallion. Address E. I. P. Horse Ass'n, R. 5, Box 32, San Jose.

MISCELLANEOUS.

SAN FRANCISCO LIVE-STOCK EXPORT CO., Eugene R. Croley, Manager, solicits foreign orders for purebred registered and merit breeding animals and fowls. California has great diversity of climatic and other conditions that enable us to select animals that have been raised under conditions similar to those of the location for which they are intended. We should be informed regarding these conditions and be allowed ample time to make selections. Nearly all disappointments in buying afar are the result of insufficient information as to conditions or to lack of time for proper selection. Our plan and terms for "raising animals to order" to fit into peculiar foreign conditions is worth investigating. References: Dun or Broadway, or San Francisco banks. Office 219 Underwood Building 625 Market St. San Francisco.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co., Inc., 531-537 Brannan St., San Francisco.

FOR SALE—Dairy Shorthorn Bulls. Also Alfalfa Meal. I. T. Grounds, Route K, Box 321, Fresno, Cal.

D. O. LIVELY, 216 Hobart Building, San Francisco, buys and sells livestock—any kind—any quantity.

America for two Red Polled heifers and a bull.

UNIVERSITY TO SHOW FAT STOCK AT INTERNATIONAL.

We are advised by Prof. Gordon H. True that the University of California will make an exhibit of fat steers at the International Livestock Exposition to be held at Chicago, December 2 to 9 inclusive.

Writing of their exhibit Prof. True says, "The two steers to be exhibited are a cross-bred Hereford-Shorthorn calf just past one year old, showing at a weight of something over 1100 pounds, and a two-year-old Aberdeen-Angus steer that was grand champion at the P. P. I. E. as a yearling last year. While this steer is better than he was a year ago and was counted at that time an exceedingly good one by Eastern judges he was defeated at the California State Fair by the calf referred to above, so I feel that we are going to be in a position to make a very creditable showing for our State."

Prof. True also states that he is endeavoring to get up a party of livestock breeders in California to attend the International this year, a number having already spoken enthusiastically of the plan to him. If a sufficient number seem interested, he has volunteered his services in making arrangements for the trip. It will be necessary to leave San Francisco not later than Thanksgiving Day in order to arrive in Chicago before judging is started.

AVOIDS ALFALFA BLOAT.

(Written for Pacific Rural Press.)

Although pasturing dairy cows on alfalfa has been considered poor policy owing to the loss by bloat, the waste of feed, and injury to the alfalfa, many dairymen believe that if moderation is used in pasturing, it is more economical than cutting and feeding it green. Among these is George Farmer of Kings county. Mr. Farmer has pastured for years and says he hasn't had a case of bloat for ten years, although his cows are on alfalfa pasture for a time every day.

It is heavy feeding of green alfalfa that causes bloat. According to Mr. Farmer, if you turn cows into a field where the growth is rank and when the cows are exceedingly hungry, you are sure to have bloat. In such cases he fills them up with dry hay or Bermuda grass before turning into the alfalfa. In either case the cattle do not eat so ravenously and as a consequence do not bloat.

DUROCS AND GUERNSEY BULL CALVES dits bred to 900-lb. boar. Ed. E. Johnson, Chico, Cal.

BEEF CATTLE.

SCOTCH AND SCOTCH-TOPPED SHORTHORNS—We have the largest herd of straight Scotch cows in California. Foundation stock of both sexes for sale; also a choice lot of range bulls. Barco Ranch, Hollister, Cal.

FAIR OAKS RANCH Willits, Cal.—Young registered Shorthorn bulls for sale. Sired by Landseer 379318, grandson of Imported Villager 295884.

REGISTERED AND UNREGISTERED SHORTHORN BULLS and Percheron Horses for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

CROLEY'S CALF FEED with skim milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords. Newman, Cal.

REGISTERED HEREFORDS—H. H. Gable Diamond G Ranch, Eureka, Cal.

GEORGE WATTESON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

DOGS.

THOROUGHbred SCOTCH COLLIES—All bred from our noted prize-winners. Have a few 3 months old puppies—very choice. Write us what you want. Browndale Kennels, Redwood City, Cal.

Rhoades & Rhoades

Expert Live Stock Auctioneers

Purebred Stock Sales a Specialty

Sales Conducted in all parts of Calif.

Ben. A. Rhoades, Auctioneer.

1501-3-5 So. Main St., Los Angeles, Cal.

Drying Beet Pulp.

(Written for Pacific Rural Press.)

With the extensive use to which dried beet pulp is being put among livestock feeders, it may be interesting to our readers to describe the drying process at the American Beet Sugar Company's Oxnard plant where 3600 sacks of the dried product are turned out daily during the beet harvesting season.

Before reaching the pulp factory the beets have been sliced and run through various vats of water where practically all of the sugar is extracted by continuous washing.

The wet pulp is pumped with water to the drying plant where it flows into a heavy steel screened vat, the water passing through the holes in the screen and the pulp being conveyed to large cylindrical hydraulic presses.

These presses reduce the moisture content as much as possible by pressure alone, also breaking the long slices into much shorter ones.

Conveyed from these presses automatically, the pulp is then carried to immense hot-air drums, so equipped inside that two hours are required for the pulp to pass through them, which is also automatically performed. The hot air passing through this drum is kept at a temperature of 190 degrees, taking out

all but about 10 per cent of the moisture in the pulp.

From the outlet of the drum conveyors again take the pulp, now thoroughly dried, to automatic scales and sackers where it is packed in large burlap sacks, then being ready for immediate shipment or storage in the warehouse.

Some idea of the amount of wet pulp handled daily may be gained by the fact that a ton of wet pulp is required for each sack of the dried product.

No Pit

is required with the

KROGH
DEEP
WELL
TURBINE
PUMPS



For bored or drilled wells from 10-inch inside diameter up; and for capacities of 250 gallons per minute up to 3000 gallons per minute. Built for pumping from any depth to and including 250 feet. They are absolutely water balanced and are self-aligning. More water can be obtained from such wells than with any other type. Built in belted or direct motor driven types. If interested, write for Bulletin.

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911 Crocker Bldg., S. F.
Circular containing 100 mechanical movements mailed free.

Raise Your Calves on Blatchford's Calf Meal and Sell the Milk

More calves have been raised on Blatchford's Calf Meal than on all other milk substitutes combined.

100 lbs. makes 100 gallons of milk substitute, costing only one-third as much as milk. Prevents scouring and insures the early maturity of sleek, handsome calves.

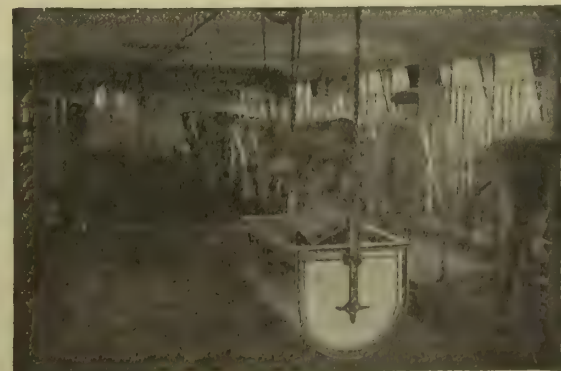
It is steam-cooked and no trouble to prepare or use.

Write for Pamphlet "How to Raise Calves Cheaply and Successfully with Little or No Milk." At dealers, or Coulson Poultry & Stock Food Co., Inc., Petaluma, Cal.

SPECIAL SALE LIST OF HIGH-CLASS BERKSHIRES.

Mature boars, Fall boars, Spring boars, some choice open Spring gilts, Weanling pigs, are all listed, described and priced in our new list just off the press. Write for it today. Some great bargains in high class stock from the West's greatest Berkshire breeding establishment.

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CARRIERS—STALLS—STANCHIONS—HAY TOOLS.

Catalogs and Barn Plan Book on Request.

CALIFORNIA HYDRAULIC ENGINEERING & SUPPLY CO.

68 FREMONT ST., SAN FRANCISCO.

424 EAST THIRD ST., LOS ANGELES.

The Complex Problem of Marketing Hogs

(Continued from 1st page.)

Unless a hog has been fed some grain continuously rather than spasmodically or for a few weeks before marketing, he is certain to dress out a low percentage; and each point lost by dressing out virtually means a pound of pork paid for that cannot be sold.

Tubercular hogs also cause a loss of some three per cent to the packers because of the practice of feeding raw milk from tubercular cows to the hogs. This three per cent loss is prorated back over all the hogs purchased by the packer, the good hogs standing their share of the loss and the producer's price being cut accordingly.

Possible Solutions. — That the problem is a complicated one, all must admit. Theoretically at least all three factions should be interested in seeing more hogs in California—the farmer because it means economical manufacture of cheap products into a finished form on the ranch; the buyer because more hogs mean larger business; and the packer more hogs because it means expansion of his business and cutting down of overhead expense.

Producers now in the hog business in California, but having previous experience in the Middle West, advise us that our marketing system is wrong and that with a centralized or union stock yard market the situation would immediately right itself. They say that on such a market a hog is sold on his merits and that the shrinkage in shipping, now charged up to the producer, is almost completely offset by a heavy fill of feed and water before weighing out to the buyer in the stock yards. A few shipments of soft or undersized hogs with a consequent difference in price between them and the hard 200-pound animal would, they contend, do more toward educating the producer to breed and feed right than any other one thing.

Lacking the facilities for such

marketing D. O. Lively recommended the organization of co-operative shipping associations among producers at the Hanford meeting.

These associations would be composed of hog raisers who would hire a competent man to assemble and market their hogs, doing the work now done by the local buyer to a certain extent; but going still further and following such shipments through the packing house, thus ascertaining what each lot of hogs in the shipment dressed out and paying the individual members for their hogs according to this dressing percentage. In this manner any and all losses through improper breeding, feeding, tuberculosis, piggy sows, etc., would revert back to the responsible party and not be prorated over the entire membership.

Both farmers and packers who were present at the meeting and who have been interviewed since, favor this idea—the former on the grounds that it will improve the price of good hogs and thereby insure a margin of profit on the well-bred, grain-fed hog. The packers present favored it because they believe it will give them organized bodies of men to deal with, rather than individuals as at present, and will result in a better understanding of the fundamental troubles of the industry.

From the writer's knowledge of the situation it seems certain to him that some radical change must come, and from the experience of other agricultural producers in California it would seem that even though the local shipping associations might not totally solve the problem they would at least be in a better position to lay bare the true facts of the case than growers are in their present unorganized condition. There are already several hundred such associations in the United States, and California could readily support a large number of them at this time.

Breeds Large, Heavy-Producing Cows.

(Written for Pacific Rural Press.)

C. G. McFarland of Tulare county has some very decided views about the breeding of Jersey cattle. Chief among these, is the necessity of breeding a big vigorous animal, capable of producing heavily at the milk pail under normal, rather than abnormal conditions, as is so often the case nowadays in the race for high-record cows.

Taken as a whole, Mr. McFarland's herd of 27 cows averages around 500 pounds of butter per year. These are official records, for he is a firm believer in official work with purebred dairy cattle.

It has taken a good many years to accomplish this remarkable average, and no single factor can be pointed out as more important than any other, unless it be the continual endeavor he has exercised to breed away from trim little Jersey show type and into a commercial dairy type.

Feeding has undoubtedly been an influencing factor, for while home-grown feeds such as alfalfa and corn silage have constituted most of the

ration, they have been fed liberally. The calves have also been well cared for, and everything done to develop them into large cows. Early breeding has never been practiced. In fact, Mr. McFarland prefers to have his heifers freshen with their first calves when about 27 months old, by which time they have had a chance to secure the major part of their growth.

And this careful rearing of the heifers is indicated in the older cows, an illustration being the cow Philadelphia's Glory Gertie which made a record of 592 pounds butter when 13 years old; and Philadelphia's Glory Zella which made 680 pounds of butter when 12 years old and 631 pounds the year before. These records, as well as all others made by Mr. McFarland, are accomplished with two milkings a day, which adds considerably to their significance.

The Bodega Cow Testing Ass'n resumed operations in October with 1092 cows entered.

When you buy Prince Albert you are getting quality!

Quick as that P. A. flavor strikes-in, you'll realize you've received all you paid for in *tobacco quality*—not coupons or premiums! State or national restrictions on coupons or premiums can in no way affect Prince Albert's sale. Quality has been the only inducement Prince Albert has ever offered smokers!

You've heard many an earful about the Prince Albert patented process that *cuts out* bite and parch and lets you smoke your fill without a come-back! *It proves out every hour of the day!*

PRINCE ALBERT

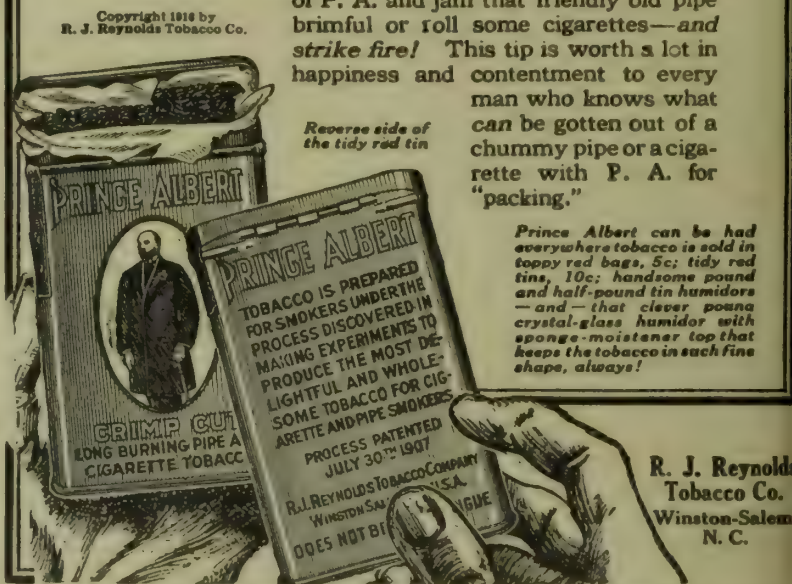
the national joy smoke

will open the doors wide for you to come in on a good time with a jimmy pipe or makin's cigarettes. You'll think the smoke-lid is off for fair, firing up as the smoke-spirit strikes you—without a regret!

All that delight can be yours soon as you lay in a stock of P. A. and jam that friendly old pipe brimful or roll some cigarettes—and *strike fire!* This tip is worth a lot in happiness and contentment to every man who knows what

can be gotten out of a chummy pipe or a cigarette with P. A. for "packing."

Prince Albert can be had everywhere tobacco is sold in tippy red bags, 5c; tidy red tins, 10c; handsome pound and half-pound tin humidor — and — that clever pouce crystal-glass humidor with sponge-moistener top that keeps the tobacco in such fine shape, always!



R. J. Reynolds Tobacco Co.
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Keep your harness alive

Unless harness is oiled occasionally it becomes stiff and dead—the sign of rot and weakness. The elements have attacked the fibre through the thousands of open pores in the leather.

EUREKA Harness Oil

fills the leather pores with preservative oils—keeps out dirt, sweat, moisture—keeps your harness black, strong and pliable. Ask your dealer today.

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WHEN USED ON YOUR

HYDRATED OR GROUND ROCK

IN HIGHER

BETTER CROPS

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TAMWORTH'S

(The Bacon Hog)
Largest Herd in the State
DUROC - JERSEYS
Mature Stock and Weanlings of both sexes. Sure to please.
SWINELAND FARM,
W. O. Pearson, Prop. Woodland, Cal.

Veterinary Queries and Answers.

[Answered by Dr. H. B. Wintringham, Petaluma, Cal.]

[Subscribers wishing an immediate reply should send money order for \$1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

DRYING MILK-COWS.

To the Editor: What is the best way to dry up milk-cows without injury to them?—F. A. R., Turlock.

[Gradually decrease the amount of milk taken at each milking.]

PIGS' FACES SCABBY.

To the Editor: Pigs one to six weeks old have a disease in which scabs or cracks form on the ears, nose, and around the eyes, and also on the tail, which finally drops off.—J. D. P., Biggs.

[Smear the affected parts with iodine ointment U. S. P., once a day.]

COW'S EYES WATER.

To the Editor: My cow's eye has been running for the last month. At the corner there is yellow matter and the eye is highly inflamed but not swollen.—B. M. B., Sonoma.

[Place a few drops of a 25 per cent solution argyrol in the eye three times a day.]

SHEEP COUGH AND DIE.

To the Editor: Lambs about 10 months old appear droopy; froth runs from the nose and mouth. Short hacking cough. There is a rattling sound in the throat or chest when the animal breathes. These symptoms usually increase until the animal dies in 12 to 36 hours. Every animal of mine which has been so affected has died. Every one had been in thrifty condition. The trouble always appears in the fall. Have recently changed the band to fresh pasture, but two have died. No dangerous weeds.—D. L. L., Atwater.

[This looks like verminous bronchitis. It would be advisable to call in the State Veterinarian's office.]

COW BLOATS EVERY DAY.

To the Editor: A cow bloats every day on all kinds of feed.—S. B. O., Fresno.

[This is chronic indigestion. Give one dram of each of the following twice a day: Fluid extract nuxvomica; fluid extract gentian; and fluid extract cascara.]

DOG HAS INTERMITTENT ITCH.

To the Editor: Our collie dog has a skin disease. For several years a spot on his back near the tail has occasionally itched so he would scratch a great raw place. An emulsion of olive oil and sulphur makes the trouble subside, and the hair comes back. He has fleas, lots of them, and of late he scratches all over. We feed him cooked scrap meat with bread and vegetables.—G. W. B., Highland.

[Bathe this dog once every eight days in hot lime-sulphur dip, scrubbing the solution in well. Withhold all meat from his diet and give Fowler's solution in 5-drop doses twice each day.]

UTERUS CLOSED.

To the Editor: Several cows come in heat rather irregularly, sometimes miss one or two periods, and they do not catch. I find the neck of the uterus closed too small to admit the small finger. It does not yield to any method of dilation that I use. I have never had any abortion.—W. W. C., Ontario.

[These cows have nymphomania. Call in your veterinarian and have him break down any cysts he may find in their ovaries per rectum or per vagina.]

GOAT FOOT ROT.

To the Editor: I am having some trouble each winter with foot rot in my band of 300 Angora goats. One of them has been in bad shape all summer and with the first rain this fall several began to limp. I have a 14-foot trough and intend to drive the band through it daily with a saturated solution of bluestone deep enough to cover the roofs. Would it be good to spread refuse burnt lime from an old lime kiln, in the shed?—M. W., Cool.

[It will be better to use a 2 per cent solution liquor cresolis compositis and hold them in this long enough to soak into all the cracks and crevices. Lime spread in their quarters will be very beneficial.]

Blackleg Keeps Out Purebred Stock.

[Written for Pacific Rural Press.]

We know of a beef-raising community along the Coast where there are no purebred beef bulls for fear of blackleg. One man recently commissioned a stock buyer to get 100 grade Hereford bulls in the East for use on his range herds. Despite climatic and feed possibilities worthy of the best stock in the world, and cheap land to run on, scrub stock is raised into inferior beef for inferior prices because when blackleg gets the calves, there is less loss if they are not purebreds.

We know one young man who has not lost a calf out of his small herd, presumably because he vaccinates them twice a year and uses reasonably fresh vaccine. He is now buying a purebred Shorthorn bull, and hopes eventually to have a purebred establishment on his 1100 acres, of which 300 are fine bottom land. He now raises and buys cattle to feed for market, being financed largely by bankers. His own profits on this feeding will go into purebreds, for the blackleg has no terrors for him.

To vaccinate, he corrals the calves, an assistant ropes one at a time and snubs the rope around a post, while the young stockman goes outside the corral to load his "gun." The vaccine pills are laid on a thin layer of clean cottolene in a saucer (vaseline would be just as good and more expensive). Each pill is picked up with the "gun," and held in its cavity by the grease until injected. Without the grease, the pill might easily be lost in whatever commotion is aroused, without his knowing it. Then if the calf should die he would say that vaccine didn't work. Likewise, if he didn't have a way of knowing all the calves are vaccinated, some which evaded it might die and discredit the vaccine.

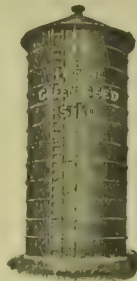
A "squeezer" between two corrals would probably be handier than roping the calves, and would avoid possible failure to place the vaccine right due to the calf's uneasiness. The vaccine costs 10 cents a calf, and 100 calves a day is figured as a small job for two men.

HERE IS YOUR LAST CHANCE to order an IDEAL GREEN FEED SILO

and get it up in time to fill with the last crop of alfalfa, which can be fed out in time to again fill in the spring with the first cutting, which as hay is hardly worth handling, but which makes excellent silage.

YOU CAN THEN FEED SILAGE through the summer and have the silo empty in time to fill with corn next fall.

MANY DAIRYMEN TRIED THIS PLAN last year and saved enough to pay for their silo. You can do as well.



DON'T DELAY, BUT ORDER NOW.
If desired, terms can be arranged.

The Light Running
Acme Feed Cutter and Silo Filler
Built in Seven Sizes.

ALL STEEL
FRAME
LOW FEED
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MALLEABLE
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Independent Control of Blower & Cutter Head Speed.

THE ACME ALFALFA MEAL ATTACHMENT

can be fitted to all sizes of Acme Feed Cutters. This attachment will enable the making of an excellent grade of alfalfa meal from alfalfa hay at a cost not exceeding that for baling.

CUT OUT THE MILL FEED EXPENSE BILL

By feeding Silage and Alfalfa Meal made with an Acme Cutter.

ALPHA ENGINES.

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EVERYTHING FOR THE DAIRY.

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King Lancaster, sired by King Edward, grand champion bull State Fairs, 909-10-11.

Shorthorn Bulls for Sale, sired by such noted bulls as King Lancaster, Knights Perfection, Greenwood Knight and Greenwood King. Nearly all offsprings of the famous King Edward.

These Bulls are conceded to be the best offering ever made from the Hillcrest Stock Farm. For Particulars Apply—

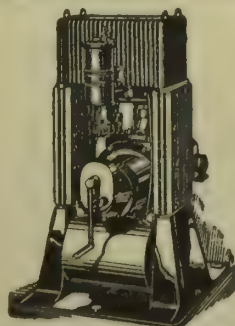
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Most Wonderful Milking Machine Made To-Day

Most durable, most practical, most economical and most sanitary method for milking cows. Big success from the start 8 years ago. Pays 100 per cent on the investment the first year. Great labor saver. Nets more profit for your dairy. Increases the milk yield. Cuts milking time in two. This machine milks like the human hand. Perfect method of suction; suction gradually increases; cows like the soothing action, as there is no strain on teats or udder. The milker has no complicated mechanism; only two moving parts; no vacuum tanks or pipe lines; no metal pipes to freeze or become foul; no vacuum in pail; few wearing parts; easy to keep clean; simple in construction; boy or girl can operate; low cost of upkeep; little power needed to operate. Write for free catalogue which tells the whole story. Address C. F. DANIELS & SON, Prince and Bateman Streets, Berkeley, California.



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LIGHTING SYSTEM

Electricity for Farm Homes

At one-third cost of juice from Power Company (this includes interest on cost of plant). It is the simplest and most economical plant on the market.

No Batteries - No Switchboard - No Rheostat.

Will operate 50 lights 7½ hours for 11c. Will also operate electric fans, irons, small motors, etc.

If your buildings are not wired, send us plans and we will give you full instructions so that you can wire them yourselves. Material furnished at lowest cost.

Karl A. Hedberg
ELECTRICAL ENGINEER.

104 Clay Street,

San Francisco, Cal.

I. T. Grounds of Fresno recently sold to Ed Gilliland of Turlock a fine hairy Shorthorn bull calf.

BLAKE, MOFFITT & TOWNE

Dealers 37 FIRST ST., SAN FRANCISCO
In Blake, Moffitt & Towne, Los Angeles
PAPER Blake, McFall & Co., Portland, Oregon

Raising Poultry for Profit

GETTING MORE OF CONSUMER'S EGG MONEY.

[Written for Pacific Rural Press.]

"Our business—to get the producer more of the consumer's money." Such is the cold-blooded declaration of the Tulare Co-operative Poultry Association, and the beauty of this motto is that they are getting it.

When this association was formed three years ago last May, there were 50 poultry raisers in the vicinity of Tulare who were willing to pay \$25 for a membership in this association whose avowed purpose was to market poultry and eggs and buy feed for its members at cost.

Inexperience in the egg-marketing business was largely responsible for a great deal of grief in those early days. Not only did the business of selling right have to be learned by experience, at the cost of the association, but financial difficulties were also encountered because, with a total capital of but \$1250, part of which had to be expended for equipment, it was difficult to conduct the business profitably to the association and to its members at the same time. This is accounted for by the fact that to cut down the selling cost per dozen of eggs you must do a large enough volume of business to cut down the overhead expense to the minimum, and without working capital in sufficient amount this seemed impossible.

When it became certain that lack of capital was retarding the welfare of the association, money was borrowed, and now, after three years, the debts have been paid off and the association is in a flourishing condition.

Early Conditions.—As to the actual accomplishments of the association it is necessary to relate conditions before the association was started. The egg market then as now for Tulare eggs was Los Angeles, and while it was better than the San Francisco market, it was at best a poor market for eggs from the valley towns.

To quote I. N. Foss, present secretary and manager of the association: "San Joaquin Valley eggs are in a class by themselves . . . it is not a good class, especially in the warm weather. So strong has become the prejudice against 'Valley Eggs' that Los Angeles has established a special low price on the valley's product, and it runs from two to four cents below the case count quotations on the day they arrive."

Tucopa Brand.—But this does not apply to "Tucopa" eggs, the brand under which the association markets its good eggs. It has taken three years for the association to convince dealers and consumers that there is a difference in the quality of valley eggs, but by careful grading and persistent hammering of members to keep their nests and laying houses clean, to swat the rooster and to gather their eggs twice daily, cooling them out promptly and keeping them cool until delivered, they have at last impressed egg buyers with the fact that "Tucopa" eggs are different. As proof of this we quote from a letter received from one of the largest handlers of eggs in Los

Angeles. It says: "Your Tucopa brand still looks very nice, and as long as they continue to be as good as they are now we are going to allow you one and a half cents over the San Joaquin Valley price." In another letter this same firm says: "We are going to allow you one cent over the Los Angeles market, on account of the size and quality being so extra fancy."

With this and other successful selling evidence, it does not require much imagination to answer the question, "How have they competed against the independent buyers?" They have done it, first, by getting more for their eggs, and, secondly, by adding this additional money to the price that they pay for eggs.

Benefits.—How this has worked out is shown by the quotations June 2 in Visalia, where eggs as they ran were 15½ cents. In Tulare they were 18 and 19 cents. On that same date the association was paying 21 and 18 cents. As Manager Foss points out, "It is not much to claim that the higher Tulare prices are due to the association."

The association does nothing but a cash business, 60 days being considered cash. Members are paid once a month, at which time a report is given each member, showing the number of firsts, seconds, and selects he has delivered each month. Non-members are paid cash on delivery, sufficient leeway being figured in such transactions to allow the association some profit.

But while the building of a reputation for Tucopa eggs has been the fundamental reason for success, other savings have also been made. In the matter of selling poultry, for instance, the association has found that San Francisco is a better market than Los Angeles, and for that reason they ship the bulk of that product north. Their feed business has also assumed great importance as members can purchase any feed at wholesale prices, plus the overhead charges of handling.

Save on Shipping.—In his July report of this year Manager Foss points out another of the accomplishments of the association. This is the saving of one thousand dollars during the first six months of the present year on shipping expense.

Formerly all the eggs were shipped by express. Both the rate and the breakage by this system were expensive. Now all the eggs are shipped by freight, in an iced car that leaves every day containing both butter and eggs. The old method cost \$.70 a case, including the return of empty cases, while by the new method the cases are delivered and returned for a trifle less than \$.40 a case and the eggs are delivered in far more satisfactory condition.

With success in marketing has come a larger volume of business, making the overhead and consequently the selling cost less. In fact, eggs are now graded, packed and landed in Los Angeles for three cents a dozen. The progress of the association is ably shown in the total average monthly business done during the three years.

The first year the average was \$4,000 a month, the second year it was \$5,000, and the third year a little over \$5,000. Judging by the present year to date, Manager Foss expects to do about \$7,000 worth of business monthly during 1916.

INCUBATOR-BROODER HOUSE

[Written for Pacific Rural Press.]

Now is none too soon to begin planning equipment for the spring hatches.

A healthful, safe, and convenient incubator and brooder house is that at the Magnolia Poultry Farm of Riverside county. The cement-floored-and-walled basement extends above ground just enough for windows, but not enough to permit any sudden change of temperature. In this are eleven incubators of 540 and 600 eggs capacity and four small ones. A 50-gallon oil tank outside the building for convenience and safety has a pipe to a stand in the basement where lamps are filled and cleaned without taking them outside.

The brooder house is above the incubators. It has a tight floor which prevents whatever dead air might come up from the lamps, but the heat tends to keep it from getting cold. It holds 1400 newly hatched chicks.

Ventilators at or above the floor admit fresh air, while chutes to the peak carry off hot air. The house is opened wide every morning to clean out the night's air quickly. Petaluma and Hunter stoves burn distillate whose flow is regulated automatically by a thermostat. The chickens never crowd when they are

Canadian Wheat

To Feed the World

The war's fearful devastation of European crops has caused an unusual demand for grain from the American Continent. The people of the world must be fed and there is an unusual demand for Canadian wheat. Canada's invitation to every industrious American is therefore especially attractive. She wants farmers to make money and happy, prosperous homes for themselves while helping her to raise immense wheat crops.

You can get a Homestead of 160 acres FREE and

Other lands can be bought at remarkably low prices. Think of the money you can make with wheat at its present high prices, where for some time it is liable to continue. During many years Canadian wheat fields have averaged 20 bushels to the acre—many yields as high as 40 bushels to the acre. Wonderful crops also of Oats, Barley and Flax. Mixed farming is fully as profitable an industry as grain raising. The excellent grasses full of nutrition are the only food required either for beef or dairy purposes. Good schools, markets convenient, climate excellent. Military service is not compulsory in Canada, but there is an extra demand for farm labor to replace the many young men who have volunteered for the war. The Government this year is urging farmers to put extra acreage into grain. Write for literature and particulars as to reduced railway rates to Superintendent Immigration, Ottawa, Canada, or

GILBERT ROCHE,
Canadian Government Exhibit,
San Diego, Cal.
Canadian Government Agent

160 ACRES
FARMS IN
WESTERN
CANADA
FREE



**KILLEFER
QUALITY**

Clean Cut Weeder and Mulcher



**KILLEFER
EFFICIENCY**

It is just what the name implies. It is the most effective tool for keeping down the growth of weeds after rains or irrigation on orchard, bean, beet, or grain land. It does twice the work with the same team of any other tool for this purpose, and as the knives overlap each other it is impossible to miss anything in their course. Our patented knives are formed with a straight throat so that they wear uniformly from heel to point and are all stamped with our quality trade-mark.

The orchardist will find this tool a valuable one for leveling down furrows and for preparing the ground for the cultivator. The large range of work makes it almost indispensable, and the extremely low price at which it is sold brings it within the reach of all.

KILLEFER MANUFACTURING COMPANY

2209-21 Santa Fe Avenue.

Los Angeles, Cal.

warm enough.

Roosts are of three different heights, the bigger chickens taking the highest. There are plenty of them, so that none of the chickens are crowded off onto the floor. Lots of people do not get their roosts low enough and the chicks do not learn to roost soon enough.

On the same floor is the feed room which will hold a large supply and avoids the necessity of running out in wet or cold weather for each feed.

Chicks run in a shaded yard when weather is good. In this is dry mash in troughs each with a strip nailed lengthwise above its center to prevent chicks getting in with their feet. Fresh water drips continually into a trough except when shut off automatically when full.

At about six weeks old, the chicks are taken from the brooder house into open-front tight-sided houses where they are kept until selections are made for trap nesting.

POULTRY QUERIES.

(Answered by Susan Swaysgood, Pomona.)

Brown Ticks.—What should I do for brown ticks that bury themselves in the chicken's body?—M. T.

The best way is to try to clean them out of the building, for that is where they are. Spray with black distillate and crude carbolic, one pint of the latter to a gallon of the oil, and get well into the cracks. You will have to do it more than once though, and the best time is early in the morning. Then mix one part turpentine, one part olive oil, and one part coal oil. Dip a piece of soft cloth in this mixture and just touch where the tick is buried. That will bring his head out, and as a preventive, I would rub vaseline very lightly on the skin, keeping it off the feathers as well as possible.

More Chicken Pox.—My hens and pullets have had the chicken pox and are nearly cured of it, but I notice their corn does not digest properly, feed curd, lots of greens, Egyptian corn and a good feed of dry bread soaked in sour milk about twice a week with Lambert's poultry tonic. Pullets are laying well but hens are molting. What is it they do not get and what is the reason of corn passing whole? They have shells and a big load of sand to pick from.—Mrs. J. J. Z.

The hens have indigestion, probably from being run down with the pox and molt combined. While your feed is good, it does not contain enough mineral matter. Get them some good sharp grit. Sand is good but it does not fill the bill. Then get them some bone. If you don't feed mash you can buy bone in a size as big as a small bean and put it in something where they can eat all they want. At first they won't eat much, but after awhile they will devour a lot; and the more they eat the better you will be paid. Feed them all they can eat of bone and good grit.

Poultry Disease Book.—Please recommend a standard book on poultry diseases and treatment therefor.—G. L. S.

There is no recognized standard book on diseases that I know of. California Poultry Practice" tells you all about the diseases of poultry and how to cure and prevent them, in a plain, simple language. By sending \$1.00 to the office with your inquiry you could have been treating your chickens now; but it is not any

too late. Send your order and the office force will see to it that you get a copy by return mail. One lady wrote me that this book had been a gold mine to her. It may prove to be so in your case.

Ducks Quit Laying.—I have two Indian Runner ducks that started to lay a month ago. They laid a few eggs then quit. I feed soaked barley and a mash of bran, alfalfa meal, and oil meal. They do not care for the mash and would rather eat barley or wheat. They have a big trough to bathe in.

Your ducks show good sense. If I had to choose between grain and a mash as coarse and poor as that, I believe I would be glad to take the grain. The ducks quit laying because you did not give them any material to make eggs with. Ducks must have good feed to lay on. They don't need any trough; just a drinking dish is enough. Make the mash palatable and I will warrant you they will eat it. Now here is a good mash for laying ducks: One part bran, one part middlings, one part corn meal, one part alfalfa meal, ten per cent of beef scrap, and two per cent grit and oyster shells. Feed all they will eat of this twice a day and plenty of water to drink; and you will get eggs.

POULTRY NOTES.

Turkey raisers in Merced Co. are anticipating good returns this year as the demand for birds is good.

The State Bureau of Food and Drugs has appealed to the housewives of California to aid the Bureau by immediately returning every bad egg. Director Lea points out that the Bureau is handicapped in its efforts to enforce egg standards by the reluctance of housewives to return bad eggs to dealers.

The Tri-State Breeders' Ass'n of Fresno has not absorbed the Fresno Poultry, Pigeon and Pet Stock Ass'n, as recently stated. The Tri-State Poultry Breeders' Ass'n was organized for educational purposes primarily. In time other advantages of co-operative organization may be considered. An amateur fancy and utility show for the San Joaquin Valley will be given by the latter association in Fresno Dec. 13 to 16 inclusive. Both classes will receive equal consideration.

Poultry Breeders' Directory.

TURKEYS, DUCKS AND GEESE.

THOROUGHbred FRENCH ROUEN Drakes, \$3 to \$5. All awards at San Jose. Every bird a winner. Eggs \$1.50 and \$2.50 a setting. Emma V. Miller, Farmington, Cal.

HART'S BRONZE TURKEYS AND EGGS. Large reduction in price of stock. Order now for fall delivery. Free Circulars. Albert M. Hart, Clements, Cal.

MAMMOTH BRONZE TURKEYS for breeding. Toms this month, \$5. No better stock on earth. S. C. Reed, Acampo.

CHICKENS, CHICKS, EGGS.

WANTED.—A number of hot water incubators, Jubilee preferred, 200 egg capacity or over. 220-egg type, Hoganized, S. C. White Orpingtons and Sicilian Buttercups, cockerels, hatching eggs and chicks. All information gladly furnished. M. S. Woodhams, San Mateo, Cal.

BABY CHICKS NOW READY.—Hatches every week. Write for special "Fall Chick" circular. See why Fall chicks pay. R. I. Reds, Barred Rocks, Black Minorcas, White and Brown Leghorns. Campbell Poultry Ranch, Campbell, Cal.

CROLEY'S DRY MIXED INFANT CHICK Feeds for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by Geo. H. Croley Co., Inc., Poultry Supplies, San Francisco.

THE SANTA CLARA VALLEY HATCHERY solicits your orders for Fall and Spring delivery in 8 breeds of baby chicks. Order early and get the best. Jos. A. Bihn, Lincoln Ave., San Jose, Cal.

DANISH S. C. W. LEGHORNS.—If you want to increase the size or vigor of your stock or the size and number of your eggs, use one of our cockerels. River Bend Farm, St. Helena, Cal.

HATCHING EGGS from our "Bred-to-Lay" S. C. White Leghorns. Season opens Dec. 1st. The early hatch lays the early winter egg. Booking now. R. H. Dickinson, Dept. IV, Los Gatos, Cal.

BARRED ROCKS, Buff Orpingtons, Indian Runner Ducks. Prize-winning breeding stock. Reasonable. Glendale, Fleming Ave., San Jose, Cal.



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WHITE WYANDOTTES.—Blue-ribbon winners. Eggs \$2 to \$5. Chicks, pullets, cockerels. R. W. Stawetski, Route 2, San Jose, Cal.

HIGH GRADE ANCONAS.—Fancy and utility. Settings, \$3.50. Fertility guaranteed. J. R. Bell, Livermore, Cal.

DAY-OLD CHICKS.—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, Cal.

WHITE WYANDOTTES.—Fine large cockerels, \$3.50. L. Haynes, Chowchilla, Cal.

CARNEUX PIGEONS.—\$1 to \$2 per pair. J. W. Noble, Livermore, Cal.

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Mrs. Best's Letter.

My dear Friends:

I wish that all of you who are interested in maternity dresses might have gone with me through that department in one of the big stores. It is possible now to buy garments that are both good-looking and serviceable, and that can be worn for any length of time. These dresses are made generally with a full-pleated or gathered skirt set on to an under-waist so that the weight hangs from the shoulders. There is an elastic band at the waist that regulates the waist line. The waists in quite a number of them were made like an artist's smock hanging full from a yoke to about eighteen inches below the waist and having a soft girdle or sash that could be tied loosely. The materials were soft finish serge, crepe and silk in dull shades of blue, brown and plum.

In this same department were most attractive negligees of rose and old blue corduroy, made very simply, with peasant sleeves and finished with either a hem or a satin binding.

Albatross is back in favor again for dressing jackets, etc., and these are trimmed in fringe or edged with lace with a little hand embroidery. They come in all the soft colors.

The white broadcloth collars that have been having such a vogue are shown now trimmed in rows of narrow velvet ribbon in pretty colors, or with inserts of crepe, or with a fancy chenille stitching.

Sweater sets of cap, scarf and sweater of Angora wool seem to be the fashionable knitted garment just now. Fibre silk has dropped into the background for the present.

Caps and scarfs for automobile use are shown of white corduroy, trimmed with a band of color. The caps are a modified Tam-o'-shanter in shape.

Gloves have been added to the long list of articles that have been advanced in price, and some kinds are practically impossible to procure.

Soutache braiding has been very popular on the suits and one-piece dresses, and now you find it on the crepe-de-chine blouses. Many of the plain white blouses are much higher than they were for the same quality silk.

Coats continue full and very generally fur-trimmed, and are shown in a bewildering array of solid colors. Mustard shade, trimmed with a dark fur and worn with a dark hat, makes a very modish combination. The prevailing style of looseness makes it quite possible to make one coat answer for both day and evening wear.

Hats are very generally one of two extremes—either they are very small, fitting the head close, or they are quite large, sailor in type, and having high crowns. The materials are velvet, plush, or silk beaver, and the preponderance of color is black.

Yours devotedly,

Rosabella Best.

Johnny, aged four, went into a near-by grocery and asked for a box of canary seed. "Is it for your mother?" asked the grocer. "No, of course not," replied the little fellow. "It's for the bird."

THE HOME CIRCLE

HOUSEHOLD HINTS.

Use ordinary adhesive plaster for mending a rent in an umbrella. If the umbrella is colored dye the adhesive tape.

Unsightly stitches may be prevented by sewing matting with raffia. It is very strong and can be purchased in almost any color.

As sheets begin to grow thin, they can be made to last much longer, by splitting down the middle and seaming the outside edges together. This brings the wear on another part of the article.

To clean leather couches or chairs, go over them with a cloth dipped in skimmed milk. This will clean and straighten out creases.

A home-made dustless mop can be made of old clean stocking legs or other soft material, dipped in a mixture of one quart coal oil and one-half pint boiled linseed oil. Hang up outside and when dry, it will answer the same purpose as the more expensive mop.

To keep mice from dresser or cabinet drawers, tack window screen over the bottom of the dresser or cabinet.

SAUCES.

A good sauce will do much to improve an ordinary dish, and the use of various sauces lends variety to the same dish. In general, sauces may be divided into two classes, white and brown. Flour is usually used for thickening and care should be taken that it is thoroughly cooked. In the case of the brown sauces, the flour should be browned first in butter. The liquid should be added gradually and for white sauce should be milk, cream, or white soup stock, and for brown sauce a brown soup stock.

A rich white sauce can be made with two tablespoons melted butter, two tablespoons flour, and one cup either chicken or veal stock that has been flavored with onion, celery and salt. This sauce can be used as the base for mushroom sauce, by adding one-half cup mushrooms cut in halves. Or for celery sauce by adding 1 cup of well-cooked celery.

BOILED CABBAGE.

Remove the outer leaves from the cabbage, cut into halves if small heads, into quarters if a large head and remove the tough stalk. Soak in cold water about 15 minutes before dropping into a vessel of boiling salted water to which has been added one-third teaspoon soda. Cabbage (in fact all strongly flavored vegetables such as turnips, onion and cauliflower) should be cooked in a large amount of water and uncovered. Cook about 35 minutes, or until tender. Remove from the water carefully, drain, season with salt, pepper and butter, or a white sauce may be poured over the cabbage. Serve hot on a hot dish.

CANNING OF SOUP.

Soup stock—Secure 25 pounds of beef hocks, joints and bones containing marrow. Strip off the fat and crack bones with a hatchet or cleaver. Put the broken bones in a thin cloth sack and place in a large kettle containing 5 gallons of cold water. Simmer (do not boil) for 6 or 7 hours. Skim off all fat. Salt when done cooking. Put while hot in glass jars, bottles or lacquered tin cans. Partially seal glass jars or seal tin cans, sterilize 40 minutes in a hot-water bath outfit. This stock can be used as a foundation for many vegetable soups that can be prepared in quantity, sealed and placed on the pantry shelf for use when a quick meal is necessary.

When canning on a small scale it is entirely possible to arrange to use home equipment such as a wash boiler with close-fitting cover for a home canner by making a false bottom with lifting handles.

A CONVENIENT LITTLE MOP.

A convenient little mop for cleaning bottles, tall vases and other dishes that the ordinary mop will not suffice for can be made as follows: Cut a deep groove one-fourth inch from the end of a slender stick—any desirable length and no larger round than a pencil. Place a bunch of string cut in two-inch lengths around the stick and tie them firmly in the groove with a strong thread. Next, turn the long ends of the string down and tie again just beyond the end of the stick.

CLEANING SPONGES.

For sponges that have become slimy, the following treatment makes them as good as new. Fill a basin with boiling water and a little washing soda and soak the sponge in this for several hours. Rinse in hot water and then again in cold, allowing the sponge to remain in the cold water for some time. This treatment can be given as often as necessary.

OLIVE OIL.

Olive oil has many virtues and among them is its use for softening the skin. After washing in warm water, take a little oil on the finger tips and rub it on gently; very little is required. It is free from the risk of growing hair, an evil tendency feared with vaseline and some animal fats. The free use of olive oil in the diet is beneficial to most people and is believed to improve the complexion.

Speaking with a young lady, a gentleman mentioned that he had failed to keep abreast of the scientific advance of the age. "For instance," he said, "I don't know at all how the incandescent electric light is produced." "Oh, it is very simple," said the lady. "You just press a button, and the light appears at once."

CANDIED SWEET POTATOES.

Wash and cook six medium-sized sweet potatoes in boiling salted water to cover. Drain, peel, cut in halves lengthwise, arrange in buttered baking dish, sprinkling each layer with sugar, using one cup in all. Pour over one-half cup melted butter. Cook in a slow oven two hours.

Floral Department.

[By Geo. N. Tyler.]

There is not much to be done in the garden during November, but a few things are in order. If you have not planted your bulbs do so at once. As soon as we have a severe frost, roses should be pruned—Cut them back heavy, back to one or two eyes of this season's growth and cut out all weak and blind wood.

Dahlias do much better if lifted now and dried off before putting away in the cellar or some cool, dry frost-proof place. Label every variety as you dig them and put them out in the sun for a short time to dry off. In storing them it is best to put them in dry sand, top side down, as the stalk where cut off gives off an acid that rots the tubers. This is one of the causes of decaying tubers. Your storage place must be absolutely dry and frost-proof. It does not do to keep them in a basement where there is a furnace. If you are in a warm belt, they can be left in the ground all winter, and be dug in early March, separated and replanted.

Chrysanthemums that have finished blooming should be cut off close to the ground, and be sure and label choice varieties so you will know what to propagate from in the spring.

Trees and Shrubs.—You can begin this month to transplant deciduous trees and shrubs if your soil is moist enough, for there is hardly any real dormancy in the warm belts, and the transplanted stock begins right away to establish itself by sending out rootlets and will make a good growth in the spring.

Roses.—You can purchase and plant your roses from now on, but do not plant any but small field grown plants, that is, plants that are one year old, and be sure and plant those on their own roots. You will get better results from them in the long run.

It is a little too late for seed planting, but sweet peas can still be planted, and a number of seeds of other varieties of plants, if you have a warm location.

NAMING THE FARM.

Perhaps a name for the farm is only a bit of sentiment, nevertheless it is becoming a custom that characterizes the owner as a man of pride. The community looks upon the name as a trade mark for this particular farm and the things for which it is noted.

The name should not be hastily chosen and should have a relation to some distinct feature of the farm or the line of farming pursued. After having made a decision in the matter, it should be used on stationery and should also be placed in an attractive manner at the gateway that all who pass may observe.

For the fall cleaning of closets and store rooms, the best thing to wash the walls and shelves with is a strong, hot solution of alum water. Use a brush, so as to reach every crack and crevice.

If soot is spilled on a carpet, sprinkle corn meal or bread crumbs on it before sweeping. A second application may be necessary to entirely remove the stain.

Good Health.

(By H. E. Pastor, M. D.)

A Few Words on Constipation.

This is a large subject and can be merely touched upon in this brief note. There is a vast literature on the subject, therefore many theories of its cause, and cures as numerous as there are theorists and quacks. Many of the latter have become immensely rich in foisting on the afflicted and gullible public their vari-

ous nostrums, whose continued use aggravate rather than relieve the condition they are recommended for.

More things than could possibly be enumerated here are causative of this condition, many of them due to social habits and conventional misconceptions. There is no doubt whatever that we in America eat beyond our physiological requirements and of the capacity of our digestive organs to assimilate, bringing on those instances of constipation where putrefaction of the ingested food and fermentation in the bowels are accompaniments of constipation. It is claimed by specialists who have delved deeply into this subject that man is not naturally a carnivorous animal, and in proof of this contention point to the well-known constipated habits of flesh-eating animals as contrasted with the easy defecation of grain-, grass- and fruit-eating animals; hence it is argued, with some semblance of truth, that meat should not be eaten at all, or only sparingly, by those afflicted with this commonest of all physical ills. Again, a sense of shame or lack of convenience often leads to the lengthened postponement of the bowel function, and the unexcreted matter becomes a source of local irritation, or is re-absorbed into the general circulation, whose current it pollutes.

From these few remarks one or two conclusions may be deduced: 1. Eat abstemiously, and avoid an excess of meat in the bill of fare. 2. Establish a habit of going to stool regularly, at least once a day. The mental impression is wonderfully effective in stimulating intestinal activity.

The Farm Woman's Preference.

Recently the Dean of the College of Agriculture in a sister State, with a view to getting a line on the relative value placed on sanitary and economic conveniences as gauged by the farm women, sent out inquiries over the State to that end. A summing up of the answers received showed the order of preference to be as follows: 1. Running water. 2. Sewage disposal. 3. Heat. 4. Light. Most of the housewives thought they ought to have all four conveniences, and those of us at all familiar with the laborious work incident to the average farm household in California think they richly deserve them.

Bad teeth are responsible for many serious and sometimes fatal diseases.

Don't carry a handkerchief too nice to use when you sneeze or cough.

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Colors	1 Gal.	5 Gal.	50 Gal.
Black	1.00	.90	.80
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Freight prepaid to your nearest station.
Beaver Board, Bear Board, Wall Board, \$37.50 per 1000 sq. ft.

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READY BUILT HOUSE CO.

1973 Broadway PORTLAND, OREGON

California Garden Flowers, \$1.50, Postpaid, Pacific Rural Press.

SAN FRANCISCO.

San Francisco, Nov. 8, 1916.

WHEAT.

There has been a little reaction in the East, and with car shortage hampering the movement of northern grain, prices show little further advance. California club, however, seems to be cleaned up, as none is offered; and northern club is slightly higher. A large tonnage of wheat was sold at Wheatland recently at \$2.30.

[First-hand prices on strictly first-class grain, San Francisco.]
 Sonora wheat\$2.65@2.70
 Northern club2.50@2.55
 Calif. club, cti.None offered
 Northern Bluestem2.85@2.90
 Northern Red2.75@2.85

BARLEY.

The advancing movement in barley has halted for the moment, and buying locally is very quiet, though there is no prospect of lower prices.
 Shipping, cti.\$2.00@2.10
 Choice feed, cti.1.95@2.00

OATS.

Texas red seed is cleaned up, and the movement in other seed grades is less active. Feed oats are moving fairly well, but offerings so far are ample.
 Red feed\$1.80@1.85
 Red seed2.15@2.30
 White1.90@2.00
 Black seed3.00@3.25

CORN.

Eastern corn is scarce, and yellow is quoted at a sharp advance. No California yellow is coming in yet, and new Egyptian is higher for first-class grain. Most offerings, however, are not thoroughly cured, and move slowly at irregular prices. One sale made in this city two days ago was at \$2.20 per hundred. White Gyp Corn also brought \$2.30.

[First-hand prices on strictly first-class grain, San Francisco.]
 Eastern Yellow, cti.\$2.40@2.50
 Milo MaizeNominal
 Egyptian, new2.25@2.35

BEANS.

The bean market has not yet settled down to any definite basis, and there is a very feverish feeling in regard to prices, though so far the movement has been entirely upward. Large whites show no further change, and are pretty well out of growers' hands, so their position is better established. In other lines most of the crop is still in the country and threshing is not yet completed. Everything is very firmly held, and buyers seem anxious to get supplies; but the future is rather uncertain.

Bayos, per cti\$5.75@5.90
 Cranberries5.00@5.10
 Cranberry beans6.50@6.60
 Horse beans3.25@3.50
 Small Whites (south) new crop8.00@9.50
 Large Whites, new crop8.10@8.50
 Pinks5.75@6.10
 Limas (south)6.20@6.30
 Red Kidney8.50@9.00
 Mexican Reds6.00@6.25
 Tepary beans4.25@4.50

HAY.

Local prices have been marked down rather sharply from the figures which have prevailed for the last few weeks, though an advance might sometimes be obtained in cases of momentary local shortage. The car situation is as bad as ever, and the limited arrivals are mostly by boat. Local consuming requirements, however, are very light, though there is some export business. Dealers assert that the difficulty of moving hay from the country at this season is likely to bring a weak market in the spring, when there will be efforts to clean up the holdings. The distributive movement in the country is also hampered by lack of cars, but the demand is rather strong.

[Wholesale prices per ton, carload lots, San Francisco.]

Wheat, No. 1\$13.00@14.50
 No. 210.00@12.00
 Tame oats11.50@15.50
 Wild oats10.50@13.00
 Barley10.50@13.00
 Alfalfa10.00@14.50
 Stock hay8.50@9.50
 Straw, per bale50@.70

FEEDSTUFFS.

Rolled oats and barley are \$2.50 per ton higher.

POTATOES, ONIONS, VEGETABLES.

The Delta celery season is now well under way, and several carloads are moving daily from Antioch, with prices satisfactory. Locally, Alameda stock is still steady, despite large offerings from the Delta. String and lima beans are scarce and higher. The Bay tomato crop is being cleaned up, and prices are easier, with heavy offerings of green stock. Potatoes remain very firm, but prices are about as before, with choice River stock sometimes bringing a premium. Sweet potatoes are firmer, with large Eastern demand. Onions show another sharp advance, with a heavy demand and all supplies here closely held. Oregon growers have withdrawn offerings from the market.

Celery, Alameda, bunch10c
 Cucumbers, lug50@75c
 String beans4@6c
 Lima Beans5c
 Summer Squash, lugs50@75c
 Eggplant, lugs30@40c
 Peas, lb6@8c
 Tomatoes, lugs75@90c
 Rhubarb, lugs75@1.00
 Potatoes, cti., Delta2.00@2.25
 Salinas2.65@2.75
 Sweet Potatoes, pe cti.1.75
 Onions3.25@3.50
 Garlic, new crop, per lb3@3.5c

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
 Prices Quoted as Paid to Producers.

POULTRY.

Dressed turkeys are easier, with only moderate demand, but live stock is steady. Arrivals of Eastern chickens are large, and prices remain easy in all lines, with considerable stock held over from day to day. The only quotable drop, however, is on roosters, which are hard to move.
 Turkeys, dressed, large, lb25@28c
 Turkeys, live, lb, young, large21@24c
 Old, large20@22c
 Broilers, 18 lbs. to doz. and less, lb.26@28c
 do, over 18 lbs. to doz21@23c
 Fryers20@22c
 Hens, extra, per lb., colored20c
 Small leghorn15@17c
 Smooth Young Roosters, per lb. (3 lbs. and over)18@20c
 Squabs, per lb.35@40c
 Geese, per lb.14@15c
 Ducks14@15c
 Old13@14c
 Belgian Hares11@12½c

BUTTER.

Extras continue to fluctuate between 32½ and 33c, and lower grades also remain at the same range as last week. The export demand is still shut off, and supplies are coming in freely, though the effect of former shipments is still apparent on prices.

Thurs. Fri. Sat. Mon. Tu. Wed.
 Extra32½ 33 32½ 32½ — 32½
 Prime 1sts32 32 32 32 — 32
 Firsts31 31 31 31 — 31

EGGS.

Extras show a more definite tendency upward than for several weeks, though the advance is slight. Supplies of this grade are coming in slowly, and there has been a good buying movement at the recent prices.

Thurs. Fri. Sat. Mon. Tu. Wed.
 Extras48 46½ 48 49½ — 50
 Sel. Pul.37½ 37½ 38 38 — 38

CHEESE.

The only quotable change is on Monterey cheese, which is higher on diminishing supplies.

[S. F. Dairy Exchange prices.]
 Y. A's, fancy18 c
 Fancy Calif. Flats, per lb16 c
 Monterey Cheese16@17 c

DECIDUOUS FRUITS.

The Newtown pippin crop is getting pretty well out of first hands, though the greatest difficulty is experienced in getting cars, and many sales have been held up on that account. Prices, however, hold firm and the outlook is encouraging. Bellflowers, etc., are moving on the street at the old figures. Local grape prices are unchanged, and the demand is active, with considerable good stock still offered. The shipping business is practically all over. Some lots of pomegranates are offered lower, while figs are higher, with few appearing. Casabas are up a little, with a large movement.

[Wholesale prices, San Francisco.]
 Huckleberries, lb., fancy10@11c
 off grade6@8c
 Strawberries, chest\$5.00@8.00
 Cranberries, Cape Cod, bbl.11.00@11.50
 Apples:
 Bellflower, box75@85c

Jonathans85@1.00
 Newtown85@1.00
 Pears, Winter Nellis1.25@1.75
 Persimmons, box, dbl. layer75@1.00
 Pomegranates, lug75@1.00
 Quinces, lug40@.50
 Figs, Cal. black, box, double layer1.00@1.10
 Casabas, crate85@.85
 Grapes, Malaga, lug75@1.00
 Muscats, lug75@1.00
 Tokay, lug75@1.00
 Black, lug75@1.00

DRIED FRUITS.

Business is retarded considerably by lack of cars, leaving the Eastern markets very short of supplies; but the demand seems to be running ahead of the supply, regardless of that feature, and from most reports the bulk of the crop in all lines has already gone into distribution. One of the most sensational features is the continued heavy demand for raisins, which has delayed the issuance of the new list by the Associated; and another matter of interest is the activity in peaches, which has already absorbed the greater part of the crop. Apples are held at 7c, firm, with little stock left; and 15c is now the inside figure on cots. A few black figs may still be had, but the supply is rapidly moving off, and there is a great shortage in other varieties. Packers report not over 1,000 tons of prunes left in the Santa Clara Valley, and growers are holding for 6½ to 7c, though 6½ is the highest paid yet. Small sizes are practically all gone. Pears are firm in sympathy with other fruits.

[Net to growers, bulk basis, f. o. b. shipping point.]

Apples, new crop7 c
 Apricots, per lb. 191615 c
 Figs, white, 1916None offered
 Figs, blk5 @5½c
 Callimyrnas, 1916None offered
 Prunes, 4-size basis, 19166½@6¾c
 Pears6½@7 c
 Peaches: Standard yellow6 c
 Muirs6½c

HONEY.

The local honey market is beginning to stiffen up as the holidays approach, and shows the effects of the light production, as the general consuming demand is rapidly absorbing the stock on hand, without any export movement. Low-grade honey for manufacturing is in most demand, and dark extracted shows a slight advance.

Water white, comb13@14 c
 Light Amber10@12 c
 Amber8@9 c
 Water white, extracted8@9 c
 Light amber8@9 c
 Dark4½@5 c

HOPS.

The market continues inactive, probably owing mainly to the shutting of American hops from the British market. Buyers are taking little interest, and most of the growers are holding off in hope of an advance.

Sacramento10@11c
 Mendocino11@13c

HORSES.

Nothing of any interest has appeared here this week, as recent of-

ferings have been moved with difficulty and conditions do not seem favorable for further offerings at present. The city market, in fact, has been so quiet this season that sellers are giving more attention to country business, and more sales are being held at outside towns, with fair success. Values are held at about the old level, the continued demand for military uses tending to keep the market firm.
 Drafters, 1700 lbs and up ..\$ 250
 Drafters, 1550 to 1650 lbs ... 150@200
 Chunks, 1350 to 1500 lbs 150@175
 Wagon horses 1050 to 1350 lbs 110@150
 Green Mountain range horses, 950 to 1200 lbs. 20@75

PETROLEUM.

A reduction of ¼c per gallon is announced on Elaine oil in cases. Zerosene is slightly higher.
 Red Crown Gasoline, drums, etc., per gal19 c
 Red Crown Gasoline, cases, per gal27 c
 Engine Distillate, drums, etc., per gal9½c
 Engine Distillate, cases, per gal. 17½c
 Pearl oil, bulk, per gal9 c
 Pearl oil, cases, per gal17 c
 Zerosene, lt. med., heavy, bbls., per gal41 c
 Zerosene heavy duty oil, bbls., per gal51 c
 Arctic cup grease (No. 0 to No. 5), 10 lbs., per lb.8 c
 25 lbs., per lb.8 c
 Zerosene transmission, lubricant, 10 lbs., per case "A"\$1.35
 25 lbs., per case "A"2.50

GROCERIES.

Flour shows a further advance, ranging from \$8.80 to \$9.20 per bbl. Prices have been withdrawn on some lines of soap, and everything in this line is much higher. Much higher prices on salt are predicted. A number of grocery specialties are out of the market. Hams, lard and oil are higher. Broom corn is said to be worth \$250 per ton, and brooms have advanced sharply.

LOS ANGELES.

Los Angeles, Nov. 7, 1916.

RUTTEL.

Receipts California by rail for week ending Tuesday, Nov. 7:

1916273,500 lbs.
 1915262,720 lbs.

There was a dropping off in the receipts the past week and a rather firm tone to the market. San Francisco was weaker, but this had no influence upon the market here. Chicago and New York were both stronger, which made holders here more independent, especially as the cold storage stocks are much lighter than a year ago. A very good local consumptive demand was had throughout the week, though there was no investment buying. The fact that prices now are 7c higher than a year ago caused traders on 'change to go slow.

Wed. Thu. Fri. Sat. Mon. Tu.
 191633 33 33 33 33 33
 191526 26 26 26 26 26

EGGS.

Receipts by rail as reported to the Produce Exchange for week ending Tuesday, Nov. 7:

1916710 cases
 1915734 cases

There was a little more life to the market the past week, though there was nothing doing on 'change. A dropping off in the receipts and the markets both in San Francisco and the East being higher encouraged the street trade to take hold more willingly and absorb the light receipts at good prices. It was a steady 45c market for fresh ranch case count up to Saturday. Monday in sympathy with stronger markets elsewhere prices were jumped on 'change to 48c. San Francisco was up 1½c and the receipts were very light for two days. Receipts for the week by rail were 710 cases and estimated receipts by truck 600 cases, total 1310 cases. The same time last year receipts by rail were 734 cases and estimated receipts by truck 600 cases, total 1334 cases. Fresh ranch, case count48c
 Pullets46c
 Daily quotations on 'Change:

Wed. Thu. Fri. Sat. Mon. Tu.
 191644 45 45 45 48 48
 191543 43 43 43 43 43

POULTRY.

There was less life to the market the past week, at the same time the movement was fair. The sharp advance in all feedstuffs the past few weeks caused local poultry raisers to reduce their flocks, hence an increase in the supply both of hens and light stuff, and as the demand showed no improvement prices dropped 1c on all broilers, fryers, hens and young roosters. Ducks and geese in better demand and 1c higher. Turkeys steady. No eastern poultry in the local arrivals being sufficient to take care of the trade.

Broilers, 1½ to 2 lbs.22@23c
 Fryers, 2½ to 3 lbs.20@22c
 Hens, over 4 lbs.18@19c
 Hens under 4 lbs.14@15c
 Ducks15@16c
 Geese14@15c
 Roosters, 3 lbs. up (soft bones)18c
 Turkeys, heavy, 12 lbs. and up22@23c
 Turkeys, light19@20c
 Squabs, live, per doz.\$1.50@2.00
 Dressed3.75@4.85

HAY.

There was a little firmer tone to the market the past week. Light receipts and a fair demand operated to maintain full last week's prices, though they were unable to establish an advance. We quote:

Special Citrus Market Report.

Los Angeles, Nov. 7, 1916.

Shipments of oranges from Southern California for the season from November 1, 1915, to October 31, 1916, were 31,757 cars against 33,317 cars the same time 1914 and 1915. Shipments of lemons the past season 6940 cars against 6843 cars the season of 1914-15. Total shipments of oranges the past season 38,697 cars against 40,160 the season of 1914-15. These figures show a falling off the past season in the shipments of oranges of 1560 cars, but a gain in the shipments of lemons of 97 cars.

The past week the market showed less life and was inclined to weakness. Offerings the tail-end of the Valencia crop and of less desirable quality had something to do with the market. Then, too, new navels will soon be on the market and will be had for less money, which doubtless is having its influence. Hence buyers inclined to go slow. Locally there was a little more doing in oranges and prices steady. Grapefruit also sold fairly well. Lemons continue dull. Local packers are paying for oranges 2½@3¼c in the grove and for grapefruit 2@3c per pound in the grove and lemons 1½@2c per pound in the grove.

Special Deciduous Market Report.

[By J. L. Nagle.]

Sacramento, Cal. Nov. 6, 1916.

Shipments of grapes are now very light, Malagas having been practically cleaned up, and what Tokays have not been damaged by the recent rain will all have been shipped within the next week or ten days.

The shipment of Drum Emperors will also be finished within the next week. Crate Emperors will be moving in light supply for the balance of the month.

The following prices have ruled for

FROM AUCTION SALES.

New York Nov. 3.—Nine cars of Valencias and two cars of lemons sold. Oranges steady on best grades, generally easier on poor and choice stock. Lemons steady. Weather fair. Valencias averaged \$3.10 to \$6.80. Lemons averaged \$3.95 to \$6.40.

Boston, Nov. 3.—Eight cars sold. Market easier on oranges—doing better on lemons. Valencias averaged \$3.85 to \$5.65. Lemons \$6.30 to \$7.65.

Philadelphia, Nov. 3.—Two cars sold. Market stronger. Valencias averaged \$4.15 to \$5.15.

New York, Nov. 6.—Sixteen cars of Valencias and five cars of lemons sold. Market is steady on oranges, but lower on lemons on account of increased offerings. Weather fair. Valencias averaged \$3.45 to \$6.50. Lemons \$3.50 to \$6.10.

Boston, Nov. 6.—Ten cars sold. Market lower on both oranges and lemons. Valencias averaged \$3.45 to \$5.25. Lemons averaged \$4.15 to \$6.25.

Philadelphia, Nov. 6.—Four cars sold. Market strong and higher both on oranges and lemons. Valencias averaged \$4.90 to \$5.35. Lemons averaged \$5.50 to \$6.75.

New York.—Tokay grapes averaged \$1.35; Cornichon, \$1.31; Emperor, \$1.50; Malaga, \$1.09; Pomegranates, \$1.50.
 Chicago.—Malaga grapes, \$1.20; Tokay, \$1.05; Emperor, \$1.38; Cornichon, \$1.49.

Boston.—Tokay grapes, \$1.67; Malaga, \$1.27; Cornichon, \$1.45; Emperor, \$1.75.
 Total shipments to Oct. 6, 17,097 cars; total shipments same date 1915, 15,885 cars.

(F. o. b. Los Angeles.)
Barley hay \$14.00@16.00
Oat 16.00@18.00
Alfalfa, Northern 14.00@15.00
Alfalfa, local 16.00@17.00
Straw 7.50@ 8.00

WALNUTS.
The season with the association is over. The fair weather the past ten days enabled growers to gather the crop pretty freely and the Association reports the crop of its members all in and shipped, with the exception of a few tall ends. Secretary Thorp says the past week was a very active one with them and the season will be closed by November 13. The market is very

firm and no good walnuts are to be had now save at a premium over the association prices and they are 1c per pound higher than last year. With but few foreign walnuts on the market the trade absorbed the short crop at the advance without trouble and the season is said to have been a very successful one.
The Associated prices for this year and last are:
1916 1915
No. 1 \$15.50 \$13.60
No. 2 12.50 10.60
Budded 19.00 17.00
Jumbos 17.50 16.60
Orchard run 3c per pound less.

Special Livestock Market Report.

San Francisco, Nov. 8.

No changes are made in the livestock prices from last week. F. L. Washburn of the Western Meat Co. has recently returned from an extended trip in the East. He found practically no choice cattle coming into the markets there, those selling for top prices being few in number. The rest were selling very little higher than at San Francisco. Most farmers in the East seem planning to rough-feed their cattle through the winter on account of high price of feed. This is likely to create a scarcity after Jan. 1, and a corresponding liberal supply next summer. Hog prices are still held fairly high in the East, due to the high price of lard and all other fats, edible and inedible. Sheep in the East are higher than usual, the scarcity being due to the high price of wool.

CATTLE: Locally the steer market is strong and the demand for cows is steady.

HOGS are in steady supply, of good quality and desirable sizes, which, for the Western Meat Co. are about 3/4 light weights and 1/4 heavy weights. Large California hogs are usually older than in the East, having bigger frames and less lard. A four-car shipment was recently received from Lovelock, Nev., in which the hogs averaged 497 pounds and were nearly two years old. The folks had fed them nearly a year, holding for high prices. These were about the heaviest hogs that ever came to San Francisco in such a large shipment. They dressed out 83 per cent and drew premium prices; but at that, were probably a losing venture for the growers. Feeding such heavyweights would make most anybody go broke if long continued, according to Mr. Washburn.

DRESSED MEATS: The market for dressed meat is weak but is expected to rally within the next few weeks. All pork products are high, but fresh beef and sheep are reasonable. There are no exports from California.

SHEEP are scarce on account of high wool and previous prices; the few remaining lambs are well grown.

WOOL: Defective wool remains the same, but free wools are one to two cents a pound higher. Fall clips and last spring's wool are reported mostly out of growers' hands already. Boston markets have been very active.

[Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F.]

Steers, No. 1	6 1/2 @ 7 c
No. 2	6 1/4 @ 6 1/2 c
Cows and Heifers	5 1/2 @ 6 c
No. 2	5 @ 5 1/2 c
Bulls and Stags	4 @ 4 1/2 c
Calves, light	8 @ 8 1/2 c
Medium	7 @ 7 1/2 c
Heavy	6 @ 6 1/2 c

HOGS, gain-fed:
100 to 150 lbs. 8 1/4 c
150 to 250 lbs. 9 1/4 c
250 to 325 lbs. 8 1/2 c

SHEEP: Prime Wethers 6 1/2 @ 7 c
Spring Lambs, f. o. b. \$5.25@5.75

WOOL: Red Bluff, year's 25@27c
Mountain, fall 16@20c
Sacramento Valley, year's 19@25c
Mendocino, year's 31@32c
Mendocino, fall 18@20c
Southern, year's 18@21c
Southern, 7 months' 13@16c
Southern, fall 9@11c

WEEKLY BUTTER AVERAGES.
Cents per pound for Extras.

Week	San Francisco	Los Angeles
Ending Jan. 1915	28.60	28.80
" 2	28.33	28.16
" 3	27.50	26.83
" 4	30.66	28.50
" 5	28.66	26.66
" 6	26.88	23.33
" 7	26.74	23.25
" 8	29.00	27.16
" 9	27.10	27.00
" 10	27.00	24.08
" 11	24.66	24.00
" 12	23.00	22.50
" 13	22.91	23.00
" 14	23.00	22.23
" 15	23.03	22.00
" 16	23.00	22.75
" 17	23.00	22.00
" 18	23.00	22.50
" 19	23.00	22.00
" 20	23.00	22.50
" 21	23.00	22.00
" 22	23.00	22.50
" 23	23.00	22.00
" 24	23.00	22.50
" 25	23.00	22.00
" 26	23.00	22.50
" 27	23.00	22.00
" 28	23.00	22.50
" 29	23.00	22.00
" 30	23.00	22.50
" 31	23.00	22.00

Imperial Valley, year's 17@19c
Imperial Valley, 7 mos. 14@15c
Nevada 21@23c
Fall wool 10@20c

North Portland, Ore., Nov. 6, 1916.

CATTLE: A very light run on today's market, about 600 head. There was a keen demand from both local and outside packers and butchers and prices were 15 to 35 cents higher on all cattle. The quality of today's run was very common, but a few loads of good cattle here, one load of good steers brought \$6.75, with a few other sales at \$6.60; the balance of the steers sold from \$3.50 to \$6.00. Good cows brought \$5.50 while ordinary kind brought \$4.75 to \$5.00. Bulls were in good demand at 25c higher prices; fair to good bulls brought \$4.00 to \$4.25. There were a number of loads of feeder stock here today, a few going at \$5.75.

HOGS: There was a liberal supply of good hogs today, one of the best runs for some time. One load of choice butchers brought \$9.80, with several other loads of prime stuff to packers going at \$9.75. The bulk of sales were made at \$9.60. There was a good demand from packers and butchers.

SHEEP: There is practically no change in the sheep trade. One load of choice East of the mountains lambs brought \$8.75 today with a number of loads of Valley lambs at \$8.50. Valley yearlings brought \$7.50; good mutton ewes at \$5.55. A very good demand continues for all kind of sheep.

Los Angeles, Nov. 7.

CATTLE: The market situation is unchanged from a week ago. A fair run of very good steers was had the past week both from California and Nevada and last week's prices were fully sustained. Killers were all in the market and made very fair purchasers.

Quotations f. o. b. Los Angeles:
Beef steers, prime 1000 to 1100 lbs. \$7.00@7.75

Stockers and feeders 5.50@6.50
Prime cows and heifers 6.25@6.50
Good cows and heifers 6.00@6.25

HOGS: California continues to furnish us a very good supply of hogs and of very good quality and they supplied most of the demand. The eastern markets being less bullish and the Idaho market not so strong, a few Idaho hogs were in during the week, the first for a long time. Killers all in the market and they made fair purchases at last week's prices.

Per cwt. f. o. b. Los Angeles:
Heavy, averaging 250@300 lbs. \$8.50@9.00

Mixed, 200@250 9.25@9.50
Light, 175@200 9.25@9.50

SHEEP: A steady and rather firm market was had the past week. A very good supply of yearlings and lambs were had in from Utah and Nevada and they were in very good condition. Not many heavy sheep arriving, they still being hard to get. Killers all in the market and they bid up well for everything that suited them.

Per head f. o. b. Los Angeles:
Prime wethers \$7.00@7.25
Prime ewes 6.50@6.75
Yearlings 6.50@7.00
Lambs 6.50@7.00

CALVES: Arrivals only fair and market steady and firm. Selling at \$8.50@9.50 per cwt.

August 7 27.00 26.16 26.00 26.00
" 14 27.00 26.50 26.00 26.00
" 21 27.50 26.50 26.00 27.95
" 28 28.00 27.25 26.00 28.50

Sept. 4 28.00 30.00 26.00 30.50
" 11 28.00 30.20 26.00 31.00
" 18 27.00 30.41 26.00 32.09
" 25 26.50 30.41 26.00 30.50

Oct. 2 25.91 31.66 26.00 32.16
" 9 26.91 32.91 26.00 32.83
" 16 27.00 33.50 26.00 33.50
" 23 27.00 32.75 26.00 33.00
" 30 27.00 32.59 26.00 33.00

Nov. 6 26.55 32.66 26.00 33.00

WEEKLY EGG AVERAGES.
Cents per dozen for Extras.

Week	San Francisco	Los Angeles
Ending Jan. 1915	38.50	35.60
" 2	32.66	31.41
" 3	31.00	30.33
" 4	30.50	34.83
" 5	28.16	36.33
" 6	23.33	35.66
" 7	23.00	28.90
" 8	23.60	23.58
" 9	21.40	20.30
" 10	20.50	18.33
" 11	20.66	19.50
" 12	21.00	20.00
" 13	20.83	21.41
" 14	21.75	21.00
" 15	22.00	21.00
" 16	22.00	21.16

24	21.80	21.83	22.25	22.58
May 1	25.16	21.00	22.00	22.58
" 8	23.33	21.20	22.00	21.41
" 15	23.58	24.58	22.00	20.83
" 22	23.58	25.46	21.91	22.50
" 29	23.50	25.33	21.83	22.50
June 5	22.50	25.00	20.70	24.51
" 12	22.00	25.00	21.00	24.16
" 19	22.00	24.83	20.00	23.75
" 26	23.33	24.66	23.83	24.58
July 3	23.83	24.60	22.50	24.00
" 10	25.50	26.30	25.00	24.00
" 17	24.83	27.16	24.66	27.00
" 24	25.41	28.20	25.50	28.00
" 31	25.80	28.50	25.80	28.00
August 7	30.50	31.00	28.00	29.16
" 14	31.16	33.08	28.66	31.00
" 21	31.25	33.09	30.16	31.83
" 28	30.58	33.50	29.16	32.09
Sept. 4	30.08	36.12	30.16	32.00
" 11	34.33	37.90	31.66	36.00
" 18	37.98	38.83	33.37	37.00
" 25	38.66	39.75	34.66	38.66
Oct. 2	40.08	39.75	37.33	40.50
" 9	40.08	42.25	38.00	43.16
" 16	45.50	48.50	40.00	49.32
" 23	48.08	47.01	42.00	46.50
" 30	48.58	47.09	42.83	43.33
Nov. 6	51.08	47.66	43.00	45.50

You need a practical book to help you in the poultry yard. Mrs. Sways-goods "Poultry Practice" may be had at this office for \$1 per copy postpaid.

Next week's issue of the Rural Press will contain forty pages, if present plans mature. This will be the largest issue we have ever made and is caused by the demand for advertising space. We have several special articles already in hand, and taken altogether, we believe the paper next week will be notable.

Classified Advertisements

MISCELLANEOUS.

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PRODUCER TO CONSUMER—Alfalfa meal, alfalfa hay, oat hay, honey, beans, Gyp corn, sorghum molasses, etc.—what do you need? O. L. Linn, Marketing Agent Stanislaus County Farmers' Union, Modesto, Cal.

FOR SALE—4-wheel Gas Pull Traction Engine, 30 belt, 15 drawbar horse power. Weight 8 tons. Has plowed less than 500 acres. Excellent condition. Cheap for cash. Box 370, Pacific Rural Press.

APPLES DIRECT FROM PRODUCER—Fancy grade, bulk pack. Bellefonte, 75c per box; Newtown Pippins, 85c; Missouri Pippins, \$1. No. 2 grade, 60c. Edward A. Hall, R. F. D. 1, Watsonville, Cal.

BUY ROASTED COFFEE WHOLESALE—Best, 10 pounds, \$3.00 delivered. Order with remittance. WM. J. SCHROTH CO., 112-B Market St., San Francisco.

STUDY TELEGRAPHY, Stenography, Book-keeping, Law, English, Board, room and tuition may be earned. Catalogue free. Mackay Business College, 909 Main, Los Angeles.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency. Savings and Loan Building, Stockton, California. Established fifty years.

"HOW TO LIVE ON LESS"—a guide to cheaper living. Wholesale catalogue free. Pacific Co-operative, A236 Commercial St., S. F.

TO REDUCE THE HIGH COST OF LIVING, send for our Wholesaler to Consumer Catalog. SMITHS' CASH STORE, 106 Cay St., San Francisco.

HONEY—Pure extracted honey in 5-gal. cans, \$4.00. L. Haynes, Chowchilla, Cal.

SEEDS, PLANTS AND TREES.

SCARIFIED SWEET CLOVER SEED—New bulletin—"Sweet clover in the Northwest"—tells how sweet clover thrives under severe conditions building up the soil and preparing it for alfalfa and other crops. Write for copy. Scarified seed makes difference between success and failure. Also have fine stock of non-irrigated, pure, alfalfa seed. Write for prices and samples. Ralph Waldo Elden, Box 22, Central Point, Ore.

SEED POTATOES—The largest field of Burbank, certified under State inspection in California; also Certified American Wonder and high-grade Oregon Seed. Garnet Chili and others. References: Acting State Horticultural Commissioner, Mr. Geo. P. Weldon, W. V. Shear of Stockton, and the Pajaro Valley National Bank of Watsonville. This stock will go fast, and would advise your writing early. H. A. Hyde, Watsonville, Cal.

RHUBARB—Now is the time for planting rhubarb. \$1324.00 is one first-acre in eighteen months from planting. Write me and I will tell you how you can do as well. J. M. Stone, Lodi, R. D. 4.

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30x3	0.95	1.85	2.10
30x3 1/2	0.95	2.10	2.35
31x3 1/2	0.95	2.15	2.40
32x3 1/2	0.95	2.25	2.45
34x3 1/2	10.95	2.30	2.55
36x3 1/2	12.95	2.40	2.75
38x4	13.20	2.80	3.10
40x4	13.85	2.85	3.20
42x4	14.05	2.95	3.30
44x4	14.70	3.10	3.40
46x4	14.95	3.15	3.50
48x4	15.55	3.20	3.60
50x4	15.55	3.30	3.70
52x4 1/2	20.25	3.85	4.30
54x4 1/2	20.85	3.95	4.35
56x4 1/2	21.25	4.10	4.50
58x4 1/2	21.90	4.15	4.60
60x5	23.05	4.70	5.20
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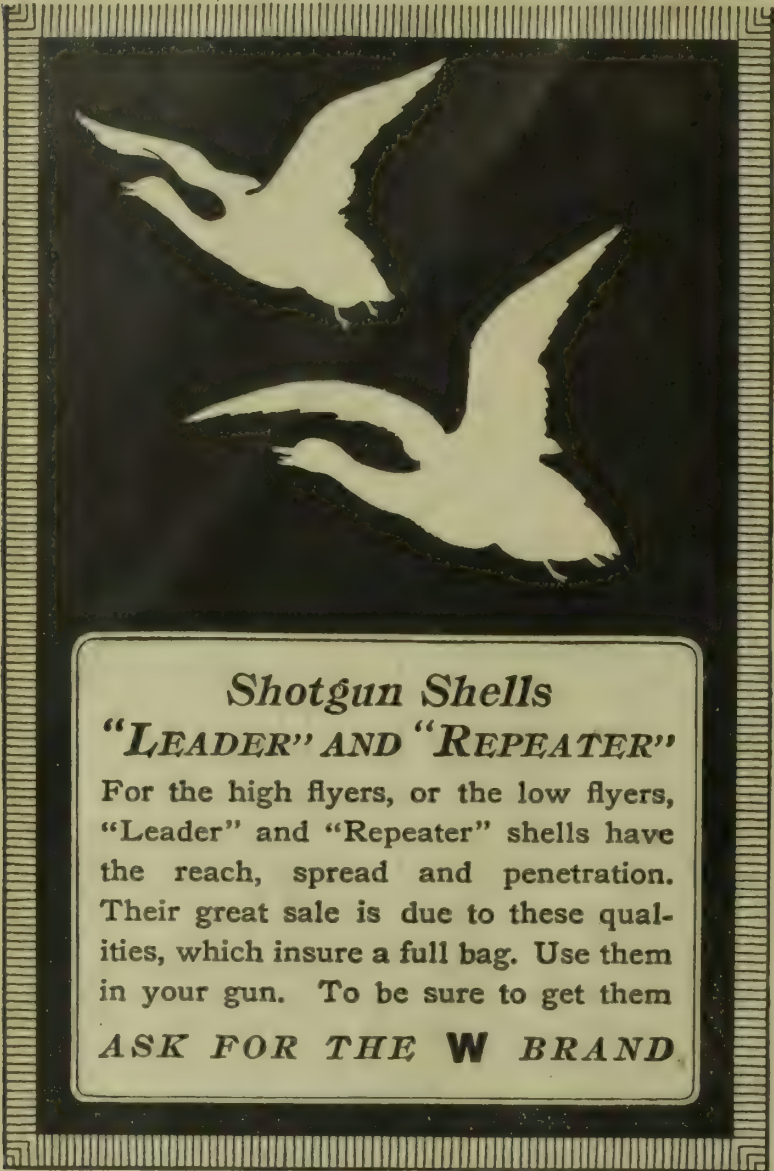
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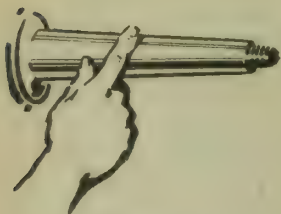
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THE PACIFIC RURAL PRESS

SAN FRANCISCO

NOVEMBER 18, 1916.

LOS ANGELES

Thanksgiving for the Agricultural Year.

The Year Has Brought Forth Good Crops, High Prices on Eager Markets, and Greater Co-operation among Producers. The Future Holds Promise of Better Markets and Capital for Increased Production.

[Written for Pacific Rural Press.]

TIS real Thanksgiving time; for not only have we avoided the loss of our best manhood and money by war, but we are prosperous to the point where luxuries seem necessities. That California is highly prosperous, is shown in a multitude of ways. The State Controller's figures on assessed valuation of real and personal property in this State, exclusive of railroads, are \$3,420,871,174, an increase over last year of \$116,378,376.

In the main, crops have been fine, weather good, and markets eager at prices almost unprecedented. The prices of various products, figured by averaging the weekly highest and lowest quotations in Pacific Rural Press market reports for the past three years, from January 1 to October 16 of each year, show gains on the following products among others, for the year 1916 over the averages of 1914 and 1915: Wheat, barley, alfalfa, potatoes, poultry broilers, eggs, butter, dried peaches, raisins, oranges, lemons, all meat livestock and wool, and fresh plums, peaches, pears, and grapes. Many other farm fruits and products were not averaged. In most farm products, the prices have continued to soar since this compilation was completed.

While the barley crop was less in total this year than last, all grades are far advanced, and the export continues. Other grains are proportionately higher and scarce.

In the bean sections, rains have injured a small part of the crops, but prices are sky-high. Beans are being sold as fast as they are threshed. Growers were recently receiving 9½ cents at Stockton for small whites. The total bean crop is estimated at 245,000,000 pounds.

Potatoes are about as high-priced as pianos, and they are being sold as fast as dug. The certified seed potato law has been in effect this year and the hundreds of acres of seed being grown subject to it promises well for the future of this industry.

The biggest trouble of poultry raisers is that they haven't enough laying stock; for even the present high-priced feed looks cheap when you are selling four-cent eggs.

Prunes and dried apricots, peaches, figs, and raisins are above what even the growers could have hoped for. Dried pears and apples are mostly out of growers' hands, having sold at happy prices—many pears at 10 cents f. o. b. ranch.

The 1916 pack of canned fruit and vegetables is practically all sold, and prices now are expected to diminish consumption. This may get people out of the habit of using canned goods, but it insures no carry-over to embarrass the marketing of next year's crop.

Citrus Exchange fruit, during the year just past, returned to California nearly \$28,000,000, or 33½ per cent more than in any preceding year. Quality was about the best ever, due to good weather and careful handling.

Deciduous fresh fruit shipments to November 4 were 16,972½ cars, or nearly 1,300 carloads more than to the same date in 1915, which had been the banner year of all. Prospects are that returns will be \$20,000,000, or \$2,000,000 more than last year. The season was a week or two earlier than last year, and weather made the quality first-class. Stoppage-in-transit privileges have been secured, and will aid materially next year in developing small Eastern markets into carload receivers.

The only exceptional and severe fruit troubles of the year, aside from a light crop of almonds and apricots, afflicted the grapes. Early in the season the crops in whole vineyards were wiped out by frosts. Late in the season, long-continued rains put many of the table grapes to the bad, but the total tonnage is expected to equal the banner crop of last year when nearly 1000 carloads more were shipped than ever before. Almeria grape imports from Spain are larger by far than last year, but have not injured the sale of those from California. The rains spoiled a considerable percentage of drying raisins, but advanced prices are helping to make up the loss so the crop is expected to yield \$10,000,000. The threat of prohibition of the wine-grape industry has passed; but the good prices paid this year do not make the growers forget the several losing years just past, and interplanting with fruit trees goes on apace.

Causes of Increased Values.—Among the influences affecting increased values of farm products the war has possibly been the greatest, largely due to increased prosperity in the East, and therefore to increased consumption of our Western products.

Legislation in California has standardized the quality of deciduous fruit to a remarkable degree, giving confidence to Eastern buyers and eliminating much of the fruit that would have reduced the demand for our products.

The 8 to 1 test on oranges, having been firmly enforced by the California Fruit Growers' Exchange for two years has led to such stability of markets that at least three counties have passed ordinances enforcing that test on all shipments from them.

State Market Director.—Early this year, State Market Director Harris Weinstein began consistently and actively to nurture the formation of growers' stock organizations; and some of them are now in working order.

Growers' Organizations.—The most remarkable new organization is that of the peach growers, completed this year; and its effect in trebling the price of dried peaches to the grower has been noted.

The raisin growers' organization has for the first time sold out a crop, the biggest ever grown, before the next one came in. The new crop will nearly equal last year's in spite of the rains.

The example of these organizations has encouraged many others. The olive growers are the first of these to get organized for business, and they will pack a small output this year. The rice growers have reorganized into a similar company, and engaged the California Fruit Distributors to market their crop. They have also forced the Oriental rice growers to join their marketing system in order to control the market for all. Poultry producers are organizing under the Market Director's influence. Lima bean growers have organized anew, with a controlling hand on the crop and prices. Prune and apricot growers are in a good way to be organized shortly after the end of the year; that movement having started definitely last spring.

The California Walnut Growers' Association is marketing 12,500 tons, one of its biggest crops, promptly, the quality being better than in recent years. No. 1's are selling at 15½ cents as against 13 2-5 cents last year.

The California Almonds Growers' Exchange, handling a light crop, set its own prices to secure prompt movement of the whole crop, and is succeeding remarkably in spite of more or less underhanded, unfair competition. The price of Nonpareils is 20½ cents as against 15 cents at the same time last year.

Rural Credit—the greatest cause of rejoicing—is treated elsewhere. All hail to the new agricultural year just beginning with joyous Thanksgiving for the one just past!



Head of the Herd—Palcines Ranch.

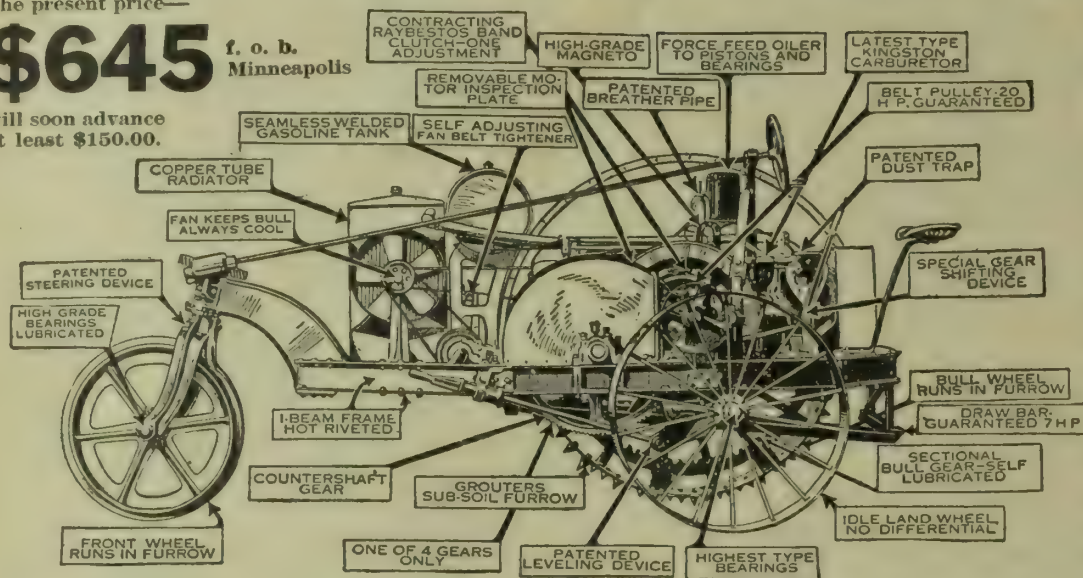
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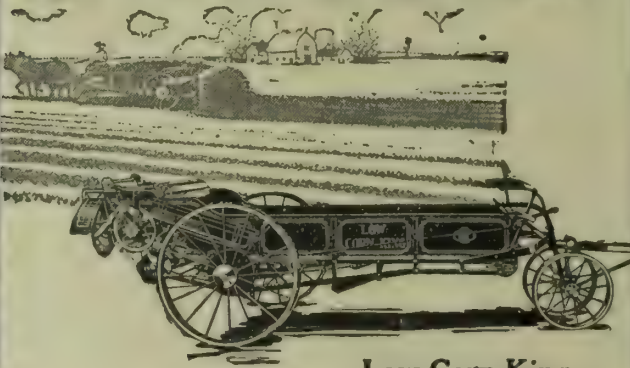
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SAN FRANCISCO

NOVEMBER 18, 1916.

LOS ANGELES

Farmers Organizing to Borrow Money.

Farmers All Over the State are Forming Temporary Organizations to be Ready to Make Loans for Productive Purposes under the Federal Farm Loan Act. This Tells How One Was Formed.

[Written for Pacific Rural Press.]

YOU can borrow money at 6 per cent or less interest under the Federal Farm Loan Act if you are a land-owning farmer; or if you want to use the money to finish paying for land in which you own 50 per cent interest, or on which its owner is willing to take part payment down and a second mortgage for the remainder.

As Dr. Elwood Mead says, wherever the use of additional money will increase production enough to pay the interest and a profit, the money should be borrowed. The merchant who does not borrow is soon out-distanced by his competitor—so it will be with the farmer. Borrowing for productive purposes is not a stigma; it is a sign of industry and up-to-date success.

But you can't borrow money now under the Rural Credits Law. The District Land Bank, from which you will borrow, will not be established until early in 1917; and probably will not do business until April 1. Nobody yet knows even in what States the twelve District Banks will be located. These will send blanks to groups of farmers for final organization, and will grant a charter to each group.

You can get ready for the bank, however, as has already been done in certain districts of San Joaquin, Kern, Glenn, Imperial, Madera, and San Bernardino counties, and probably others.

There, groups of at least 10 farmers each, wanting to borrow a total of at least \$20,000, have held meetings, elected temporary chairmen and secretary-treasurers, and told the latter how much money they want, for what purpose they intend to use it, what security they have, and what sized—equal annual or semi-annual—payments they want to make. These equal payments are so figured that the whole debt and interest will be paid off when the last one is made. It has been a suicidal policy in America for farmers to borrow money or contract to pay for farms when both the borrowers and lenders knew that the final payments could not be made on time, according to Dr. Mead.

The temporary organizations already formed are composed mainly of people who want to borrow from the Federal Land Bank to pay off such pre-existing debts and mortgages. In Imperial Valley, many have been paying 10 per cent interest. In San Joaquin county, they have been paying as much as 8 per cent. The Farm Loan Board investigations have shown that in the northern part of the United States, farmers have been paying as much as 5 per cent per month on first mortgages. It is the western and southern parts of the United States, however, that will benefit most.

Hearings have already been held by the Farm Loan Board in the North and West. They are now in the South. Wherever Farm Bureaus are in existence, they are organizing as far as will be possible until the final blanks shall be supplied by the District Land Bank.

First Organization.—The "North San Joaquin National Farm Loan Association" claims the distinction of being the first such temporary organization. S. A. Nesbit was the first man there to send to the Farm Loan Board at Washington for a copy of the Act and explanatory pamphlets. When he had studied them, he went about the country enthusing his neighbors. Then some of them advertised a meeting, October 16, at the Lavella schoolhouse. About 75 attended. Mr. Nesbit was elected temporary chairman and J. B. Jorz secretary. The pamphlets were read and discussed. A board of eight directors was elected—also a "loan board" of three men to appraise the security to be offered for loans. By-laws were not adopted because no formal suggestions for such have yet been made by the Federal Farm Loan Board. They adjourned to meet October 30. About 125 came this time, and the chairman called for information as to how many wanted to borrow money. They were backward about telling their business so publicly, so the secretary went down

among them quietly, and found folks that hoped to borrow \$115,000 total. Other applications for thousands of dollars have followed.

County or Local Organization?—Following the Farm Loan Board's suggestions for large local associations, Farm Adviser F. F. Lyons proposed the idea of a county unit. This was opposed by most of those present, on the ground that a county appraising committee could not be in close enough touch with local land values to give an intelligent appraisal unless they should spend all their time, especially at first, traveling about the county at great expense to the association.

It was also pointed out that the basis of this rural credits system is the personal acquaintance of members with each other in the local associations, for character will play a great part in determining the actual value of the security. And if a member defaults payment, his local association must help him over his hard luck or permit his property to be sold to repay the loan. If it doesn't bring that much, it will show lack of judgment in the appraising committee, for loans must not exceed half the value of land or one-fifth the value of insured buildings. Then the members of this association must contribute as much as necessary, not to exceed 10 per cent of what they have borrowed, to make up the loss which would otherwise have to be borne by the district bank.

The point was made at the meeting that a local association in the San Diego county valley, whose farms were washed away, would have to go bankrupt, because sale of the farms that were washed out probably would not satisfy the loans, even with the 10 per cent added from fellow-members. Then the bank would lose the balance. Yet, if all of San Diego county had been in the same association, the 10 per cent to be paid by solvent members would more than protect the bank. Therefore, the bank

could be more liberal in its loans to a large association than to a small one; and the bank appraiser could approve higher valuations of property, made by the local appraising committees.

This point lost its force in the North San Joaquin Valley, where such disaster is not considered possible. Probably the most potent objection to a county organization, rather than a number of locals, was that its headquarters would be at the county seat. Its members would go there to make payments, and would spend too much money while there, reducing the ability of home merchants to keep satisfactory stocks of goods. It was preferred to make the payments through a treasurer in a local town. This rather lost force, because a rural mail carrier will sell a money order to be mailed to Stockton at a cost of a few cents, and few people

would make a special trip there, taking a day's time and the cost of transportation, because their payments must be made there. It was also admitted that the local banks would be glad to receive the payments and transmit them free of charge to the county-organization treasurer at the county-seat. His location there would enable him to keep up-to-date information on the deeds involved in loans and the taxes, for he must see that taxes are paid, and that buildings used as security are kept insured. For the last named purpose, it is thought that most people would be glad to deposit their insurance policies with the treasurer, who would keep them in a fireproof safe, and be in better position to assure himself that premiums are paid up. The treasurers are expected to be paid. Half a dozen in a county would probably cost \$300 per month in salaries. An advantage of the county organization would be that one man would spend all of his time at it, and as Dr. Mead points out, there would be only one treasurer to educate to the multitude of details that must be mastered by every treasurer.

One Treasurer for All Locals in County.—However, since a single county-wide farm loan association seems improbable, this same unified service could be obtained for a large number of local organizations, as suggested by Mr. Jorz, by each of them electing as their treasurer the same man all the rest of them elect. A county organization could also hire a competent man to get abstracts of titles at a cost very much less than is now necessary, and as suggested by I. G. Brown, could arrange for their publication at a pro rata cost.

Details Yet to Be Decided.—There are a thousand questions of detail which only the Federal Loan Board can answer, and which they have not yet answered. Watch Pacific Rural Press for further news.



The Young Man and His Bride Can Now, Even with Limited Capital, Start Farming in a Comfortable Home, for He Can Borrow Money at Low Interest and Long Time, to Buy Livestock, Trees, Equipment, Etc.

Purebred Beef to the Front in California.

Beef growers are buying purebred bulls from outside the State; purebred livestock auctions and shows will shortly supplement the present constructive promotion of purebred beef-breeding in this State.

[Written for Pacific Rural Press.]

To those in a position to feel the pulse of the great livestock breeding industry, now in the making in California, it must be apparent that a silent but persistent tide of public approval has set in for the purebred beef animal.

Different in many respects from the rapid growth of some of our other livestock breeding endeavors of recent years, the business of breeding purebred beef animals has been in a smoldering stage. It is perhaps the one phase of livestock breeding in which we have been ultra conservative, inasmuch as it has not kept pace with the utility end of our meat-making industry. It is common knowledge that this situation is at the present writing reversed with some forms of animal breeding in the State. That of course is a separate matter; and yet it has a direct bearing on the revival of beef cattle breeding as it points to the errors of booms and boomsters.

Our Deficiency.—We have said that the business of breeding purebred beef cattle has not kept pace with the meat-making industry of the State. This statement may be proved to anyone's satisfaction by a survey of the supply and demand for bulls for range use in California.

Quoting from the latest figures of the U. S. Department of Agriculture and from the annual report of the California State Board of Agriculture, there were 1,554,000 head of cattle in California in 1915, other than dairy cattle. Of this number 576,909 were breeding cows; 218,480 were yearling heifers; 267,799 were heifer calves, and the balance were steers.

If the average number of cows served per bull be 30, the total number of bulls in annual service is over 19,000. Assuming that the average life of the range bull in service is three years, it would appear that our annual bull wants amount to about 6,500 head.

As against this demand, we are raising not to exceed 1500 purebred and registered bulls a year, of the two most popular breeds, Shorthorns and Herefords.

In view of the fact that it is quite generally thought among progressive cattle raisers and breeders that far too many scrub or grade bulls are used, the thought naturally occurs, "Does not the 1500 registered animals, or one-fourth to one-sixth of the total number used, supply the present demand?" Would not any renewed activity in breeding quickly flood the market with bulls?

These questions can best be answered by the records of State Veterinarian Chas. Keane, which take account of all animals brought into the State for breeding purposes and which show that for the year just ending, approximately 3000 beef bulls were shipped here from other States.

True, a great number of these imported bulls are unregistered and many of the registered ones would be more beneficial in the killing lot

than on the range. Also, the grades are bought at a lesser price than purebred breeders would care to sell for with present prices of foundation cattle. However, the material fact is, that 3000 range bulls are being brought into the State which should be grown here. It is this "out-of-State" buying which gives the greatest assurance of purebred breeding success at home, as it emphasizes the trend of range raisers toward better bulls. This is the fundamental reason for more breeding establishments.

Cattle Raisers Speak.—And lest this proof be not convincing, we have the more direct evidence, in the actual viewpoint of cattle raisers themselves, particularly those who are classed among the more progressive and successful.

The ideas of a few of these, re-

in the growing qualities of the higher priced calf, he finds, and for that reason he is an advocate and buyer of the best class of so-called purebred range bulls.

Take also the case of Mr. B., who has a reputation of being the most successful and prosperous cattle grower in his locality.

He also purchases both Herefords and Shorthorns and makes pilgrimages East for carload lots of registered bulls. His last shipments cost him \$200 per head plus expense of locating them. When pressed for his reason of such purchases he shows you the proof of the pudding in his steer weights which are uniformly higher than any other in the district and consequently more profitable.

Still another is Mr. C., who has imported two carloads of Shorthorn bulls in the past two seasons; the first being two-year-olds that averaged him over \$210 each landed; and the others, yearlings, which ranged close to \$150 besides their keep for a year previous to service age. In his own words, "never have our two-year-old steers weighed so

livestock show that incites most direct interest in and comment on purebred beef cattle. What we lack at present in this respect as much as the cattle, is a livestock show circuit, important enough in its scope to attract out-of-State herds as well as beef cattle interests generally. Such shows will undoubtedly be founded.

Purebred Auction Sales.—Next to shows, purebred auction sales are clearly favored among the breeding contingent as an avenue to create interest and enthusiasm. Here also, unless we sorely mistake the times after interviewing a great number of breeders, action will not be long delayed. In fact, it is not impossible that the sale plan may precede the enlarged show idea.

There are two reasons for this thought: (1) sales can be conducted without the mass of preliminary work required for show, and (2) present breeders do not wish to endorse boom methods of breed promotion, preferring to stabilize values through association or consignment sales, while they still have the power to do so.



Grand Champion Female Oregon State Fair, 1916, to be sold at Auction Dec. 7, 1916. Auction Sales and Shows Will Soon Be Demonstrating the Rising Tide of Sentiment for Purebred Beef.

cently given the writer, may be taken as an indication of the future; for they represent widely scattered territory.

The first, whom we shall call Mr. A., is a large buyer of bulls, having extensive cattle interests in the State. He uses purebred and registered Shorthorns and Herefords. Almost always, in recent years, he has been compelled to fill a large portion of his bull wants in the Middle West, despite the fact that he has purebred herds of his own. This year he has already purchased a carload in the East besides numerous purchases from California breeders. He informs us that all of his buying would have been done locally, had the supply been sufficient and more available.

The value of a bull, in his opinion, can be based solely on the calf crop and in no other way. By good management, he secures the service for 100 calves from each of his range bulls during their life time. If, as at present, he pays as high as \$250 for a registered bull his calves have cost him \$2.50 each for service fee. As compared with the calves from, say, a \$150 bull the former mentioned ones have cost him a dollar more than the latter. This difference in service fee is more than made up

heavy as since the infusion of the purebred blood; and our idea as to the relative value of purebred vs. grade has been materially strengthened in favor of the former." Numerous experiences of this kind might be related, all equally convincing, did space allow.

Promotion Probabilities.—It is characteristic of the livestock breeding industry that all great movements run in underground channels, long before they appear on the surface. And so it is with beef cattle breeding in California at this writing; there is a surging under-current of optimism and progressivism among breeders, which, as one man has said, "you can feel in the atmosphere, based on a dollar and cents standard."

As a result of this confident feeling, new herds are being founded; and to keep pace with the times, established breeders are taking a long pull on check books to strengthen their herds. If we mistake not, the result of this will bloom forth at the livestock shows in the very near future.

Livestock Shows.—The full significance of the present building-up process will not perhaps be clearly demonstrated till the show-ring era begins anew, for it is usually the

BEETS AND BEET PULP FOR DAIRY COWS.

To the Editor: We have just begun to feed some stock beets to cows, and wish to know how many pounds to feed each cow per day, "three times" with alfalfa hay; also the feeding value of pounds of beets as per pounds of hay.—W. C. McC., Lodi.

[Answered by Prof. F. W. Woll, Univ. Farm, Davis, Cal.]

Stock beets may be fed to dairy cows in very large quantities, say 100 pounds per head daily or even more, if desired. Many Eastern farmers are feeding beets that heavily to cows on official tests. Danish farmers have also fed large amounts of beets to dairy cows during late years. The cost of growing the beets in comparison with other farm crops and the quantities on hand, are the main factors that will decide how heavily to feed them. It is very likely that McC. will find that it will cost more to raise and feed a ton of dry matter in the form of beets than in crops like Indian corn or grain sorghums, which may be conveniently and profitably made into silage. Root crops have no special advantage over silage from standard field crops as feeds for dairy cows. Both are most excellent feeds for farm stock, especially for cattle and sheep.

By feeding a ration of about 20 pounds of hay and 50 pounds beets per head daily, the cows will receive a sufficient supply of nutrients for the production of a fair mess of milk, say 2½ to 3 gallons per day. In the case of heavier-producing cows, an allowance of grain will be advisable in addition to the beets and hay. One ton of alfalfa hay may be considered of similar value for feeding dairy cows as about six tons of stock beets.

The Imperial Valley Livestock Fair will be held in El Centro and continue for a period of five days, according to the announcement of its promoters, who are actively at work raising funds and perfecting details.

One of the State's largest silo manufacturers estimates that there have been fully 300 silos erected in California during the past year.

California Nurserymen of the First Decade

Sixteenth of a Series of Sketches in Which the Editor Presents Suggestions, Drawn from Long Experience, of What Californians Have Done and May Do for the Advancement of California Agriculture.

One of the notable things about the beginnings of American agriculture in California was the quick uprising and rapid development of what is now commonly called "the nursery business." The word "nursery" designates the space, with promising equipment and environment, for the upbringing of the young, either of plants or animals. The phrase "the nursery business" indicates an industry—the commercial growth and distribution of plants. It is interesting to note that California had both nurseries and nursery businesses from the very beginning: that even when nearly all who came in the gold-rush of 1849-50, either went to mining gravel or to digging into each other with various ventures, there were a few who devoted their time and money to the horticultural arts and found great achievement and satisfaction therein. The results which they attained soon attracted attention of others and within three or four years, the plant collections and establishments for plant propagation in California were, in size and number, such as no other American State has ever possessed in its youth. The reasons for this rapid development of appreciation and demand for plants are to be found in two directions, neither of which need be pursued beyond citation: first the welcoming climatic conditions which American enterprise never possessed before and was delighted to prove out by plant tests; second, the purchasing power of gold which was abundantly in nearly every one's hands in the beginning. There never was a young state with such forceful incentives to buy plants and so much money to buy with. Emotions and sentiments were also involved, of course, and the early Californians were more moved by them than the founders of some other states, perhaps, but it was the call of the climate and the gleam of the gold which impelled California horticulture to shoot from the starting-post so like a thoroughbred.

A State of Preparedness.—It is our purpose to present what seem to us unique and interesting facts about the men who ministered to this building in California of the superstructure of American horticulture upon the excellent foundation laid by our Spanish predecessors in the justly celebrated mission gardens of the Franciscan fathers. American horticultural builders could not possibly have achieved what they did in the first decade without such clear demonstrations of climatic capacity as the missions afforded. It is true that the padres had not large lists of exotics but every one they had spoke truly for the class of plants to which it belonged and therefore most of the American dreams of horticultural expansion based on mission achievements came true.

But there was also an American condition of preparedness which contributed grandly to California's quick start and wonderful early attainment. One of the moving forces in California's early development

both in fruit and ornamental lines was the nursery establishment of Ellwanger & Barry of Rochester, New York. Patrick Barry of that firm wrote a book in the '40s which was fundamental in suggesting the style of California fruit trees. Downing and Thomas also wrote books in that decade, but they seemed inclined largely to the laissez-faire method of training fruit trees, but Barry expounded the European systems of cultural training which early Californians adapted to large scale operations in this State by their own original modifications. But I wish to take from Barry not training systems but a personal observation of the expansion of eastern nursery industry during the decade preceding California's beginning.

In 1860 there was a course of lectures on agricultural science at Yale College and Mr. Barry was one of the speakers. He said that in 1840 two or three small nurseries near each of the larger eastern cities, occupying in all not more than 500 acres of land, and a few other nurseries occupying perhaps one acre each, supplied the plant and tree demand of the whole United States and Canada. Twenty years later there were over a thousand nurseries in the country, and in his county alone there were three or four thousand acres in nursery, selling annually half a million dollars' worth of plants and trees. It was this eastern development in the commercial handling of plants and trees which made a large contribution to California's start, for it gathered all the then known plants, the hardy in the open air, the tender under glass, and had them available for bulk movement to California and the California demand found the munitions ready.

Foreign countries contributed also, for plants came from everywhere—and men came also, chiefly young men trained abroad in plant handling, who soon saw that most of the plants grown under glass in wintry climates needed only sky-covering in California. The start in this State in 1850 was therefore deeply indebted to the world's awakening to desirability in new and better plants during the preceding decade.

How California Welcomed the Nurseryman.—The California pioneers had a high appreciation of the functions of the nurseryman and his relations to the upbuilding of the State in the making of beautiful homes and in the advancement of moral, esthetic and patriotic standards in the citizenship as well as in promoting industry.

Therefore the pioneers began in 1854, when the State Agricultural Society was organized by statute, to send out visiting committees to the nursery establishments to make public reports upon their conditions and contents and to award State premiums to the most worthy of them. It meant a great deal to California progress that such an attitude was assumed so early. It was an acknowledgment of obligation to plant introducers and propagators which

has not always been well remembered in recent years. It was surely encouraging and stimulating to industry in plant propagation and distribution.

From these official reports we learn that as early as 1856 there were nurseries of considerable size in San Francisco owned by H. A. Sontag & Co., James O'Donnell, W. C. Walker, and R. W. Washburn, which are credited with area, equipment, and plant collections equal if not superior to many similar establishments in the Eastern States or in Europe at that day. They all had good greenhouses and their sales of potted plants and cut flowers, the later for their weight in gold slugs probably, during the flush times of the metropolis, are now almost incredible. Away from San Francisco there were many nurseries in 1856-7 chiefly occupied in growing fruit trees to satisfy the first great passion for fruit planting. In Oakland James Hutchison had fruits and flowering plants and George Lee had "the largest variety and most luxuriant growth of tropical fruits in the State." At Alameda, Wilson Flint had 329,000 fruit trees of 150 varieties and received the first premium for the best nursery in the State. At Alameda also was A. H. Meyers with 50,000 trees and the first seedling peach to receive a name, which is now forgotten. At San Lorenzo, John Lewelling had 52,000 trees and at Mission San Jose as many more. Around San Jose there were many nurseries. L. Prevost had 72,000 fruit trees, and many ornamentals including 17,000 roses in 80 varieties; A. Delmas had 10,000 European grape vines in 80 varieties and 300 basket willows, and William Lent also had foreign grapes in variety. L. E. Gould and J. Morse had small nurseries. B. S. Fox had 42,000 fruit trees and took the first prize for nurseries in 1858. Smith & Winchell had 123,000 fruit trees and took the first prize in 1856. Capt. Aram also had a "well known nursery" near San Jose, and Sanderson, Lowe, Daniels, Pellier, Case and O'Donnell were other nurserymen in the San Jose district. At Sacramento were the "Smiths Gardens" of A. P. Smith, whose large operations will be mentioned presently. Near Marysville were the New England Nurseries of George H. Beach, who grew large stocks of fruits and ornamentals, including 95,000 fruit trees and grape vines, and near Napa S. & W. N. Thompson had 50,000 trees and grape vines, and near Napa Angeles, which then included most of the settled area of Southern California, there was much interest in fruit planting to secure the high prices prevailing in San Francisco and many undertook nursery work. William Wolfskill had in 1856, 9000 orange and 6000 lemon and lime trees. Dr. S. W. Halsee had 14,000 citrus trees, which received a diploma as "the best the committee had seen"; H. C. Cardwell had 15,000 trees and shrubs on the "best land the committee had seen for nursery purposes"; William Stockton (near San Gabriel) had 10,000 budded trees and W. B. Osborne had 20 rose bushes of 118 varieties. Dr. T. J. White had 300 vines of 47 varieties imported from France; also sapota, aguacate and mango brought from Nicaragua and 8,000 citrus trees in boxes. S. Harbison near

Sacramento had a "timber nursery" which received a premium in 1858 for shade and ornamental trees.

Thus within the first decade California had nearly forty nurseries of professional standing, with an unknown number who grew trees for their own planting and sold some—which resulted in the great sensation of the period.

First Nurserymen's Association.—The disposition of planters to grow their own trees and to sell "left-overs" to others has arisen whenever unusual interest in fruit planting has prevailed in California. "Everyman his own nurseryman" was a slogan against which the pioneer professionals had to contend, and war broke out in 1858 when the first recorded association of California nurserymen was formed. The convention was held in San Francisco in November of that year and its purpose was "to regulate prices and sale of trees." When duly organized the association made this declaration:

"For years a base imposition has been practiced upon purchasers of fruit trees by non-professional nurserymen who go about the country picking up small refuse stock here and there, and, after labeling the trees to suit supposed demand for certain varieties, load them into wagons and then for weeks trundle them over the country. No reliance can be placed upon trees thus hawked about—either on the chance of living or on the varieties secured."

Thus California nurserymen declared war upon "tree-peddlers" nearly 60 years ago. The way they proposed to protect the public was as follows:

"We propose to sell trees only from our nursery grounds, digging and packing no faster than ordered. We have assembled in convention to adopt such a reduced scale of prices as will enable all purchasers to obtain directly from long established nurseries, genuine and reliable trees and vines at less cost than they have hitherto been induced to pay for those of unknown and worthless character."

These declarations were signed by nine nursery firms engaged in the production of fruit trees, viz.: A. P. Smith, Sacramento; J. Aram & Co., San Jose; J. Lewelling, San Lorenzo; L. A. Gould, Santa Clara; China Smith and B. S. Fox & Co., San Jose; R. W. Washburn, San Francisco; G. H. Beach, Marysville; A. Lewelling & Co., Fruitvale.

The scale of prices which would knock out the tree peddlers is very interesting now, viz.: 1 yr. old apple trees 35 to 50c each, 2 yrs. old 62c to \$1; pear, nectarine, apricot and cherry trees, 1 yr. old .75 to \$1, 2 yrs. old \$1 to \$2; plum trees 1 yr. old .50 to \$1, 2 yrs. old \$1 to \$2; peach trees, 1 yr. old .37 to \$1, 2 yrs. old \$1 to \$1.50; almonds, seedling, .50 to \$1, grafted \$1 to \$2; figs, California \$1 to \$1.50, foreign \$2 to \$3; walnut 1 yr. old .50 to \$1, 2 yrs. old \$1 to \$1.50. It must be remembered that these are all prices for single trees: no prices by 100 or 1000 are quoted and there is no intimation of reduction in price for quantity orders. Apple and peach scions are \$10 per M; pear, plum and cherry scions, \$20 per M.

These are the prices which were (Continued on page 545.)

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EDITORIALS

JOY WITH A REBATE.

WE ARE printing this week a forty-page issue, the largest paper ever undertaken during the forty-six years of continuous performance by the Pacific Rural Press. It is two and a half times as large as the normal size with which the journal began, and only rarely exceeded during its first forty years. During the last six years its size has averaged at least fifty per cent greater than this old normal, and it has made frequent spurts to one hundred per cent increase. This week's leap to one hundred and fifty per cent increase is our record, and we hope the reader may find interest and satisfaction in it.

We frankly confess that we lose much of the joy with which we attain this eminence when we reach out to enfold our offspring in fatherly embrace, for there keeps ringing in our ear Kipling's line—"An image made of mud, which they call the great god Budd." The paper, which the war and other wrongs, perhaps, force us to use, is a beam in our eyes and an iron in our journalistic souls. Readers are very patient about it, and we accept their content as a manifestation of sympathy—for we like it even less than they do. Perhaps we can claim to suffer more than they do, for they can turn from it, after a day or an evening or two, to sight of the sun and the green fields, which the war does not obscure, while we have to work day after day with the sad sight of our beloved offspring clad like a tramp and bleary-eyed as a sot, and can discern no chance of immediate reformation.

* * *

A PROBLEM IN ECONOMICS.

BUT, the reader may say, if you feel so badly about it, why do you not buy decent clothes for your bantling? Perhaps we ought to be frank in our answer. During the first decade of this journal, subscribers paid \$4 per year; during the next decade \$3; during the next two decades and more, \$2; during the last two years \$1 per year. It has been the ambition of all of our publishers to serve the farming public of California at the least possible cost to it, and the present publisher dared a figure below all his predecessors, even after the war, which now humiliates us, had begun. It was a popular stroke, for our circulation is now perhaps five times as great as five years ago and our publication proportionately advanced in general esteem and influence. All this, of course, is to the good, but it imposes limitations nevertheless. If we had our circulation of other days, with the rate per which then pertained, we might be printing on hand-finished India paper, from which the type would shine clear-cut as though from the chisel of Phidias, and slippery half-tones show forth the "atmosphere" of the old masters. But, alas! we have made our bed and must lie in it. It is ostensibly a "dollar bed," because that is what the subscriber now pays, but not enough of that dollar remains to us to pay for a perch in a hobo's roosting place. It is this way: For the subscriber's dollar we send him each year 69 cents worth of the paper we are now using, and we pay

11½ cents postage to get this paper delivered to him—which leaves us 9½ cents to pay for editing, printing, mailing, etc., for which it only pays a fraction of one of these items. If we should return to the paper formerly used it would cost \$1.15 for the paper and postage alone. And if we should do that we would be in the boat with the far-seeing merchant who conceived the idea that if he sold everything below cost he would soon make up for it by the increased business which would come to him!

But we are not trying to drag the reader into the gloom of the publisher's problem. If he sends in his dollar he still leaves us a little margin to go on—providing he does not delay and oblige us to use a few postage stamps in reminding him of his delinquency, for these would soon destroy the margin. And we are writing all this simply to explain to the reader why we are sending him the Pacific Rural Press as it now appears. We do not blame him for not liking it; we do not like it ourselves.

* * *

SHIFTY WEATHER PROPHETS.

WE MUST remind our press brethren of the daily habit that their special leased prophets are not playing the weather game according to Hoyle. They promised the winter would be warm, and we accepted that prophecy, knowing that if it was warm it would be wet, but now they are playing the cold cards, hoping to justify their dismal foreboding of drouth by discarding their temperature suit. These prophets certainly betray human traits, according to the poet who sings:

As a rule, man's a fool:
When it's dry he wants it not
When it's cold he wants it hot—
Never liking what he's got,
Always wanting what he's not.
As a rule, man's a fool.

But dry and cool it is: cool as never before in November; not only in California, but throughout the country. November records are so low that even now, a week after election, all do not agree which presidential candidate was worse frost-bitten.

As for the cold itself, we have to write too soon to note the end, though we have an idea that Tuesday morning held the worst of it, as shown by the adjacent summary by the Weather Bureau. Naturally, the mercury fell lowest where there was least to be hurt; orderly planting has for years had due regard for that. Naturally, too, the mercury fell least at points where the official conscience is somewhat soothed by steam-heated skyscrapers. As the great interior cold wave, which brought to the Rocky Mountain region as much below zero as it left our coldest places above it, has gone eastward after brushing us only with its feather edge, we may expect an indraft of something warmer and possibly wetter also. If wetter, it will be warmer, and both are desirable to enable all to go forward confidently into the good crop year which we have every reason to expect.

* * *

THE VOICE OF THE WEST.

IT WILL probably be for the good of the whole country to know that it can elect a president without the consent of the northeast corner of it. It will help the far-Easterner to realize that west of New York the country is not all provinces. It is true that the center of population is still in Indiana, and did not move far westward during the last census decade, but the self-consciousness and influence of the West is rising faster than the population-center moves toward it. The greater this rise and influence in the mind of the country, the better our financial condition will be. We shall count, as more "worth while," and this is the real basis of financial condition in a large way. In the face of such public recognition of worth and importance, less discrimination will be practiced against us. It is possible that this newer and better idea of the West will manifest itself more sharply in the interest rate than in any other way, and this will be the best way of all for the development of the West into still greater importance and influence. The discrimination against us in the cost of farm mortgages is shown by the

report of the Association of Life Insurance Presidents, covering the operations of 148 companies to the close of 1914. The following figures are given: The amount loaned on farm mortgages by these life insurance companies is, in New England, \$105,000, averaging 5 per cent; in the middle Atlantic States \$827,000, at 5.8 per cent; central northern States \$117,000,000, at 5.2 per cent; south Atlantic States \$20,000,000, at 6 per cent; gulf and Mississippi Valley States \$21,000,000, at 5.9 per cent; southwestern \$187,200,000, at 5.7 per cent; northwestern \$284,100,000, at 5.4 per cent; and Pacific States \$16,000,000, at an average of 7 per cent. Commenting on these figures, Orange Judd Farmer says:

The borrowing farmers, whose notes and mortgages to insurance companies net the lenders an average of 5½ per cent, also have to pay all commissions and other expenses. It is probable, therefore, that the vast amount of mortgages now held by life insurance companies represents a cost to borrowers equivalent to an average of 7 to 8 per cent per annum. Most of these mortgages run for only five years, when they must be paid, or renewed, with all the expenses incident to such renewal.

The Federal Farm Loan law, which the election of President Wilson makes sure of favoring administration, provides that the interest rate shall nowhere exceed six per cent, and there shall be no commission, fees, or expenses beyond the interest payments. What the actual interest rate will be in this district is not yet known, but it cannot be more than stated. On the basis of the insurance companies' loans in this district, as noted above, it must be a reduction of 25 per cent in interest cost, and may be more than that. If the law works well and buyers call for the bonds, much of this 8 per cent mortgage paper will be displaced—if the present lenders allow it to be done. This they will not do; they will be rather in competition with the federal loans, and will do what is necessary to hold their business. So will the bank and private lenders, who hold probably twice as much farm mortgage money as the insurance companies do. They will all be glad to renew much of their investments at a rate which will compete with rural credit rates. This is no prophecy; it is simply what these parties are trying to do already. This will have a tendency to equalize farm loan interest rates in all parts of the country, and it should be practically realized. As the discrimination has always increased westward, and as we have the worst westward of the whole country, it is greatly to our advantage to have all possible demonstrations that we are worth while.

* * *

STILL LOOK FOR SHARKS!

THINKING of rural credit development, there is still occasion to warn people against sharks. It seems hard for people to realize that movements toward organization for rural credit must not be accompanied by any money payments. Borrowers are required to take 5 per cent of their granted loan, in stock, but no one is authorized to collect that in advance; it will be taken out of the loan when made and not received beforehand. Absolutely all that borrowers can now do is to get together and get ready, and that should cost nothing but time and gasoline. There is provision that "joint stock land banks" may be organized under the federal farm loan act, but not one has been organized yet, nor can they be to any advantage until the federal loan board has adopted its system, under which in some regards all such banks must operate. It is in this line that sharks seem to have bitten hardest. In Alabama such a game was played, and \$30,000 was paid by subscribers for shares, nearly all of which went to the promoters. And now the "directors," which they chose from the subscribers, are probably liable to their shareholders for all the money which the sharpers got away with. Do not have anything to do with any joint stock land bank, unless you are a banker, and then you can look out for yourself and should know whether it is any advantage to you. Farmers wishing to borrow should deal only with a "farm loan association," which is not authorized to sell any stock or make any collections until advised by a district land bank, of which none are yet organized, nor can they be.

A LABOR PARADISE.

CALIFORNIA does surely possess the admirable feline attribute of always landing on her feet. Whether there be cataclysmic movements of the earth-crust or of the national political conscience, California quietly and quickly steadies and readjusts herself. For instance, California last week fell from the grace of big business by repudiating Hughes, but, by the same sign, rose to a labor-heaven by accepting Wilson. As we write on Tuesday there comes this, by telegraph from Baltimore:

"Oh, you California!" is the official yell of the annual convention of the American Federation of Labor, now in session. Every delegate, from President Samuel Gompers down to the rawest recruit in the ranks, gives California the credit for the re-election of Wilson. The official convention yell rocks the theater whenever a Californian takes the floor. There is nothing too good for the men and women from California. They are the whole thing in the convention. The most popular song in the United States today is "I Love You, California!" President Gompers and every speaker at the opening session of the convention handed choice bouquets to California for its support of President Wilson.

We can hardly tell what effect this new-born

popularity may have on our regular work of grafting on big business magnates, but we must admonish Mr. Gompers and his associates that, as they have started this kind of publicity, California will expect them to come through on the regular line. Labor magnates must park their special cars, motor to their castles, and subscribe to this journal to learn how to equip their country places. We must especially suggest to our great and good friend, President Gompers, whom we consider the foxiest big business magnate on this continent, that he must park his car at Santa Barbara, build his villa on the charming Riviera Heights, where from mountain-top sunrise to ocean-bed sunset his gleaming watch-seals may flash defiance through the plate-glass of President Ripley on the plain below. How California will respond to these new tokens of admiration we cannot surely tell, but we know this: she will not sit for courting in a hotel parlor. You must buy land and build mansions, keep a battery of motors, and all that. We trust you, Mr. Gompers, to see that the labor magnates play the game aright, and do not allow themselves to be outclassed. "The king is dead; long live the king!"

By
the Editor

QUERIES AND REPLIES

Inquirers Must
Give Full Name
and Address.

Weevils and Beans.

To the Editor: Kindly inform me as to what treatment to give beans to keep the weevil out of them? I have beans of my own raising, which I wish to keep over until next year, for seed.—J. B. K., Denair.

To the Editor: What can I do to keep the weevils out of our beans when they are gathered and sacked?—E. C., Yucaipa.

We have had several columns on this subject during the last year and we must suggest to readers the desirability of filing their papers and using the indexes which are printed at the end of each six-months' volume.

The weevil makes its first attack on the bean when it is green in the pod and there is therefore a chance that you may already have the weevils nicely sacked up in the beans. If this is the case, they can be killed by heating the beans up to 130 degrees with a good thermometer so as to be sure to get heat enough to kill the weevils and not enough to kill the beans. Or you can kill the pests by putting the beans in a barrel and placing on top of them a saucer half full of carbon bisulphide—covering the barrel and leaving the dose to vaporize. Do not go near it with a light or you will blow your whiskers off and may set fire to the house. If you have no weevils already in the beans you can protect them against later invasion by storing in a perfectly clean place where no beans or peas have been kept before. If you have to use an old store room, burn sulphur in it just as you would in a sulphur box in fruit drying and then whitewash thoroughly, filling all the cracks with the whitewash.

Sunburned Apricots.

To the Editor: I have some young apricot trees that are badly gummed—mostly on south side. I would like to know cause, cure and preventive.—G. R., Modesto.

You have probably neglected to protect the bark against sunburn on the south and southwest sides. If you find the bark brown or black down to the wood, remove such dead bark to a clean-cut live bark at the edges and cover the whole trunk with whitewash. If the bark around the gumming is not discolored underneath but shows life below, do not remove it but whitewash all over and let it go at that. All newly planted trees should be covered with tree protectors or strips of burlap wound around or whitewashed.

No Long-Pruned Peaches.

To the Editor: What varieties of peaches should be pruned long to get a crop, and which are the fruit buds?—E. M. L., Los Molinos.

We do not know which peaches universally require longer pruning than others. Probably all peaches may require less shortening in some localities. Look at the new wood of the bearing

peach tree and you will soon see the buds, usually three at a place—the bloom bud between two sharper leaf buds. Leaf buds are found singly on young trees and farther out on the new wood of bearing trees. Longer or shorter cutting of varieties begins with careful observation of the buds and afterward comes to be known as more or less of a rule in pruning varieties in localities, according to their local bearing habits.

Applying Superphosphate.

To the Editor: I notice in the issue of Oct. 28 an article on superphosphates for alfalfa. What is the cost of that fertilizer? I am planning to plant corn in the spring—can I sow the fertilizer onto the ground this winter and plow it under, or would it do as well or better to sow it in the spring at the time of the last plowing before planting?—E. H. S., Sisquoc.

To ascertain prices inquiry should be addressed to manufacturers advertising in our columns. Superphosphate is readily soluble and should be applied near the time when the plant is active to use it. If used for a winter-grower it should be applied in the late fall. For corn, which is a summer grower, application should be made in the spring while there are still likely to be showers enough to dissolve and distribute it. The last plowing which would do for that should not be delayed too late or the land will hardly be brought into good shape. Get the land in shape and then work lightly when the safe date for corn planting comes in your locality.

Pecans and Chestnuts.

To the Editor: I have a mountain ranch, altitude 2300 ft., average amount of frost, heavy black loam. Will pecans and chestnuts be good nuts to raise? Is there any profit in them?—E. G., San Jacinto.

If you have a moist bottom at that elevation it is possible pecans would succeed. Dry mountain land is not suited to them. Such land would be more likely to suit chestnuts, but nothing but actual trial would demonstrate their behavior. Both nuts would be profitable if you can get them.

Planting Hickory Nuts.

To the Editor: I have received from Maryland some hickory nuts, which I wish to plant as an experiment in my yard at San Mateo. Please give me information as to the best method of planting them, and anything else you think useful in making this experiment.—J. T. H., San Francisco.

Dig up the ground deeply in places where you wish the trees to grow, and put in about five nuts a few inches apart in a place—pressing the soil firmly around the base of each nut and covering with about an inch of fine soil above the points of the nuts, leaving this covering rather loose. Then cover each place with a litter of rotten straw or old leaves, an inch or two thick, to keep the ground

from sun-baking and rain-tamping. If you get several to start in a place, transplant all but one after the leaves fall at the close of the next year. The hickory is usually a poor, slow grower in this State. The pecan makes a much better tree, but does not ripen nuts in your section.

Peas and Oats for Forage.

To the Editor: Referring to the article in your issue of Oct. 28 by S. F. Bonner, will you kindly advise whether, in your opinion, it would be practical to follow his plan of sowing a mixture of red oats and Niles peas in November in this section where climatic conditions are probably different than in Butte county?—K. M., Willits.

Both peas and oats do exceptionally well in your part of the State, but satisfactory growth in the early winter is not as sure as in the interior valley. If the particular land you have in mind is subject to hard freezing or to be full of cold water during December and January, the peas will be very slow even if they keep at it. On warm land which is well drained and usually out of the heaviest freezing, you ought to get a large growth. It is a local question. If you are new to the locality ask some older resident how peas behave on land like yours during the heaviest part of the winter.

Botany of Buhac Plant.

To the Editor: Will you kindly state which is the correct name: "pyrethrum cinerariae folium," "chrysanthemum cinerariae folium," or "buhac"? Is this plant found in abundance in this State or anywhere in the United States? Is there any other use for it than making insecticide?—K. D., San Francisco.

Botanically the plant is a chrysanthemum. "Pyrethrum" is a name largely used by florists but is not botanically correct. "Buhac" is the trade name of the insect powder made from the plant and was invented by G. N. Milco of Stockton. Mr. Milco was a Dalmatian and he brought the plant from his native country to establish an industry here. The plant does not grow wild in California nor elsewhere in the United States, except as it may have escaped from cultivation. So far as we know, this species has no economic uses except as an insecticide.

Pruning Prunes.

To the Editor: Please advise me how to prune three-year-old prune trees. Would you advise topping or cutting back, and if so, about how much?—M. A. H., Slough House.

If the trees were properly cut back after planting and have been short-pruned for two winters and have now a good low head and enough main branches we would not shorten the leaders, but would remove excess branches, such as are crossing, going in wrong directions, etc. If the trees have not been properly shaped and not sufficiently branched from low points, we should cut back into the old wood if necessary to get such branching. This is supposing you have the French prune.

Imperial on Almond.

To the Editor: Kindly inform me if Imperial prunes will bear and make good trees if budded on almond root.—J. G., Guinda.

They are offered on almond root by commercial propagators and, so far as we now know, are held to be satisfactory.

Dahlias from Cuttings.

To the Editor: Can dahlias be grown from cuttings?—D., Conejo.

Yes, but it is not counted easy nor is it much practiced because division of tubers is so simple. Cuttings made of the new shoots from the tuber, taken off as soon as they have made a few leaves and put in sand, with proper moisture and heat, may be rooted quite successfully.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., November 14, 1916.

STATIONS	Past Week	Rainfall Data		Temperature Data	
		Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka	00	3.47	5.87	56	34
Red Bluff	00	3.63	3.57	72	32
Sacramento	00	1.08	2.10	68	32
San Francisco	00	2.78	2.33	72	44
San Jose	00	1.99	1.76	74	28
Fresno	00	1.88	1.31	68	32
Independence	00	1.13	1.20	70	..
San Luis Obispo	00	4.14	2.28	80	32
Los Angeles	00	3.56	1.28	82	44
San Diego	00	1.19	.83	74	40

Growing Oranges for Pleasure and Profit.

[Written for Pacific Rural Press by A. H. Sanborn, C. E.]

Reared in the bleak environment of New England, and having read much of the allurements of California and its rich crops of oranges, lemons and other subtropical fruits, I early became intensely interested in the unique horticulture of this State, and resolved in time to try my hand.

It was not, however, until the spring of 1904, that I found any hope of realizing the romantic dreams of my boyhood. I had then obtained a foothold in San Francisco and accumulated a little surplus cash, and I began to seriously consider the experiment of starting my orange orchard and bringing it to fruition. In casting around for an eligible location, I considered carefully the factors of climate, soil, water, and transportation; also the questions of packing and of selling facilities. It was no easy task to find a location which combined all these desirable essentials. However, I finally decided on a 10-acre piece of land situated about four miles north of Lindsay, in Tulare county, just on the eastern edge of the San Joaquin valley, where the foothills of the Sierra Nevadas begin to rise abruptly from the flat floor of the valley.

Knowing little or nothing about the practical work of growing oranges when I began operations, I had it all to learn. Fortune favors the innocent sometimes in a most surprising way, and she smiled kindly when she led me to the location described. I put in a good part of the time that could be spared from a busy professional life in studying out the various details of citrus culture, and tackled the problem of realizing something more than the mere cost of production, for I was beginning to learn, among other things, that "all is not gold that glitters," even in the orange industry. When Horace Greeley wrote his celebrated book on "What I Know About Farming," he was raising cabbages, and it is said by his friendly critics that these cabbages cost him about \$1.00 a head. I had no desire to follow in Greeley's footsteps, and to duplicate his financial performances.

My guide in the beginnings of this work was Prof. Wickson's "California Fruits and How to Grow Them," which helped me much, though I by no means confined my study to this book. But with all my garnered wisdom and conservative calculation, the preliminaries of nursery-stock buying, planting, and subsequent items of irrigation, cultivation, pruning, fertilization, all cost me more than had been figured on. But the ordeal was weathered through and at the end of the fourth year I had my first crop of oranges to dispose of. I settled the marketing question by joining the Lindsay Fruit Association, a branch of the California Fruit Growers' Exchange.

The deeper I got into the enterprise, more and more was the fact forced upon me that the successful citriculturist requires a deal of experience to produce crops satisfactory in quality and profitable in quantity, and that the expense account keeps even pace with the crop increase. This year, the twelfth of

my experiment, I had for the first time to fumigate my trees with cyanide for scale. The fumigation of the 1,000 trees on the 10-acre tract cost me 30 cents apiece, or a total of \$300 for the entire work.

To get satisfactory results, water and fertilizer must be supplied very lavishly. Incidentally I may state that I have found the green manure crop more economical than the commercial fertilizer. If any one has the impression that growing oranges is an easy and inexpensive pastime, he will be quickly disillusionized if he undertakes the job in real earnest. I have observed that the orange

I am quite satisfied financially and otherwise. It has been educative, and created a new interest in life. By reference to the diagram which is published herewith, the reader will see that at the present time I have received in returns from the sale of my crops all the money that I have expended for the orchard, both the initial investment and the running expenditures; and when I have marketed this season's crop, I expect to be a little ahead and have my orchard clear.

The Diagram.—A careful study of the table will show the first cost of the land, with water ready to use and the trees set out. It also shows the annual cost of up-keep thereafter, the progressive income

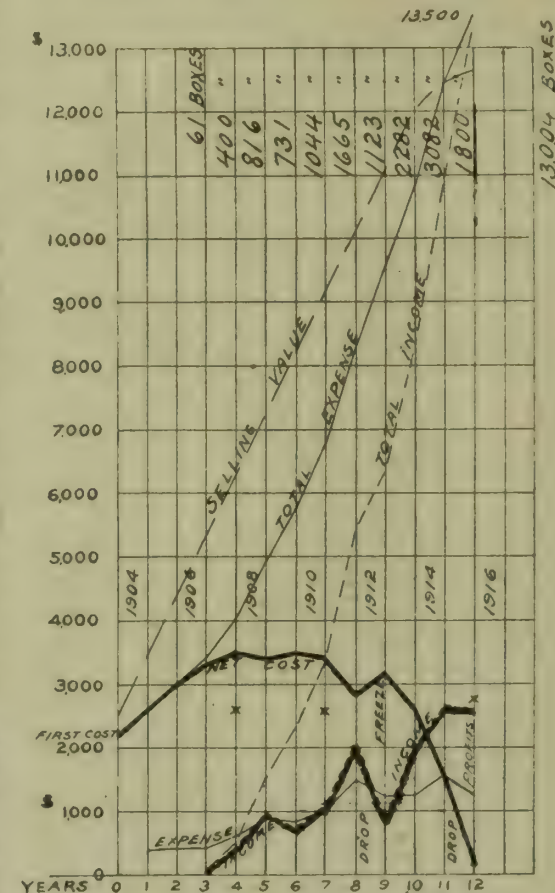


Diagram Showing Cost, Expenses, Income, Selling Value, and Profits.

grower on the ground works very hard for his money, and that only the wide-awake and active keep ahead of the game. Not being a resident of the county where my grove is located, I go back and forth about three times a year. In doing so I estimate that I have travelled about 18,000 miles since my orchard was first established. While I have not realized to the full all that I had hoped when I went into this venture,

end of the seventh year, the crops began to pay a net profit. For the past three years this profit has equaled the entire cost, so that at this writing I feel that I have a 12-year-old orange grove of 1,000 trees, worth at a low valuation \$7000, which has really cost me nothing but the interest on \$3,500 for 12 years, which at 6 per cent would be \$2,520, showing a profit of \$4,480 over and above the amount invested.



View of Orchard Showing Rank Growth of Green Stuff Before Plowing Under.

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The State Fruit Growers' Convention.

[Notes and Extracts from Convention Addresses.]

Note: Our report of the State Fruit Growers' Convention at Napa Nov. 13-17 is not complete at time of going to press and will be given fully next week.

State Horticultural Commissioner.

In the opening address of the Convention, State Horticultural Commissioner G. H. Hecke, having been only five weeks in office, but having been a growing force in California horticulture since 1892, suggested some of the policies in which he hopes for the support of the State's fruit growing and marketing interests. After paying tribute to the U. S. Department of Agriculture and the University of California, he says, "I shall not fail to preserve all the advance moves inaugurated by Mr. Cooper, Mr. Jeffrey, and Dr. Cook . . . and to proceed with such additional constructive work as may meet your approval." In "the vital necessity of protecting the horticultural interests of California by quarantine," he hopes for funds adequate to protect our fruits from destruction by foreign pests, whatever the reasonable cost.

"Legislative changes are suggested by your committee to bring about closer co-operation between the State and County Horticultural Commissioners. . . . So long as there exist as many different systems as there are counties, results will be far from satisfactory.

"For the purpose of bringing about closer co-operation in county quarantine work, weed, and pest control, your State Commissioner will endeavor to strengthen the commission by adding field deputies, perhaps one for the South, another for the North.

"The encouragement necessary to the success of all co-operative organizations in the fruit business will be cheerfully given. Through such organizations it has been possible to place the industry on a higher plane, and the future will witness greater strides along this line."

Fresh Fruit Standardization.

The application of the Standardization Law to tree fruits, cantaloupes, and berries has received a year's test (two years on grapes). H. E. Butler of Penryn, Placer county, one of the prime movers in drawing up the law, described its workings, and F. B. McKevitt, of Sacramento called special attention to its weaknesses, giving suggestions for amendments.

Mr. Butler believes "it would spell disaster to the State to enact arbitrary and critical standards for packing or for maturity. Better and more practical to have no standard law at all than to make standards inconsistent with the profitable and natural pursuit of the industry.

Growers Supported Law.—"In the main tree-fruit districts (with one exception) the law has been effectively applied. Growers and shippers have supported its enforcement. I have never heard a complaint from a grower in our district that its requirements worked any particular hardship on him. Uniformity of size, quality, and maturity has seemed possible to obtain from all packers who are conscientious enough to make an effort to conform.

Shippers Refused Rejected Fruit.

"In practically all instances shippers have respected the law and refused to load rejected lots. The public inspectors have been available to act as disinterested referees, between receivers and growers. This arrangement enables a receiver to be more independent, knowing that the rejected fruit would not be received by competitors.

It is difficult or impossible to fix details by law fairly and equitably.

"Practically all of the tree fruit covered by this law is packed in the orchards by the growers themselves and seldom in central packing houses. Equipment varies from nil

to perfect, and packers from new settlers to experts. In a great many instances packers are the families of growers themselves.

"Conforming with the law requires grading for size, quality, and maturity. The method oftenest used is to stack the peaches, plums, pears, etc., on tables, and to pack from the accumulation, choosing uniform specimens for each box, and handling over and over to find the same. Grading tables, scientifically constructed, can be built, and padded with cloth, for \$1.50 each, on which the tenderest fruit may be graded by hand more economically and far better. Such reasonable equipment must be provided when the law's requirements of uniformity are more rigidly enforced."

Orchard packing is necessary but

not always expert because "orchards are often widely scattered, frequently miles from the shipping station; roads are rough, and fruit must be packed in the orchard to protect it in the hauling, in a great many cases. It is next to impossible to avail ourselves of a large central packing house. The crop is highly perishable, and must be handled quickly or lost. Expert packers are sometimes impossible to get. The grower's family, neighbors, and friends are often impressed to save a crop ripened by a sudden change of weather.

"Maturity standards have been, and always will be, difficult to establish. From first to last of the season, there is a very long list of varieties of each of the kinds of fruit regulated. Color varies at



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like maturity, in almost every variety of plum and peach particularly. California is a State of many climates and varied soils, and unequal moisture conditions. Intimate knowledge of the characteristics of each variety, and of its peculiarities under conditions in which produced, are required to determine its real state. Blackberries are red when they are green; some plums are green when they are ripe, while others are still green when red. (So much for the English language.) To fix maturity standards by color is impossible. Maturity, however, should, in all instances, be within reason. The practical application of any law can be to the extent of reason only.

"I believe the benefits that will be derived from the present law, if enforced, are very far from being understood as yet, and that any radical changes, thus early in the experiment, would turn the present favorable sentiment among growers to antagonism. This would defeat the end desired, which I believe to be an honest and dependable pack from all sections in California, uniform in size, quality, and maturity throughout the container, correctly marked as to contents, all for the protection of the buyer and consumer, and for the establishment of confidence in California fruit."

Mr. McKeivitt's suggestions, however, do not seem arbitrary or radical.

"It is a weakness in the present law," says he, "that domestic shipments are exempt from the provisions of the act. Experience, as well as justice, shows there should be no exemption. This defect will probably be remedied by the coming legislature."

"We will never secure the best of results from this or any other Standardization Law until there is a change in our horticultural laws which will give to some central authority complete control over the inspection of fruit instead of the loose method in use at the present time which permits each county to establish its own standard."

Besides these suggestions for better enforcement of the law, Mr. McKeivitt showed by plenty of facts and argument, that the weight of fruit in the ordinary packages should be limited by law to prevent the squeezing which bruises or crushes grapes, apples, and pears, especially, when packages are overfilled.

"A grape package intended to comfortably contain twenty-five pounds is made to carry twenty-eight to thirty pounds; and the fruit, instead of being carefully and lightly packed, is crowded into the baskets and the top jammed down upon them, resulting in broken and split berries, with the elements of decay beginning their work of destruction before the package is placed in the car."

"If all grape crates contained a maximum amount of say twenty-five pounds, the dealer would know exactly what he was getting for his money and would buy accordingly, knowing that his competitor was getting no more than he. The fruit is worth so much per pound and should be bought on that basis, which is the only way fair alike to grower and dealer."

"The situation is bad with apples

and pears. While acting as one of the Jury of Awards in the five-box apple contest for the sweepstake prize at the Panama-Pacific Exposition last year, as many as sixty per cent of the apples in some of the boxes examined had been mechanically bruised. These beautiful apples, probably the finest grown in the world, produced on the highest priced land, cultivated regardless of expense; pruned, sprayed, and fertilized with utmost care, the fruit picked with gloves, placed in the boxes as carefully as if they were eggs, were over one-half injured by over-crowding, and both their appearance and their keeping qualities greatly injured.

Eighteen per cent sugar for most table grapes, with 16 per cent for Emperors and Cornichons, would be better than the present 17 per cent required for all varieties except Emperors, for there was "much complaint in the Eastern markets this season because of immature Malagas. It is the poorest of business judgment to ship grapes that are unfit to eat. Nothing will more surely kill the demand for this fruit."

SHORT PRUNING IS NOT LOW PRUNING.

To the Editor: I have several acres of Gros Colman vines—two years old and very vigorous. They had fruit on this year, but an article by Prof. Bioletti in the Press, lately, stated this variety should be "short" pruned, while mine is "long" pruned. I would like to know if I could safely cut them back now and if so, how high should they be crowned from the ground. Also, should I use wax on the wound after cutting back?—R. G. M., Sanger.

[Answered by Prof. Bioletti.]
Your correspondent has misunder-

stood my remarks about the Gros Colman grape vine. When I said the vine should be short pruned I was not referring to the height of the stem, but to the length of the spurs, which should be left very short in the annual pruning. A strong vigorous vine, like the Gros Colman, should be given a high head like a Malaga, but as it bears well with short spurs there is no need to leave

long ones, as short pruning is much simpler than long pruning. The words short and long in vine pruning refer to the length of the wood which is left each year. For the height of the vine we use the words high and low.

Articles of incorporation were filed for the Madera County Fair and Livestock Association to hold annual fairs at Chowchilla.

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Surgery on Decayed Orchard Trees.

[Written for Pacific Rural Press by John J. Fox, Napa.]

The recent demonstrations in tree surgery in Napa county by A. G. Haskell of St. Helena drew a large number of interested growers who watched the work with keen interest. They took notes on the tools and paraphernalia required and most of them will go right to work on their orchards whenever time will allow. Mr. Haskell placed his services at the disposal of the orchardists for an entire week free of charge, as he is not looking for work in this line, but confines his work to old ornamental trees.

The worst orchard trees were picked out and worked on. Spongy,

torch and afterwards coated with boiling asphaltum.

Where there is a real hollow, cement and sand are used as a filling. This mixture—about 2½ to 1—is not really wet but contains just enough moisture to make it stick together. When mixed it looks still loose and powdery. The consistency of this pure fine sand and cement is most important and it is tamped firmly into the cavity, using one hand on the outside as a support if necessary. It may be built out on the outside and "slicked" up with a small founder's trowel (into the shape of a trunk) until a little moisture shows on the face of the filling. The filling is then cut round the entire edge with a deep channel so as to be quite free from cambium or inner bark which has previously been trimmed square in with a sharp knife. This is important, for if the bark is overlaid with cement its growth may force out the filling instead of covering it.

If the cavity is flat and open, the inside should be studded thickly with 6d. nails before filling, as cement will not adhere here to the wood and it might get displaced.

The tools necessary are a set of ship chandler's gouges and chisels, a small gasoline hand torch, a three-pound mallet, a founder's flat trowel and a sharp knife to dress the edge of the wound in live bark.

The Cavity Is Cleaned Out and Charred with a Torch to Kill All Spores of Decay, Then Filled with Cement.

fungus-infested hearts were cut out to sound wood and traced to their origin. Some infection originated in old large cuts, others from sunburn or where they had been scarred by the plow and still others at a graft cut. The cavities are dug out with chisels and gouges until sound wood is reached. After being thoroughly cleaned with the tool, the inside is burnt out with a plumber's hand

which have become infected can be cut and burned out and if not too deep may be just asphalted over and not filled.

The cost (including labor which could be done by any one with judgment) was estimated at \$1.00 for the worst tree done. The average cost, if labor had been paid for, was 70c a tree, 15c of which was for material.

PREPARES ORANGES FOR FROST.

[Written for Pacific Rural Press.]

"We picked the oranges clean from the outside rows, especially along the eastern side of the orchard first, because our cold winds come from the east and it is harder to fight frost on the outsides," says Fred Arth of Redlands. Fruit among the leaves is best protected. A neighbor had ice all over the oranges on top of a pile of picking boxes one morning though that on the trees was uninjured.

Mr. Arth has two galvanized iron oil storage tanks holding 5 and 1½ cars respectively, which are kept well supplied for emergency (such as 1913 when people couldn't get oil on 24 hours' notice as usual).

He has had frost pots two years, 800 pots per 900 trees on 10 acres. These raised the temperature in the center of the orchard to 40 degrees in an hour one night when the outside temperature was 25 degrees.

Makes Wood Dormant.—But the principal protection for the trees aside from fire is in making the wood dormant. This is done by stopping cultivation and irrigation early so the trees will harden their wood. Old trees go dormant naturally quite regularly, but young trees may not; and the former practice of autumn cultivation has been discontinued. Suckers should be left in the fall to help deaden the fruit wood by monopolizing sap flow.

Temperatures beside some Valencia trees dropped to 22 degrees

once and to 24 degrees twice last winter with no damage at all, on account of maturity of wood, according to Mr. Arth.

Young trees whose bodies were

wrapped in cornstalks had no damage to their dormant tops when temperature went down from 20 degrees at 7 p. m. to 13 degrees before morning in a former year.

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Malagas Pruned for Fruit.

[Written for Pacific Rural Press.]

F. H. Booth's adversity was his prosperity. He couldn't hire enough help on his vineyard and orchard near Kerman, Fresno county, so he was always late getting his work done, especially his pruning and plowing. Why his crops were so good he didn't know, but now he thinks it was because of the lateness of his operations. His place is an ash loam averaging four or five feet deep, but with hardpan pretty close in places.

He has 12 acres of 7-year Malagas which when seen last spring had the fattest, longest spurs that we had seen on Malagas in a 150-mile Fresno county trip. He had already observed that in pruning he ought to save "the wood that has already worked for us."

The big canes had been cut off and the weaker ones left short and scarce, by pruners in the spring of 1915; and notwithstanding that, the crop was 31 tons. This year it averaged over 7 tons per acre as figured when the crop was one-third picked, Oct. 5.

Instead of leaving 2 or 3 buds each on 3 to 5 slim spurs, 5 buds were left on each of 5 to 11 fat spurs of canes which had borne

fruit. Longer spurs were not desired on account of cultivation damage, so more of them were left, on the vines and arms which had shown most vigor the preceding season. This was to take all the sap sent up by each vine, and prevent breaking out of watersprouts, which would waste the vines' energy. If too many spurs were left, they would suffer for enough food to go around, so the relative vigor of the preceding season was used as a reliable index. "If possible, you should always cut canes that have borne fruit, for next year's fruit spurs."

Renewal Spurs.—Since continual use of fruit wood for spurs might build the vine up too big and high, putting the fruit too far from its source of root sap, an equal number on one-eye renewal spurs are left, keeping them, so far as possible, low down on the arms and trunks to shorten the arms rather than make them longer. About 90 per cent of these bear fruit also, next season, under the Henry system of grape culture which Mr. Booth followed closely this past season. These many renewal spurs are desired "so I may have plenty of fruit wood to work with the following year."

FRUIT TREES ON DITCH BANKS USE WASTE LAND.

[Written for Pacific Rural Press.]

When land is high priced and you could be getting interest on the money invested, it pays to waste none of it. Irrigation ditches are usually waste land. The seepage from them is usually wasted water.

G. R. Fox of San Joaquin county couldn't at first see the philosophy of his son and wife who wanted to set fruit trees on the ditch banks of his alfalfa and bean ranch. But he finally bought about 600 trees for the mile of ditches on the place and planted them two years ago last March. They are about 16 feet apart on top of both banks of the ditches, being staggered to admit more light. About 500 of them are cherries of four varieties, with a lot of Bartletts along the lower ends of the three cross ditches. Some peaches and apricots were set on the corner near the house. A Muscat grape vine was planted in each space between trees, with a few of other varieties. Few if any losses have occurred, no attention has been paid to the trees for irrigation, they get no cultivation because alfalfa runs

up to them on one side. The trunks were whitewashed to prevent sunburn. Some nice fruit was picked this year and Mr. Fox is well pleased with the system. The trees have grown well, for they have plenty of light, air, soil, and water.

GENTLE LEMON PRUNING.

Two lemon orchards near Fillmore are four years old and nearly the same acreage. One bears considerable fruit, the other does not. The latter is cut back heavily every year, leaving about a foot of new growth and producing a lot of useless shoots around each cut.

The other is not pruned, but where limbs grow too tall, their end buds are pinched off; and where the limbs grow too thick, they are pulled out before they get a good hold on the wood. These trees bear fruit.

But some folks say they don't want such young trees to bear fruit. Considering that wood growth requires much more soil plant food than fruit, why should not a crop of fruit be easier on the tree and more profitable than a crop of wood shoots that must be cut away at extra expense?

GUAVA PLANTING.

To the Editor: I would like to plant a guava jelly plant, if this is the time of the year and if it will bear next year.—G. W., Stockton.

[Answered by C. P. Taft, Orange.]

The guavas grown in California are mainly the Strawberry (red or yellow); the Lemon, of which there are various sorts, all quite tender and easily frostbitten; and that recent introduction, the Feijoa or "Paraguay" guava. All are used for jelly. This is not the best time to plant, but any one of these guavas would probably live if planted now. They all have considerable inherent vitality. If a large bush already in bearing were taken up with plenty of earth, it might bear next season.

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CALIFORNIA NURSERYMEN OF THE FIRST DECADE.

(Continued from page 537.)

held to be low enough to knock out tree-peddlers. It is not indicated what these prices are reduced from, but it is otherwise known that fruit trees had been sold in previous years at \$3 to \$5 each. Probably planters often fail to realize how much more easily they can now provide for planting than the pioneers could, through the organization and efficiency of modern nursery operations. Planting more closely, as the pioneers did, even at the reduced prices noted above, it must have cost, on the average, from \$100 to \$150 to get the trees for an acre of land.

Looking backward for notes of the speed with which pioneer nurserymen advanced it is very significant to remember that in 1858 nine of them alluded to their "long established nurseries" when only one of them had been in business more than five years and most of them less than that. It was quite characteristic of the times. Things grew old very fast.

Experiences of Two Pioneer Nurserymen.—Perhaps we can get a more realizing sense of conditions in the first California decade by contrasting the experiences of two pioneer nurserymen which we glean from various contemporary records.

A. P. Smith of Sacramento was apparently the first commercial nurseryman of California, for he started in 1848, on 65 acres of land three miles from the city on the American river which he purchased from Capt. Sutter, whose old fort, somewhat restored, now stands in the center of the capital city. Mr. Smith evidently entered the nursery business by the market garden route and was ready not only with vegetables for the inrushing '49ers, but for the first start both with fruit trees and ornamentals. F. A. Miller, himself a pioneer whom many of us remember, wrote in 1904 as follows: "Mr. Smith cultivated a very meritorious collection of ornamental and fruit-bearing trees, shrubs and vines which would be considered a credit to his State at the present time." The early records justify Mr. Miller's tribute to the first of all the nursery pioneers. In 1856 it was officially reported:

In the extent of plantings, the number and variety of plants, the hedges of escallonia and osage orange, the firm walks and perfect cultivation, it would be difficult to find the equal of the gardens and nurseries of A. P. Smith. The grounds are irrigated with water from the American river raised by a 10 h.p. steam pump, capable of throwing 10,000 gallons an hour into a reservoir from which it is carried by 6000 ft. of 12-inch earthen pipe under ground to 20 hydrants from which it is distributed through 4500 ft. of canvas hose, here and there as desired.

In 1857 Mr. Smith had in nursery 194,000 trees and plants of 1109 different varieties. In that year he grew and sold 4,000 lbs. of garden seeds. He had three greenhouses, each over 100 ft. long, which took State premiums in 1857 and '58. During three years, from 1856 to '58, Mr. Smith sold products to the value of over \$150,000 and his expenses during the same years were \$110,000.

He was doing a good business, but soon after, the demand failed to keep pace with such expansion and the establishment was broken up a few years later after a hard struggle. It was too great for the time and the competition which surrounded it.

Quite in contrast with this pioneer nursery tragedy was the upbuilding of another pioneer concern by B. S. Fox of San Jose, remembrance of whom, in his latter days, a number of us probably share. He was a quaint Irish bachelor gentleman, well trained in handling plants, with a fine thrift, a hunger for hard work and an acuteness in trade. His chief recreation was seedling pears, some of which still stand in honor on American fruit lists. He was perhaps the closest link between California and the distinguished Eastern pomologists of fifty years ago. He was the opposite of his predecessor Smith in everything but the plant-love which both of them possessed. He built up his business, which endured until his death, in the early '80s, with less money probably than Smith unconsciously threw away. Surely the modern science of efficiency has nothing on Fox in economy of production. We have his word for it, as follows:

"In 1857, I planted ten acres of stocks, afterwards grafted, budded and cultivated the same all the rest of the year, making and caring for 63,000 budded trees for a cash outlay of \$1,423. In 1858 I planted out, and budded later, 100,000 trees and kept them growing with an outlay of \$1,828."

How Mr. Fox could produce budded nursery trees for less than 2 cents each would be hard to understand if we did not fortunately have his own explanation. In his report, he ingeniously says: "We do all our own budding and grafting and of course make no charge nor credit for our own labor, not knowing its value." He also wrote: "Time pressed so hard that we had to graft

day and night." With this sidelight we can understand how Mr. Fox could figure cost of trees so low, but even this left him in some economic doubt, for he wrote that he "questioned whether trees would pay a fair return upon the capital sunk at the present price of labor. I am afraid that they will not, but our operations for the coming season will be on an extended scale, considering the age of the State." But while he still had doubts whether returns would justify the capital sunk in paying one man and a boy the sum mentioned above per 100,000 trees, still he kept bravely on. His timid expansion secured for him the first prize for the best fruit tree nursery in the State and he maintained a leading position in the California nursery business for a quarter of a century after his doubts began.

Dry-farmed or Irrigated Trees?—Early in the '50s, the tap-root controversy was hot in California as it was at the East, and the prejudice created against transplanting was somewhat troublesome to the nurseryman. The answer is, of course, then as now, that not one in a million of successful fruit trees ever grew from a seed planted in place—which is a complete demonstration that its original tap root is of no importance to a tree. If it wants one, or several, it will make them after transplanting. And so the tap-root issue of the first decade came to naught as that issue always will. Closely related was the controversy, which also arose in the '50s, as to whether nursery trees should be irrigated or not. George H. Beach, the pioneer nurseryman of Marysville, met that issue squarely in 1858 with this declaration:

"About half my nursery trees and vines are grown with and one-half without irrigation. I think those which were irrigated start more thriftily when set in orchard, having softer wood and bark, freer sap vessels and roots better fibered, always continue to do better with the same treatment than those grown without

irrigation. The latter tend to a tap root, while those grown with irrigation send out a multiplicity of roots and fibres and I find the top partakes very much of the style of the roots."

It must be admitted that some of these claims were then, and are still, unsupported by demonstration, but as theories they are quite as good as those which have been constructed against properly irrigated trees.

The Pioneer Landscapist.—Now that California nurserymen are acting upon the conviction that it is a part of their business to offer planters advice about arrangement and handling of plants as well as fill their orders for them, it is interesting to note that at least one pioneer nurseryman laid out his business that way. J. R. Lowe, educated in England, established a nursery and offered to do landscape work, in San Jose early in the fifties. Of him the early official reports says that he was the most prominent landscape gardener and that he laid out handsome grounds, not only in the Santa Clara valley, but in remote places. The report of 1857 speaks of Lowe and of his work as follows:

"Landscape gardening is beginning to be quite fashionable. The careless, irregular, but graceful curves and winding of the carriage drives bordered with flowering hedges, lawns, groups of rare and well-shaped trees, surrounded and mingled, forest-like, with shrubs and running vines, please the admirer of nature more than the old geometric style, with its stiff-set, mechanical forms."

Now that the so-called natural system prevails so widely in California and the formal system is usually restricted to its proper elements and surroundings, it is interesting to remember that next to Nature itself, the natural system was first practiced professionally by J. R. Lowe, as a part of his regular nursery business, early in the first decade.



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Colonization in California.

[Compiled for the Pacific Rural Press].

SECOND PAPER.

[The following is a discussion of the significance of the facts about methods of colonization recently produced in California based on the facts presented in the last issue of this journal from the report of the Commonwealth Club. What follows is compiled from the summary of the report prepared by Dr. Elwood Mead of the University of California. —Eds.]

Settlers Who Made Good.—Ten years ago California presented unusually attractive opportunities for settlers with small capital. There was still some fertile public land. The great wheat and stock ranches were being sold at low prices—from \$10 to \$50 an acre.

Farmers with very little capital could buy farms and meet their payments from crops. This attracted a large number of settlers from other sections of the country who have generally succeeded and done much to develop and demonstrate the possibilities of intensive agriculture in the State.

Coming of the Speculator.—Unfortunately, these conditions also made the State an attractive field for land speculators. In localities where wheat land could be bought for \$25 an acre, orange groves and vineyards were selling for \$100 to \$300 an acre and paying interest on these prices. In no other part of the country was there so great a difference between the prices of land before and after subdivision. A great business developed in the purchase, subdivision, and colonization of farm lands. Real estate operators and land salesmen from the over-done and less profitable fields of the Middle West flocked here, not to develop agriculture, but to exploit it. Land to them was merchandise, to be bought at the lowest possible price and sold at all the colonists could be induced to pay. Land purchased at \$10 to \$40 an acre was after subdivision raised to \$75 and \$150 an acre. In one instance a tract of land bought originally at \$5 an acre was sold for \$15 an acre, then subdivided and sold to colonists at \$125 an acre.

How Their Victims Fared.—The real farmer who came here from other sections of the country looking for a home, who had no intention of speculating and could not afford to do so, found himself in an atmosphere which often swept him off his feet. When he was told that if he would make the first payment, the land would do the rest, he accepted this as reliable advice, invested nearly all his capital in this first payment, and the land did the rest, which too often was to turn him adrift with the loss of his money and the gain of some useless and disagreeable experience.

Instances of Exploitation.—This rise in land prices was arbitrary and artificial. It was not the result of profits of cultivation. It was not due to a demand for land, because these colonization enterprises were spending huge sums of money in lurid advertising and personal solicitation to induce people to come here. Commissions on sales rose from 5 per cent, which had hitherto

been the rule, to 20 per cent and even 30 per cent of the selling price. The price that our settlers have paid for the privilege of buying small farms is so far beyond the value of the services rendered by the colonization enterprises as to require a change in methods even if there were no other reasons for such change.

For example, in the Orland colony land before subdivision sold at \$10 to \$40 an acre. All that the colonizer did was to subdivide and sell it. The average selling price was \$136 an acre. The settler paid \$100 an acre to secure a chance to develop the country. At Willows land bought by the colonization company at an average price of \$37 an acre was sold to colonists for an average price of \$130 an acre. Here the settler paid his captor \$90 an acre. In the Oakdale district wheat farms were bought in large tracts by colonizers at \$10 to \$40 an acre. They sold them to settlers at \$75 to \$300 an acre. These examples are typical of what took place all over the State.

It is reported that the syndicate which bought and resold the Haggin Grant to another body of speculators, made a million dollars' profit. An Eastern banker took away a quarter of a million dollars, the profit from buying and subdividing a comparatively small area.

It may be thought that the public has no interest in how much the speculator makes or how much the settler pays. We once thought that the public had no interest in the amount of watered stock sold by corporations. Now we know it is a public question of first importance and the sale of land at prices above its productive value is as detrimental to the public welfare as the sale of watered stock.

Our Land Prices Unreasonable.—One of the reasons why so few settlers are coming here is that they can buy land elsewhere for less money. The average price of unimproved land from Maine to Pennsylvania is \$37 an acre, in the South Atlantic States \$24 an acre, in the country north of the Ohio and east of the Mississippi \$75 an acre, in the States west of the Mississippi \$60 an acre, in the South Central States \$24 an acre and in California \$110 an acre. In other words, the man with small capital can buy three acres of unimproved land in States like New York and Pennsylvania for what it will cost him to buy one acre here. He can buy four acres in the Southern States for the price of one acre here. He can buy two acres in States like Iowa and Kansas for a little more than he would pay for one acre here.

Need Longer Time in Paying for Land.—The people who planned colonization schemes in this State had apparently very little knowledge of what it costs to improve a farm or what can be made out of it. Either that is true or all they cared for was the first payment; because the time of payment was altogether too short and the interest rate too high to give the average settler any reasonable chance to survive.

Generally speaking colonization companies ten years ago gave set-

tlers four or five years' time in which to complete the payments for their land. Those beginning within the last two years make the time ten years; those that are planning to begin in the future are considering twenty years.

The other countries of the world where land settlement has been made a State policy and the profits of agriculture carefully worked out, the time for payment runs from thirty-five to seventy-five years. How, then, can our settlers, buying the highest priced land in the world, pay out in the time allowed in this State? The answer to that is that those who expect to earn the greater part of the cost of the land and improvements out of the soil cannot do so and have not done so.

How Settlers Have Been Helped.—At the Van Nuys colony the settlers of small capital were in trouble as soon as the first deferred payment became due. They could not meet it. The success of this colony, for it is a success, was achieved by those interested in the company lending large sums of money to settlers with which to make improvements. This included \$60,000 with which to establish poultry farming, and large sums for the erection of canning factories, and for extending the time of payments.

The four years' time given in contracts at Shafter does not mean anything, because the management of the colony is willing to give any settler who is industrious and who makes improvements ample time, and those who are behind this enterprise have ample capital to continue this policy.

At Fairmead the management of the colony is assisting the settlers to obtain loans. The most success-

ful colonies in the Oakdale district are managed by a local banker who is in himself a rural credit system. The settlers of limited capital at Patterson, Kerman, Wilton, Carmichael and other colonies have only been able to retain their homes because compliance with the contract is not insisted upon. Los Molinos is prospering because the company was able to forego payments and furnished a large sum to finance improvements. At Orland many of the settlers have paid neither principal nor interest since they took their farms, although the entire contract period has elapsed. At Willows the Sacramento Valley Irrigation Company, one of the largest enterprises in the State, has voluntarily remitted all unpaid interest and given its settlers new and longer time contracts.

Irresponsible Promotion.—But there are other colonies where the company selling the land owed money and had no financial resources. They depended on the payments of settlers to meet their own obligations and when these were not forthcoming they were in no position to either extend time or give assistance. In such instances a great many settlers have lost their all because of having undertaken to pay for land under plans which are financially impossible.

In a number of colonies only two or three settlers remain out of scores, and this is not always because the land is not good but because the settlers did not have sufficient capital to begin with or were not given time to earn it from the land. It would seem, therefore, that some supervision or regulation of these matters by competent authorities would be in the interests of all concerned.

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It is impossible for the settler who comes here, especially the settler from a humid section, to be able to determine whether the water supply is adequate, whether the land is troubled with alkali or whether it needs drainage, and he is in danger of being misled. Even the Native Son cannot always protect himself. To take an extreme case, our committee found some settlers on a dry area who had been sold land on the guarantee that it had an undisputed water right and an inexhaustible supply. This was all true enough, but the supply was 300 feet below the surface and it would cost many times as much as it was worth to spread it on the land and the right to it was undisputable because no one cared to contest it.

Character of Settlers.—The first settlers of California were a superior body of men and women, enterprising, intelligent, and patriotic. They represented all that was best in American life and American character; and it is owing to this fact that California has become a great State—a leader among States in its social and political institutions. It would be a calamity if that leadership should be lost by impairment in the quality of rural communities. In a few instances this matter has had consideration, but in too many cases the only question asked about a settler was the amount of money available for the first payment on land, and a welter of races, industries, and inexperience has been gathered together in these new settlements. This is not mentioned to urge the exclusion of any one, but to show their need for public oversight and guidance to help them enter on the most highly specialized forms of agriculture or horticulture and to bring about a friendly and harmonious social and political life in rural districts.

Need for More Young People.—Another menace to our rural life is the movement of farmers' sons and daughters to the cities.

High prices for land and hard conditions of payment make it so difficult for them to purchase farms that settlement is quite largely restricted to those who have lived long enough to accumulate considerable money. The average age of settlers in the colonies studied was 43 years. Too many have reached an age when they should be leaving the farm rather than beginning its development.

Growing Menace of Tenant Farming.—Tenant farming has always had an important place in the agriculture of California, but with the rise in land prices and the adoption of intensive cultivation it has taken on a new and less desirable aspect. In the earlier history of California the tenant farmer was an integral part of the community. He was, as a rule, an American with an interest in political and local affairs, and as ready as the land owner to work for the up-building of the neighborhood.

In recent years, however, tenant communities have been growing up in California made up largely of Asiatics or peasants from those portions of Europe where life is sordid and standards of living are low. These tenants have little or no interest in community affairs. They maintain their racial indifference and aloofness. They are not a contribution to our political or social

strength. Their willingness and ability to pay high rents does not come so much from better methods of farming, though as a rule they are good farmers, but because they live more frugally than the American or the immigrant from Northern Europe.

It is undoubtedly true that many land owners can obtain a higher return from their land by renting it than in any other way, and it is also probably true that the class of people who form the bulk of the tenantry are living better than ever before; but that does not mean the kind of community life which is being created is desirable or that this sort of development can become permanent without lowering the standard of the State's civilization. In other words we are creating tenant slums on the great landed estates.

A New Era in Colonization.—With the bursting of the speculative colonization bubble a new spirit has been born in land settlement. Those interested are beginning to study the question from the standpoint of the settlers' needs. This is planning colonization in accordance with the Golden Rule in which the seller shares the risk with the buyer. It is in accordance with the spirit of fairness which has been prominent in California in the past. It will, I am certain, dominate this development in the future.

The manifestation of this spirit does not, however, render less necessary and desirable the placing of colonization under public supervision and control. This question needs to be studied from the standpoint of public welfare and the larger State interests. We need to protect

the settler and the honest colonizer from the encroachment of the unscrupulous. Regulation, however, is not enough. The time is near at hand when California will have to take this up as a constructive matter. The best that we can possibly hope to accomplish does not equal what is being accomplished in Ireland, Germany, Denmark, Australia, and South America.

FRUITS ON QUINCE ROOT.

To the Editor: What kinds of fruit can be grafted onto quince root?—J. C. S., Ontario.

[Answered by Leonard Coates, Morganhill.]

[All pomaceous fruits, such as pear, apple, hawthorn, loquat, medlar, etc., may be grafted, with varying success, on the quince.]

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Please send me free Bulletins regarding control of orchard pests. I have

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Better FRUIT Trees

APPLE
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PEAR
PERSIMMON
PLUM
POMEGRANATE
PRUNE
QUINCE
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SHADE and
ORNAMENTAL
TREES

Deciduous
Citrus
and other
Tropical
Fruit.

One cent invested in a postcard will bring to you a free copy of my 1917 combined Catalogue, Planter's Guide and Price List—just off the press—containing most valuable information for Planters. Illustrating, describing, and pricing everything to plant.

Largest and best scientifically propagated—"true-to-name" stock of fruit trees grown in California—at lowest possible prices.

PLANT FRUIT TREES NOW

It's good advice, as all indications are for good prices and handsome profits for all California fruits for years to come. Will quote special prices on large lots for acreage planting.

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ONTARIO, CALIFORNIA

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ASCOLANO
MISSION
MANZANILLO
SEVILLANO
AVOCADO
FIFTEEN
BEST
VARIETIES

Cherimolia
Feijoa
Guava
Loquat
Sapota
Orange
Lemon
Pomelo
Lime
Tangerine
Kumquat

and
THE WORLD'S FINEST
ROSES

Alfalfa Seed From Cultivated Rows.

[Written for Pacific Rural Press by J. M. Bomberger, Modesto.]

The Pacific Rural Press asked me for a report on my experiment on growing alfalfa seed in cultivated rows.

I will first explain my reason for trying to grow seed in cultivated rows.

In 1910 I bought what was supposed to be common alfalfa seed grown in Nevada. The alfalfa produced from this seed was remarkably different from other alfalfa that I was growing. The yield was heavier and it grows very early and late in the season so that I feed it as a soiling crop from March 10 until after Christmas. I was so well pleased with this variety that since then I have always bought my alfalfa seed from the same seed house and always asked specifically for Nevada seed; but I have never succeeded in getting the same variety again; so now I have been trying for several years to grow my own seed from a part of the tract which I sowed in 1910.

First I tried to grow seed from it as it is usually grown in this vicinity, by letting the third crop stand for seed; but it was a flat failure with this variety; because the alfalfa kept growing right along even though it was not irrigated. When it blossomed, the plant sent out new growth and the blossoms did not go to seed at all. The result was only a very heavy crop of hay.

Because of this failure, I decided to try growing the seed in cultivated rows, so as to get as much sunshine among the plants as possible, and to keep the plants from shading one another.

I plowed up a portion of the 1910 tract so that the plants were left in rows four feet apart. The result is that this season I secured 300 pounds of seed per acre, which is really a

small yield; but I consider it a great success because I have secured the seed I so much wanted. I would gladly have paid 50c per pound, or more, to secure this kind of seed.

Even with the rows four feet apart, the growth of the plants covered the space between the rows almost completely. Next year I expect to improve the yield of seed by having the rows still farther apart.

In my system of crop rotation I use 150 pounds of alfalfa seed per year. This year I will have some seed to sell and help partially pay for the expense of growing it.

Heavy Seeding Not Wanted.

When Mr. Honeywell of the Pacific Rural Press was at my ranch looking over the seed patch in rows and noticing the rather scanty setting of seed, he suggested that I select seed from the plants which seed most heavily and in that way secure a better seeding variety; but I at once explained to him that that is exactly what I do not want. I want a variety of alfalfa that will grow the largest possible amount of hay; a variety that will have a great tendency toward growing leaves and green parts rather than vigorous blossoms and seed. I feel reasonably certain now that I can grow the seed by planting it in cultivated rows far enough apart.

My only object in cultivating between the rows is to keep down the weeds and keep the seed absolutely clean. I do not know that there is any advantage in growing ordinary alfalfa in cultivated rows for seed except to keep it clean of weed seeds; as some of my neighbors on the same kind of soil with ordinary alfalfa grow much larger crops of seed per acre by letting the third crop go to seed than I have grown in rows.

Winter Pasture for Wet Land.

To the Editor: I would like to have your advice on planting Sudan grass now. Also, red top clover. I have been told that now is a good time to plant. My land sometimes overflows. I want something for green feed during the winter months. —C. F. C., Santa Cruz.

[Answered by Prof. F. B. Kennedy, University of California.]

It would not be advisable to plant Sudan grass at this season of the year in Santa Cruz. It is a heat-loving plant, and the seed would be sure to rot with our cold rains. It is also very sensitive to even light frosts. The time to plant it in the vicinity of Santa Cruz, provided one is far enough back not to be influenced by the fogs, would be about the first of March, or whatever would be considered in that vicinity as good corn-planting time. The plant likes abundant heat with moisture, and the yield procured depends very largely on these two factors, the character of the soil being a secondary consideration, except that it must be well drained.

Your correspondent could not do better than plant his bottom lands to Italian and perennial rye grasses, sowing now at the rate of about 35 pounds per acre broadcast, and harrowing lightly.

I do not know exactly what is

meant by "red top clover." The common red clover of course has a blossom with a red top, but there are two distinct forage plants, one of which is recognized as Red Top, a grass, and the other, the common clover, or red clover, a legume. The red clover, however, would not do well on land unless it is well drained. If the land is only flooded for a short period, and the water drains off readily, it would not perhaps do very much harm, but it would certainly be killed out where the water is allowed to remain on it for any length of time. The red top, which is the grass, would not need, however, to have drained land, and when established would even grow up through the water.

If you want to plant a clover, the one that would more nearly answer your purpose would be the Alsike clover.

Thousands of acres of the great "pocket" lying between the Modesto Irrigation District and the San Joaquin River, are being put in shape for rice cultivation, six miles west of Modesto this season. The services of an expert rice grower have been secured for the management of the new venture.

THE NARROW YUBA

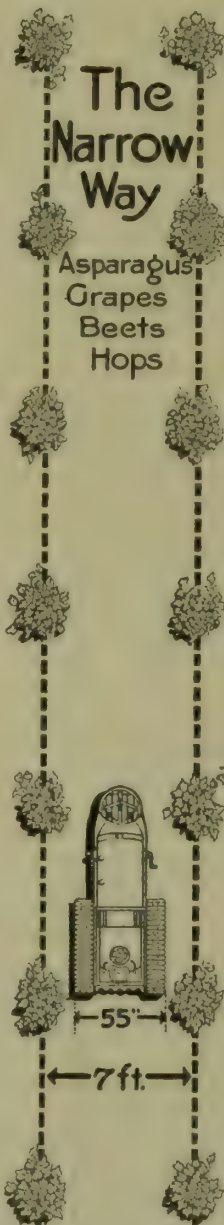
55 inches wide
12 horse power at
the drawbar
20 horse power at
the belt

The powerful little
bull-dog of
tractors made for
service on the
smaller acreages
and especially for
cultivating
Asparagus
Hops
Grapes
Beets

It is narrow enough
to go between
the rows

It has no equal in
the vineyard—it
hugs close to the
trees—goes under
the limbs—turns
in short space—
doesn't pack
the ground

The ball tread
track is 13 inches
wide—it is power
in compact form



Asparagus

The banked-up
rows are narrow—
and soft earth—
the 55-inch Yuba
is the only
machine suitable
for the purpose

Hops

Economy calls
for narrow rows—
there's where the
Yuba works

Grapes

Here's the machine
for vineyards

Beets

The narrow Yuba
helps the beet
grower make
money

Write

The Yuba
Catalogue and
Fall Bulletin will
be sent upon
request.

THE YUBA CONSTRUCTION COMPANY

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California

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DEPARTMENT A-106

433 California Street, San Francisco, Cal.

Gentlemen: Kindly send me a copy of your booklet,
"The Yuba Ball Tread Tractor."

Name	Check Main Crop Raised
P. O. Box	Fruit..... Rice.....
Town	Grapes..... Alfalfa.....
State	Grain..... Hay.....
Size of Farm..... Acres	Hops.....

P I P E
For Every Purpose NEW
Threads & Couplings
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Second Hand and NEW
Fittings and Screw Casings Valves
Guaranteed for Pressure

Pacific Pipe Co.

Main and Howard Streets,

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SUPERPHOSPHATE

Is a splendid fertilizer for

ALFALFA, WHEAT, ORANGES, PRUNES, ETC.

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and PRELIMINARY CATA-
LOGUE, containing full de-
tails for the successful grow-
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Rhododendrons,
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Boxwood and Hollies,
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for Christmas,
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Australian,
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Trees and Shrubs
Suitable for Pacific Coast
conditions.

Mail Us Your
Name and P.O.
Address,
PLEASE

"LEAKY" POTATOES CAUSED BY FUNGUS.

To the Editor: What causes
"leaky" potatoes and how can we
avoid them?—Subscriber.

[Answered by W. V. Shear, Stockton.]

"Leak" of potatoes has recently
been determined definitely as due to
a fungus—*Pythium debaryanum*. It
annually causes enormous losses to
potato growers in the delta section of
California and sometimes in other
sections. Potatoes affected with this
disease decay very rapidly; and be-
cause the decay appears as a watery
dissolution of the tuber, the term
"leak" has been given to it. This
trouble occurs almost entirely dur-
ing warm weather before heavy
frosts occur in the fall. The infec-
tion is almost always caused by
inoculating the tubers by fork punc-
ture or other wounds during the dig-
ging of the potatoes. The fungus
is present in the soil and finds an
entrance into the tuber usually
through some abrasion of the skin.
Occasionally it may obtain an en-
trance through the minute breathing
pores of the skin. After a tuber is
inoculated, the fungus develops very
rapidly if the temperature is favor-
able—85 to 95 degrees. If the
wounds are sufficiently exposed to
the air so that the surface of the
wound is dried quickly, no infection
is likely to take place. The only
remedy so far known for this dis-
ease is to prevent the wounding of
the tuber if they must be harvested
during warm weather. The imple-
ment ordinarily used for digging
potatoes in California is a sharp,
round-tined fork. This makes an
ideal inoculating instrument when
it enters the tubers; and if condi-
tions for development of the fungus
are favorable, the great majority of
these punctures produce "leaky"
potatoes. A heavy frost, especially
if followed by a rain, seems to de-
stroy this fungus, or at least to ren-
der it incapable of infecting the po-
tatoes, as after a severe frost occurs
very little trouble is experienced
from this disease.

GERMAN MILLET.

[Written for Pacific Rural Press by
D. L. Schrader.]

In the first prize Kerman booth
at the Fresno Fair last fall was a
notable display of German millet
grown by G. P. Guernsey. It is a
very profitable forage crop and
chicken feed, says Mr. Guernsey.
Stock clean up the forage and do
well on it. The seed are fed with
good results not only to chickens,
but also to hogs which fatten fast
on this feed.

The seed is planted as soon as
danger of frost is over. The growth
is cut two or three times for green
feed before allowing it to mature for
harvesting.

HOT-HOUSE CUCUMBERS.

To the Editor: What variety of
cucumbers is used by hot-house men
for this locality, and where can I get
seed?—H. E. R., Santa Cruz.

[Answered by C. C. Morse & Co.]

The "hot-house" cucumbers are a
special variety and entirely distinct
from those grown for general pur-
poses. These cucumbers have very
small seed carriages, grow long and
straight. One of the best varieties is
the Telegraph and this we can sup-
ply in small packets for 25c each.
Packets contain about 20 seeds.]

THE SANDUSKY TRACTOR

"THE LITTLE FELLOW WITH THE BIG PULL"

15 Draw Bar H. P.—35 Belt H. P.

The Tractor Question Solved

THE SANDUSKY TRACTOR is adapted to a wide range of service.
Convenient in lining up; belt clutch control. Pulley is direct con-
nected to crank shaft of motor, which is set crosswise to frame,
eliminating all gearing. In this character of work, power ranges
economically from one hundred fifty revolutions per minute to stand-
ard belt speed for heavy farm machinery. Ideal for individual or
small community requirements.

THE SANDUSKY TRACTOR is a four-cylinder, three speed, all-
steel machine. The wide drive wheels and scientific distribution of
the weight of machine, create a pressure per square inch on the
ground, far less than man or animal and absolutely will not inju-
riously pack any ground it works upon.

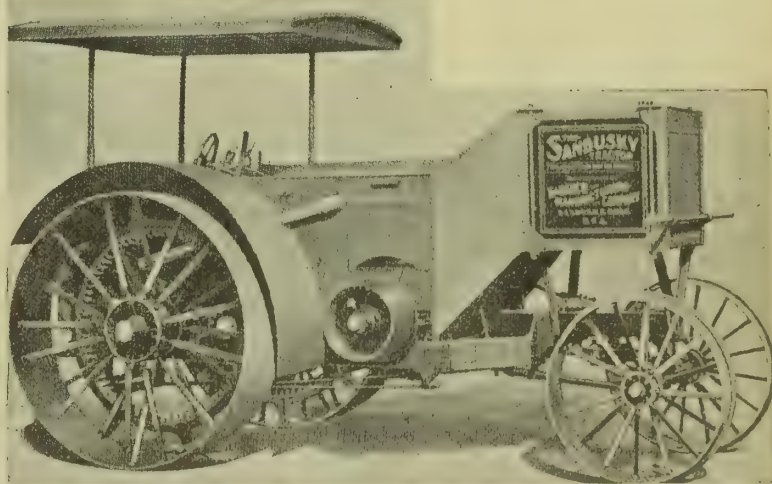
OUR GUARANTEE

We guarantee THE SANDUSKY TRACTOR to be 15 H. P. at the
Draw Bar and 35 H. P. on the Belt; to handle four 14-inch mold-
board Plows, eight inches deep where a big team can pull one 12-
inch Plow six inches deep, to run Belt Machinery up to a 32-inch
Separator; to have one-third reserve over its Draw Bar rating and
for one year against defective workmanship and material.

Try it before you buy

We give you a 3-day free trial on your own farm, demonstrating its
ability to fulfill our guarantee. A handsome 40-page booklet fully
describes the design, construction and ability of "The Little Fellow
with the big Pull." Sent on request.

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**160 ACRE
FARMS IN
WESTERN
CANADA
FREE**



Canadian Farmers Profit From Wheat

The war's devastation of European
crops has caused an unusual demand
for grain from the American Con-
tinent. The people of the world must be
fed and wheat near \$2 a bushel offers great
profits to the farmer. Canada's invitation
is therefore especially attractive. She
wants settlers to make money and happy,
prosperous homes for themselves by
helping her raise immense wheat crops.

You can get a Homestead of 160 acres FREE

and other lands at remarkably low prices. During many
years Canadian wheat fields have averaged 20 bushels to
the acre—many yields as high as 45 bushels to acre.

Wonderful crops also of Oats, Barley and Flax.
Mixed farming as profitable an industry as grain rais-
ing. The excellent grasses full of nutrition are the only
food required for beef or dairy purposes. Good schools,
churches, markets convenient, climate excellent.

Military service is not compulsory in Canada, but there
is an extra demand for farm labor to replace the many young
men who have volunteered for the war. The Government is
urging farmers to put extra acreage into grain. Write for litera-
ture and particulars as to reduced railway rates to Supt. of Im-
migration, Ottawa, Canada, or

Gilbert Roche, Canadian Government
Exhibit, San Diego, Cal. Canadian Gov't Agt.

LIME
MEANS

DOLLARS
WHEN USED ON YOUR

HYDRATED OR GROUND ROCK
IN BIGGER
BETTER CROPS
LAND

Free Booklet,
PACIFIC LIME AND PLASTER CO.
807 MONADNOCK BLDG., Manufacturers, SAN FRANCISCO

General Agricultural Review.

FIELD CROPS.

Another week of fair weather will take all the rice out of Butte Co. fields.

It is estimated that the Sutter Co. bean crop this year will bring close to \$3,000,000.

Seven thousand acres have been signed up for beets by the Corcoran Sugar Company for the coming season.

The crop of the bean growers in Sutter county this year will bring in more than \$3,000,000 with big prices prevailing.

The San Joaquin Valley Stockmen's Association are working for the establishment of a slaughter house at Fresno.

A cannery is being built for the Alpaugh Co-operative Cannery Company who plan to can meat, vegetables and fruit on a large scale next season.

Tulare has one of the largest corn crops that they have had in years. Rain has done very little damage. Most of the crop has been contracted for at about \$35 a ton.

This year's bean crop in Merced county is now sold. It totaled 4,830,250 pounds. High prices prevailed due partly to the failure of the white bean crop in Michigan.

It is reported that hemp will be planted on a large scale next year in the delta of San Joaquin. The war in Europe has made prices of this production rise to double those paid in normal times.

The potato crop is to be more than 50 per cent short. There is a demand in Eastern States and the probability of higher prices before the end of the winter is the present state of the potato market.

One of the large land owners of Yuba Co. has announced that he will immediately plant 40 acres of his land south of Marysville to cabbage. He expects to supply the markets in Seattle, Denver, and San Francisco.

The newly installed equipment at the plant of the Pacific Coast Company at Santa Monica gives facilities for the handling of 4000 sacks of re-cleaned beans daily. The enlargement was compelled by the number of rush orders.

On account of the ravages of water grass rice farmers in the Gridley-Biggs district are planning rotation of crops in the hope of killing the pest. It is believed it can be killed in two or three years. It is proposed to try sugar beets.

The Pacific Rice Growers' Association has failed to sign up 75 per cent of the California rice crop, and so that organization will not handle the crop for 1916. The Japanese could not see their way clear to come in on such notice, but say they will consider the matter favorably.

Donald H. Graham of Lancaster, Cal., writes under date of Nov. 11: "I have just finished my sixth cutting of alfalfa. Just got it cut before several nights of hard frosts. I am irrigating now for alfalfa pasture during winter for my hogs. Expect pasture to last until Jan. 1 to 15. I will irrigate again in February for early spring cutting."

There promises to be a big increase in bean acreage in Southern California this coming season. Estimates in the vicinity of Oceanside make the bean crop this year over 70,000 sacks, the larger portion of which will be limas. About 20,000 sacks will come from the territory south of Oceanside and the remainder from the Santa Margarita ranch.

The Lemona ranch in the Riverside section, above the Gage canal and adjoining the new citrus experiment station tract on the north, will plant about 40 acres of winter tomatoes between the rows of young citrus trees and ship in carload lots during the winter months to the

hungry and appreciative eastern markets. The plan is experimental.

Owing to the refusal of the Asiatic rice growers in Southern California to join the California Rice Growers' Association until 1917, that association will not handle the 1916 crop. J. H. Stephens, president of the association, states that he expects to have 90 or 95 per cent of the California rice crop signed up for 1917, when the marketing will be done through co-operative action.

DECIDUOUS FRUITS.

An effort will be made to bring the 1917 season of the California Fruit Growers' Association to Modesto.

Successful meetings of prune and apricot growers in Solano county are held. Organizations will probably be effected soon.

It is estimated that the peach growers of California will receive about \$3,000,000 for their 1916 crop, \$2,000,000 of which has already been paid.

The California Peach Growers' organization indorses the work that is being done to organize the prune and apricot growers into a marketing organization.

A week's series of vine and tree-pruning demonstrations is now being arranged by Farm Adviser Charles M. Conner for December 4 to 9 at the University of California's Kearney Farm in Fresno county.

The California Peach Growers have again advanced the price of standard and choice yellow dried peaches. This time the prices on standard were increased from .06 1/2 to .06 3/4; choice from .06 3/4 to .06 1/2.

Notwithstanding the unusually low temperatures that have prevailed throughout the current week, and fruit and vegetables were nipped by the heavy frost here and there, it is thought by growers and vineyardists that the damage will be trifling, as they had ample warning and had made preparations accordingly.

S. F. Price, who owns a 16-acre apple orchard near Cloverdale, sold 23 1/2 tons of dried apples from it this year, for which he received \$2,800. Mr. Price says that about 175 tons of dried apples were shipped out of Anderson Valley this year, some bringing as high as 6 1/2 cents a pound—\$130 a ton!

CITRUS, NUTS, SEMI-TROPICAL.

The orange pack is on in full swing in Oroville.

It is estimated that the Lindsay orange crop this year will approximate 2,400 cars.

Los Angeles county refused to pass the 8 to 1 ordinance asked by the Calif. Fruit Growers' Exchange.

Foggy weather and rain have delayed the closing of the Goleta and Carpinteria walnut packing house several weeks.

Washington navel oranges from the Kern mesa are arriving at Bakersfield. It was estimated that the crop will be 35 to 40 carloads.

Orange picking began in Fresno and Tulare counties this week. The bulk of the crop is still quite green, but a small quantity was ripe enough for the Thanksgiving trade.

The oldest orange grove in Lindsay, now owned by Lewis Larson, is so loaded with fruit that Mr. Larsen has been obliged to prop every tree. He expects to receive for his crop about \$11,000.

State Sealer of Weights and Measures Johnson has ruled that "olives in brine should be marked with a statement of the net weight of the olives, exclusive of the weight of the brine."

Apple packers from Washington and Oregon have invaded Oroville and are awaiting the opening of the

Reliable!



The BEAN is reliable—dependable! It represents over 30 years of study and experience. It will stand up to the hardest work day in and day out—week in and week out—and that's the kind of a sprayer you want. BEAN reliability is a feature of all

BEAN Power Sprayers

from the sturdy little one-man, one-horse Eureka to the big Bean Giant Triplex, which fairly eats up the work. The BEAN is reliable because every part and detail is reliable:

—BEAN AUTOMATIC PRESSURE REGULATOR holds the pressure at exactly the desired point. It never fails.

—BEAN THREADLESS BALL VALVES never stick or corrode tight—and they can be opened up in a few seconds without stopping the engine;

—BEAN PORCELAIN-LINED CYLINDERS will outlast the pump;

—BEAN ECCENTRICS are much more durable than cranks;

—THE STURDY NOVO ENGINE AND THE BEAN PUMP (the only pump without a stuffing-box) require practically no attention.

Spray now! See your nearest Bean dealer—or mail the coupon to us—at once.

BEAN SPRAY PUMP CO.

211 W. Julian St.,

SAN JOSE, CAL.

BEAN SPRAY PUMP CO.,
211 West Julian St., San Jose, Calif.

Gentlemen: Please send me your catalog on the following:

Power Sprayers ☐

Accessories ☐

Hand Pump ☐

Spray Materials ☐

Name

Address

Winter Sprays You Can Depend On

DORMANT SOLUBLE OIL,

A high-grade miscible oil, containing no asphalt.

CRUDE OIL EMULSION,

Perfectly emulsified and a product that will stand up.

ORCHARD BRAND LIME SULPHUR,

Filtered and free from sediment.

ORCHARD BRAND BORDEAUX PASTE,

The best fall fungus spray.

Universal Brand sprays have given results where directions have been followed out and the work done properly. Each product has a particular purpose. The proper use of these sprays should enable you to control your insect and fungus troubles so as to permit the trees to produce large crops of good, clean, marketable fruit.



Write for Literature and Prices.

Balfour, Guthrie & Co.

Insecticide Dept.
350 CALIFORNIA STREET,
San Francisco, Cal.

PAUL R. JONES,
Entomologist.

Turkeys Wanted

Write Us, and We Will Keep You Posted on the Market.

Ship to a House of Known Financial Responsibility.

Western Meat Co. San Francisco

orange packing season here. The prevailing chilly weather will hasten the coloring of the fruit.

With the co-operation of the Navelencia-Orange Cove district as exhibitors at the seventh annual Tulare County Citrus Fair, Dec. 6 to 13, in Visalia, the entire central California orange district is assured.

Much of the olive crop about Fresno and Madera will not be available for picking, because of the heavy frosts prevailing nightly throughout the past week. The olives can be used for producing oil however.

The southern citrus counties have rejected the plans for the adoption of an orange maturity law. The fruit is coloring rapidly and many of the growers demand the right to ship fruit in its tree-ripened condition regardless of the chemical content.

Orange County, in the heart of the Southern California Citrus belt, has refused to adopt the 8 to 1 test for the county. With the similar action of Los Angeles county recently it is evident that Southern California will now oppose the 8 to 1 standard for determining when oranges are ripe.

Officials of the Tulare County Protective Association, under whose direction orange standardization laws are to be enforced, have been notified by the railroads that they will not handle oranges this year unless the bills of lading for the fruit are accompanied with a certificate that the fruit meets legal requirements.

Boydston Brothers, owners of the Boydston Heights orange groves in the Worth district, Tulare county, have purchased a tract of 160 acres of lime rock, about four miles east of the Worth school. Ground limestone has been found valuable in the treatment of heavy adobe orchard soils, and heretofore all this material has been imported from Southern California.

Unusual efforts are being made by traffic officials of the Southern Pacific to bring into the district sufficient refrigerator cars to handle the early orange crop. Trains of empty cars are being rushed to Calif. from as far east as N. Y. City; and to bring in box shooks from the north empty cars are being forwarded to the mills in Oregon and Washington.

GRAPES.

Nearly 150 tons of raisins were stemmed by the Live Oak Stemming Assn. this season.

The price of California grapes has been brought down in New York by the heavy arrivals of Almeria grapes from Spain.

Several Kings Co. ranchers have installed raisin driers and will dry their second crops instead of sending them to the wineries.

The Tokay grapes shipped from the Lodi district total about 2,500 cars. About 30 cars a day are being shipped from Lodi, Woodbridge, and Victor.

The winery on the Guglielmetti ranch in Chileno, west of Petaluma with the entire contents, including 80,000 gallons of wine, was destroyed by fire on the morning of Nov. 14th. The loss will be in the neighborhood of \$20,000, partly covered by insurance.

The Stewart Fruit Company of Selma is packing some fine grapes of the Flame Tokay variety. They are placed in drums, surrounded by sawdust made from redwood, and kiln dried. Thirty pounds of the grapes are placed in each drum. They are so well protected they will keep for several months.

Consul Frost at Genoa, Italy, reports that Italy's grape crop and wine production this season will not permit the exportation of any considerable quantity of wine, as last season's shortage depleted the country's stock so that the vintage of the present season will be needed to refill Italian cellars.

George C. Husmann, pomologist

in charge of viticulture in the United States department of agriculture, is in Fresno for the purpose of selecting several pieces of land of different soil type on which to test out currant stocks for commercial purposes. Good crops have been taken from a Fresno vineyard and also from an Oakville farm.

Investigations of vineyards in Tulare county, by County Horticultural Commissioner Fred P. Roulard, show that the leaves of infected vines recently stricken with an obscure disease, turn yellow and drop off, and in about four weeks small leaves come out that show the effects of a choked plant. On examination the roots are found to be black.

In four days last week telegraph, cable and long distance telephone orders from nine American cities and three foreign countries reached the Calif. Associated Raisin Co. which disposed of \$4,000,000 worth of raisins, the largest sale of Calif. fruit of any kind for that period of time. It is believed the crop this year can be sold for a grand total of \$10,000,000.

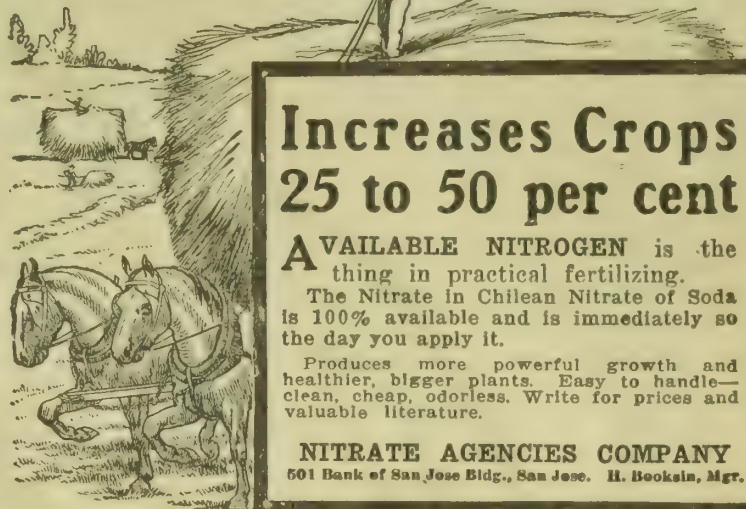
MISCELLANEOUS.

Imperial Valley is being invaded by English sparrows. They are said to be so numerous and pugnacious that they are running away more peaceable and more desirable birds.

The burnt ruins of the old mill at Merced have been rebuilt into a bulk grain elevator by Hulls and Boyden, old millers of the early days, who bought and shipped some of the last crop, even before the elevator was finished.

The Nicholls-Loomis Co., the well-known hay and grain dealers of Los Angeles, have bought three acres of ground in the heart of the industrial district, and have erected a commodious brick structure for the transaction of their business.

Nitrate of Soda



Increases Crops 25 to 50 per cent

AVAILABLE NITROGEN is the thing in practical fertilizing.

The Nitrate in Chilean Nitrate of Soda is 100% available and is immediately so the day you apply it.

Produces more powerful growth and healthier, bigger plants. Easy to handle—clean, cheap, odorless. Write for prices and valuable literature.

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24 hours a Day

Is your working day measured by the endurance of your horses or mules? Is it limited to daylight hours? If it is, you are handicapped in doing your work on time, efficiently—in doing it when it should be done, in the way you want it done.

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at your command. Read what one owner of two Caterpillars says:

"There have been no repairs, consequently no delays. During September we ran both engines 24 hours a day. The question with us today is—how did we ever farm without a Caterpillar?"

Think what it means to own a tractor you know is able to stand the gaff of long spells of day and night duty when necessary.

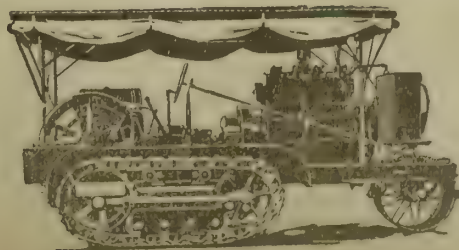
Only Holt design, Holt construction, Holt materials, Holt inspection, Holt service could make such results possible. For 35 years the name "Holt" has stood for the things that mean satisfaction and success for the buyers of Holt products.

Send for catalog C-344. It tells you all about the advantages of the Caterpillar—features not found on any other tractor—features you will want to know about before buying a tractor. It shows you the features that won for this tractor the highest awards at both California expositions—that have earned for it the name of "the world's greatest tractor."

The Holt Mfg. Company, Inc.

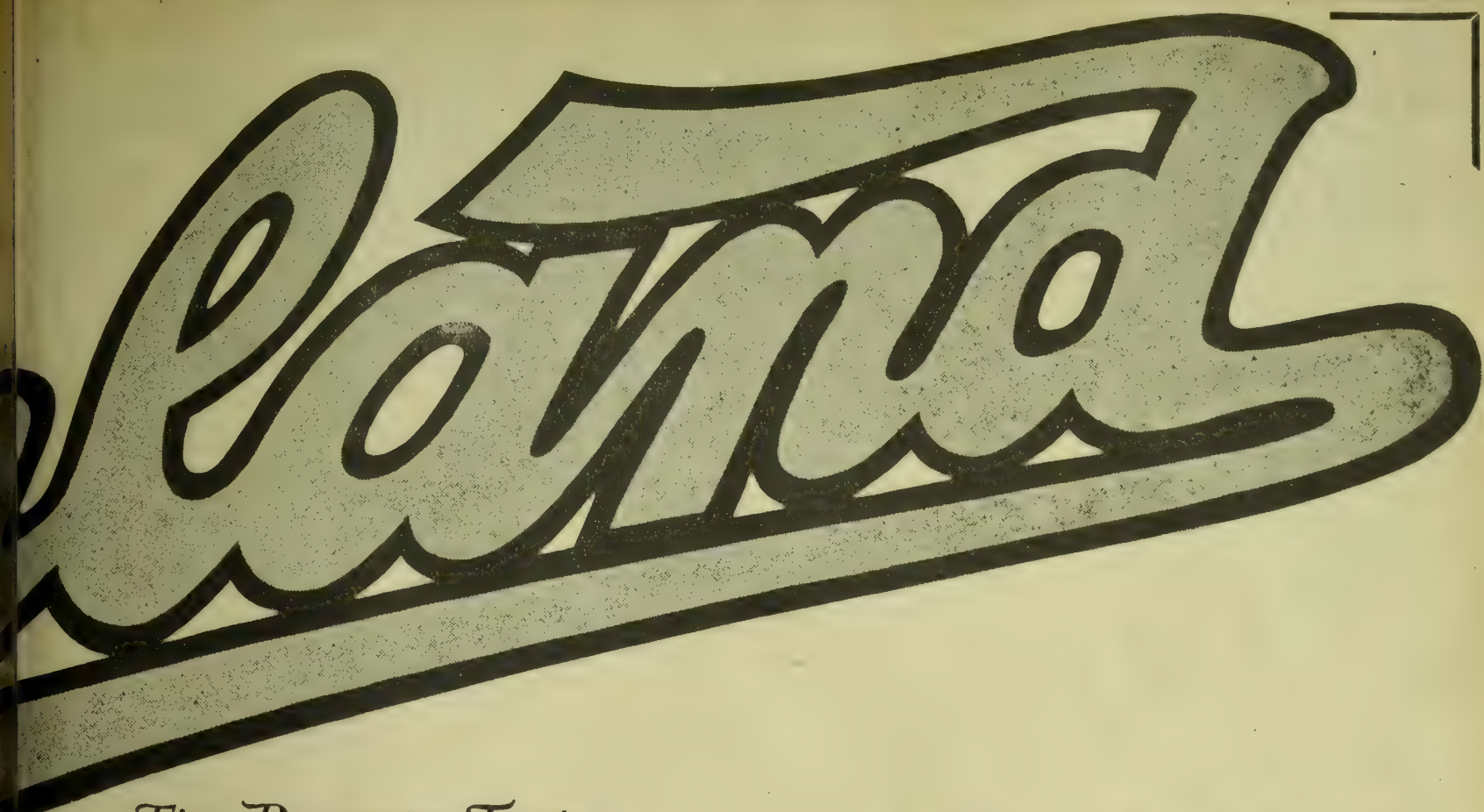
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Five Passenger Touring

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Roadster \$620

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Horsepower

630000 IN USE

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Already there are 63,000 in use.

The whole country is buying this Overland.

The demand is huge and steady.

Such smashing value was of course bound to make this the fastest selling complete automobile ever offered.

The motor is a wonder—full 31½ horsepower.

But though unusually powerful it is wonderfully economical—20 to 25 miles on a gallon of gasoline is the usual report.

It holds the road better, and rides more comfortably at all speeds than any other car of its size.

It has cantilever rear springs, four inch tires and an exceptionally long wheelbase for a car of its price.

No need to hesitate about buying a car with such a selling record and so many advantages.

See the Overland dealer today, get your \$635 Overland now and have it for some of the finest driving weather of the year,—while you've time to use it. Put up the side curtains this winter and go anywhere, anytime and in comfort regardless of the weather.

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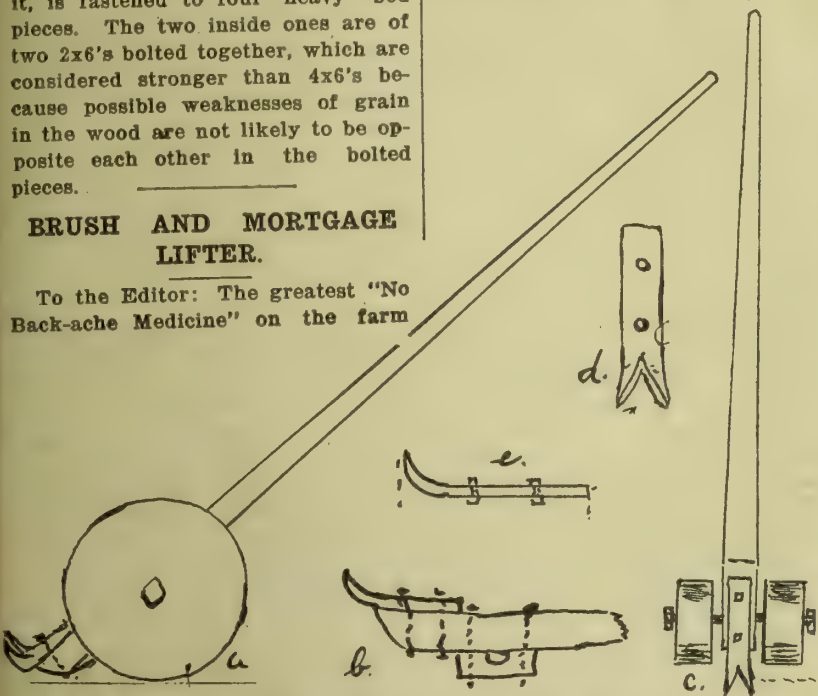
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Cost of Operating Engine.—The engine has been in use for three years, and the only repairs up to date, according to Mr. Krotser, were for natural wear on the ignition point; and that cost just 20 cents. The distillate used is 9 gallons per week of 8-hour days, boring steadily.

Solid Engine Bed.—If anything strains an engine and causes wear, it is a wobbly foundation. This engine, being mounted on a long wagon with well-boring gear at the end of it, is fastened to four heavy bed pieces. The two inside ones are of two 2x6's bolted together, which are considered stronger than 4x6's because possible weaknesses of grain in the wood are not likely to be opposite each other in the bolted pieces.

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To the Editor: The greatest "No Back-ache Medicine" on the farm



Handy Brush Puller—Better than Team and Chain.
(a) Wheel Cut from Log 4 Inches Thick, 10 Inches Diameter; (b) Block for Axle Bolt, 3x4½x8 inches; (c) Oak Handle 7½ Feet Long and 4½ Inches Square at Base; Axle 8 Inches from Jaw Pull; (d) Jaws Beveled like Hammer to Sharp Pulling Edge; (e) Side View of Jaw, Half-Inch Steel 3x10 inches.

for pulling brush, etc., is not patented nor will it be. I join your paper in making a present to farmers. With it one man can pull and burn ¼ to ¾ acre of brush per day much easier than two men with team and chains.

The cost of construction is \$0.80, for the two half-inch bolts four

Clean Up! Turn bush-land into cornfield, disk your roadsides and kill the chinchbugs. The **Cutaway** (CLARK) **Bush and Bog Plow**

does away with the bushknife, grubhoe and shovel—it's better, quicker and cheaper. The **forged sharp Cutaway** disks penetrate deep, cutting roots, turf and trash and pulverizing the soil. Splendid for deep tillage, a horse and 4 horse. Reversible. If your dealer has not the **genuine Cutaway** write to us direct. Be sure to write us for our new book, "The Soil and Its Tillage." Get your copy now.

THE CUTAWAY HARROW COMPANY
Maker of the original
CLARK disk harrows and plows
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It will even lift a mortgage if you build one of these tools and get some of that brushy land in cultivation.
Harrison Mitchell.

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Guaranteed 5 years, \$1 per sq. Write for sample.

PAINT, \$1.75 grade, now \$1.20.

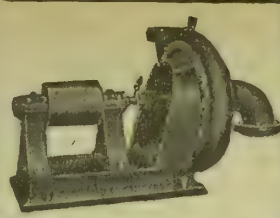
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PUMPS FOR EVERY SERVICE AND USE

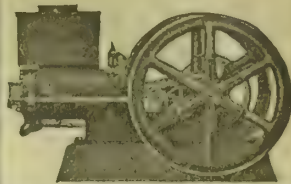
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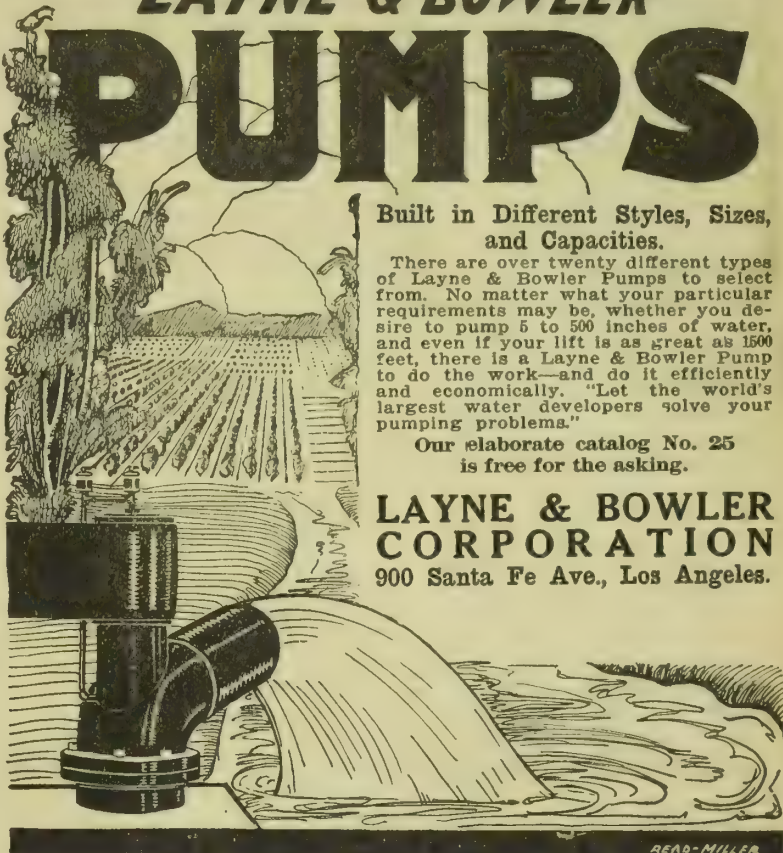
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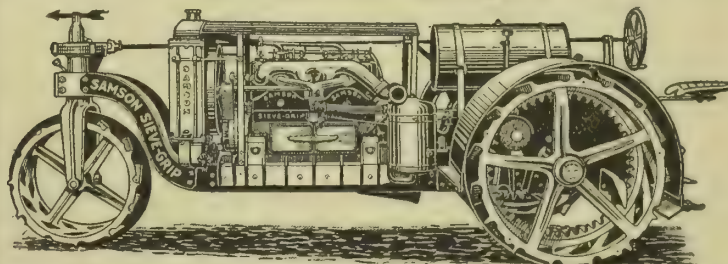
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An Early Order Will Assure Delivery When the Machine Is Most Needed. Write for Catalog PR-17.

TWO SIZES:

"Six-Twelve" \$725.00

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That's what every man does who owns **Properly Irrigated, Ditched, Tile Drained or Terraced Land**. And if you don't want to sell, your increased yearly profits are just like turning waste land into cash. Progressive land owners in every State and practically every county in the Union have discovered that the **only** way to bring their land up to the desired state of production is to get a

Bostrom \$15 Farm Level

and make spare days the most profitable days. Also fills the bill for Grading, Road Building, Foundation Work, etc.

The Bostrom Farm Level has been on the market over thirty years, the latest improved having a **Telescope with Magnifying Lenses** which enable you to see the cross on the Target a quarter of a mile away. **Man Size Tripod, Leveling Rod, Target, Plum-Bob** and full instructions included. Weight, 15 pounds. It is used and endorsed by Agriculture Schools and U. S. Farm Demonstration Agents, and you will endorse it, too, after using it—if not **Your Money Back**, including express both ways. Write today for description of Level and Telescope, details of our Money Back Guarantee, and names of Jobbers in San Francisco, Sacramento and Los Angeles who carry it in stock.

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She's The Money Cow

She makes use of every ounce of feed. Her milk is the richest of all the breeds in butter fat and solids. She is rugged and vigorous—will thrive in any climate. She milks steadily. She is beautiful and gentle. She's the mortgage lifter. She's the cow for the everyday farmer, yet she's the rich man's pride, too. And she's the cow for the family.

Our free book, "About Jersey Cattle," proves these things. Send for it now—a postal will do—it's interesting and instructive.

The American Jersey Cattle Club
330 West 23rd Street - New York City

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OPEN AND BRED GILTS
BOARS.
Breeding and Individuality
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Tagus Ranch

(Pacific States Corporation)
Hulet C. Merritt, Pres.
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TULARE, CAL., via TAGUS.

POLAND CHINAS

We have 20 head of good gilts and 2 two-year-old sows for sale. Either sired by or bred to I. B. A. Wonder, Reserve Champion at the P. P. I. E. Also a few extra good young boars ready for service sired by I. B. A. Wonder.

Also a fine lot of Fall pigs.

We please you or refund your money.

W.A. YOUNG, Lodi, Cal.

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DUROC - JERSEY BOARS

Deep Red. Big Bone.
Stout Build. Big Type.
April Boars now ready for service.

Ormondale Co.

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Mature Stock and Weanlings of both sexes. Sure to please.

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Livestock Facts and Fancies---VII.

[By the Editor.]

We have been talking a good deal about the ideal forms and characters of purebred animals of all kinds as they dawned in the mind of man and arose to realization in his breeding processes. We have also noted the influence of these purebred, selected and prepotent animals in transformation of nature's picturesque forms and capabilities to man's productive or achieving forms. We have glanced at landscapes of California communities, and of the State itself, in which these improved animals may predominate, driving from sight the inferior animals which may be masterpieces of nature's wisdom or man's folly, as the case may be. We anticipate the time when scrub forms will wholly disappear from farming landscapes, just as wild forms have from populated regions, for scrubs are as out of place in intelligent farming as lions and tigers would be in the shrubbery of Golden Gate Park. The scrub does not perform aright: it lacks efficiency and so, failing by this most modern test of value, the scrub must take its blue envelope and go, with other hoboes, to lurk in outer darkness.

And now we drop this line of exhortation and attack another which is fundamental and indispensable and which calls for incisive and insistent action. Although it is hard to find a man now-a-days who will deny that purebreds and high grades will make, as a rule, more meat in less time, more milk from the feed, more draft per pound of weight, more speed in less time, etc., etc., than the scrub, there is often ground for an argument that they do not yield money in proportion to the investment in money, care and the feeding which they need to do their best work. We will not argue this question from a world point of view, for that would rule out the objector's claim so conclusively that there could be no argument. If we take purebreds and their high grades everywhere, there is no doubt whatever that they are in every way more profitable than scrubs of their kind. Still it is true that in some places the grower does not get as much more money from their growth and products as he should. This state of things has existed here and there, in this country and abroad, from time to time, and world-wide testimony is that growers have helped themselves out of it. It has been demonstrated that there is no fallacy in the theory of the superiority of purebreds and their high-grade offspring and there is no room for doubt that when intelligently handled they will produce the value for which they are endowed, but will the grower get that value? That depends not upon what fine animals do for him but upon what the grower does for himself.

It is our conviction that, at the present time, California is a place where there is ground for the claim that the grower of fine stock does not get all that properly belongs to him, and that is not the fault of the growing but of the commercial handling of the product. Our methods of marketing are non-competitive and therefore they conceal and do

not disclose the relative values of good and poor animals. Therefore buyers do not bid upon the intrinsic values of the offerings of different growers. They are glad enough to get the best, but their chief thought is not of the best but of the poorest as well and they worship the "deadly average." They dare not pay just what each lot is worth for it might make the average too high to give the producer of good stuff what he deserves. They dare not offer the producer of bad stuff what he deserves, for they would incur his lasting hatred and free-speaking enmity. And so they go around squeezing the good toward the bad and the bad toward the good, and there is no such discrimination according to quality as there should be, and the man who buys purebred sires and puts lots of money and time in the equipment and supplies for first-class animal husbandry, looks at his check from the buyer and wonders whether he isn't an ass to conceive of and pursue high ideals.

Of course this is not all that there is wrong in the California situation as we see it, but it is a simple fundamental thing and good foundation for an exhortation. It is an old trouble and is not at all confined to animal products. It has discouraged all who have tried to make particularly good products of anything, but it has never been proven in any of them that a good product is not better and more profitable than a bad one. The problem is to get the difference for the good goods, and that is no fault of the goods themselves but in the handling of them. Our fruit producers have come nearer than any other class of California farmers to getting this difference recognized and handed over to them. They have done it by organization, by finding out what is the matter, by grading and standardization, by fixing prices in some cases and by establishing competitive buying in others and so on. In this way the producer of good goods gets what belongs to him and the producer of bad goods gets bounced until he reforms. It is easy enough when you know how. In Europe and in animal product lines it is the glory of Denmark, the greatest agricultural triumph of organization in England, and the economic hope of Ireland. The continental countries of Europe are largely indebted to it for the wonderful endurance in war which they have manifested. It is one of the surest things on earth!

We have said it is easy when you know how, but it is not easy to know how. One of our associates has given considerable time to a quiet inquiry into California conditions, chiefly, as they appear to those inside the present going of the meat business—a part of which was offered to the reader in last week's issue. We propose to keep digging away, hoping to disclose something which will be really helpful in understanding our present commercial meat handling in California and in improving it. But how can the conditions and situations be improved?

There is only one way. The pro-

Breeders' Combination Annual Sale

Shorthorn CATTLE

at
PORTLAND UNION
STOCK YARDS,

December 7, '16

30 Bulls 35 Females

From the well-known Breeders
—of—

Oregon, Washington
and
California.

This sale surpasses anything we have ever offered at these sales before, both in breeding and individual merit.

There will be no better place to secure high class SHORT-HORNS than at this sale.

For Particulars and Catalog
Address

Frank Brown
CARLTON, OREGON.

MONTELENA HERD

Large Yorkshire Swine

THE IDEAL HOG
FOR THE
PROGRESSIVE FARMER.



MONTELENA BIG DICK.
First Aged Boar and Reserve Grand
Champion.

Won 9 prizes
With 8 entries
at Sacramento.
Young stock
for sale—both
sexes.

A.L. Tubbs Co.
Calistoga, Cal.

ducers must help themselves here, as they have everywhere else, by organization which enables them to pursue authoritative inquiry into facts and causes and, having learned these, they will probably have strength and wisdom to do the next thing. Is San Francisco the lowest stock-selling market in the country? If so, why? Are the growers getting what belongs to them, or is someone else getting it? If growers do not, why? If they do not, what has to be done to get it? These are questions which only an inquiry in the interest of growers can answer. If they organize for it they can get expert help. If they appeal to the Division of Markets of the U. S. Department of Agriculture they can probably get an inquiry without fear or favor, and that is what they need. The government is doing this sort of thing in all parts of the country in the interests of producers and consumers, but the government is not going to do much for a lot of people who do not show they care what they get except as they go off in fence corners and bellow and squeal over it.

It is really too bad that we have no general stock-growers' association in this State which has the collect-

ive strength and readiness of the mass of plain stock people. Efforts at organization hitherto have interested chiefly the big interests. Their purposes have been too exclusive and their costs of membership too high. Some day we shall have, we hope, a really popular organization in which all can participate. But we do not need to wait for that. We have a California Swine Breeders' Association which is popular and reasonable in its purposes and requirements. Next January it will hold a convention in Los Angeles. If it should lay out its program for that meeting so that the chief addresses and discussions would uncover marketing situations and conditions in this State, and get the great hog handlers and the growers together in frank conference, the chances are that things very important and significant would be better understood, and the Swine Breeders could then make their declarations and lead all other stock-growers into organization which would have power and wisdom to do the things which need to be done. There is only one way to do things, and that is to do them. The Swine Breeders have a chance to lead toward the doing.

How Good is Your Grade Cow?

[Written for Pacific Rural Press.]

Do good dairy cows just happen or can you depend on getting them by intelligent breeding, selection, and feeding? It was to show by practical illustrations in California

with a test of 3.4 per cent fat; also a seven-day record of 550 pounds of milk containing 18.5 pounds of butterfat.

Writing of this cow's work Messrs.



Her Third Pair of Twins in 22 Months, Sired by a Registered Bull.

that breeding, selection, and proper feeding are essential to the dairyman's welfare that this journal suggested in 1915, the holding of a State dairy cow competition under the auspices of the University of California, and later donated a liberal monthly prize for contestants.

As we have previously written, it seems certain that good breeding will play an important part if past experiences are any criterion. In this connection we are reproducing a photograph of a grade cow and her calves owned by Leedom and Son of Merced county, which has given as much as 75 pounds of milk a day

Leedom say: "This is a picture of one of our cows and her twin calves, the third set she has dropped in 22 months. She is not a registered cow, in fact our whole herd of 22 head are only high-grade Holsteins, although we always keep a registered bull."

If owners of such cows will enter them in the coming competition they will not only receive financial benefit themselves but will do a great good for the dairy industry of the State as well. Application blanks and full information about the contest may be secured by writing to F. W. Woll, University Farm, Davis, Cal.

UNIRRIGATED SUMMER FEED.

Few dairymen in San Luis Obispo county make a year-round job of milking because of the scarcity of wild pasture in the late summer and early fall months.

An exception to this rule is found on the dairy of Forest W. Wood, who has a steady demand for milk among his retail trade that necessitates a different system of management than pasturing alone.

Alfalfa hay is purchased in quan-

ties; but its expense warrants the substitution of as much home-grown feed as possible and this is amply supplied by silage.

With the exception of about six weeks in the year, silage constitutes a part of the daily ration of the cows, a 100-ton silo answering this purpose admirably. It is more than filled from the 15 acres of bottom land planted each year to corn. As the silage usually lasts till late summer, green feed is provided the balance of the time with green corn.

Bishop's Shropshires

Winnings at Sacramento

GRAND CHAMPION RAM. GRAND CHAMPION EWE.

Aged Ram, First. Yearling Ram, First and Second.

Ram Lamb, Second. Aged Ewe, First.

Yearling Ewe, First and Second. Ewe Lamb, Second.

Pen of 4 Lambs bred and owned by exhibitor, First and Second.

Also American Shropshire Special First and Second for Pen of 3 Yearling Ewes.

In the Middle Wool Type Class won; Pen 3 Ram Lambs, First and Second; Pen 5 Aged Ewes, First; Pen 5 Yearling Ewes, Second; Pen 5 Ewe Lambs, First and Second.



WINNINGS P. P. I. E., 1915.

Aged Ram, First and Second. Yearling Ram, First. Ram Lamb, First, Second, and Third. Champion Ram. Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of Sire, First. Pen of three Lambs, bred by Exhibitor, First and Fourth. Pen of Four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock, one year old, bred by Exhibitor, First. Flock under one year, First. Flock under one year, bred by Exhibitor, First. Produce of Ewe, First, Second and Third. Premier Championship for Breeder. Premier Championship for Exhibitor. A total, including American Shropshire Specials, of 15 Firsts, 9 Seconds, and 6 Championships.

Purebred Registered Rams and Ewes. Individuals or Carload Lots.

Champion Ram P. P. I. E.

PUREBRED REGISTERED RAMS AND EWES, Individuals or Carload Lots.

BISHOP BROS.

SAN RAMON,

CONTRA COSTA CO., CAL.



(No. 280 BB)

HERCULES SADDLE

—BB stands for big-bulge—some want an 18 inch bulge.

—No. 280 is made on a Visalia tree, the foundation of a good saddle.

The Best Saddle we can make

Hercules Saddle No. 288 BB is made of our heaviest stock and widest widths; three inch stirrup straps. Weight complete 40 pounds.

The best Saddle to be had for \$48.

The kind for the man to have who "lives in the saddle." It wears well. All discriminating dealers carry it. Ask for Hercules.

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THREE BLOCKS FROM THE FERRY

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Please send me, free, a copy of your readmap
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KINGS COUNTY JACK RANCH

BREEDERS AND DEALERS

AMERICAN JACKS AND JENNETS.

LARGEST HERD IN THE COUNTRY.

80 Head Jennets

40 Head Jacks

CAN SUPPLY YOUR WANTS AT ALL TIMES.

Write, or Come and See Them.

John Burrell, Proprietor

E. B., Box 73.

Hanford, Cal.

Sales barn in Hanford near S. P. Depot.

Live Stock and Dairy Notes.

[Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

DAIRYING AND DAIRYMEN.

N. H. Locke has taken a show herd of his registered Jersey cattle to the Arizona State Fair which is held at Phoenix.

Alexander and Kellogg of Suisun report a heavy demand for Milking Shorthorn bulls of serviceable age. They have eight head of cows on official test at this time.

The Sacramento spring sale of registered Holsteins, under management of the Calif. Breeders' Sales and Pedigree Co., will be held at State Fair Grounds May 25 and 26 next.

Irving D. Ewart of the Success district, whose ranch is particularly adapted to dairying, has just purchased from F. D. Helm of Fresno 25 head of very choice registered Holstein-Friesian cows.

J. W. Benoit of Modesto, a Holstein breeder, says his herd averages 70 pounds of milk daily. He attributes his high average to a ration composed of crude molasses, alfalfa meal, rolled barley and oil meal.

The Modesto Milk Products Corporation of Delaware is installing a milk supply station at Crows Landing to receive the product of more than 1000 cows from that section. This will increase its present output.

Lester A. Driver of Nicolaus purchased a fine young herd bull at the Sacramento Holstein sale on Oct. 26 and 27. His sire is from Aralia de Kol, who was the first cow in the world to produce 28,000 pounds of milk in one year.

Jas. McGilvarey of Sacramento county has recently purchased a large ranch near Galt and announces that he will start development work on it at once with the idea of making it the future home of his large herd of registered Holstein cattle.

The Jersey cow Gertrude, owned by A. J. Morey, leads the list for the best butterfat producer in the Orland cow-testing association for the month of October. David Brown's Durham is second on the list. The predominating breed of cow is Jersey, fully 60 per cent of those tested being of that class.

F. Stenzel reports recent bull sales to the following: Herman Berg Marysville; Braun Bros., Rio Vista; W. B. Knight, Vallejo; D. McIsaacs, Tocoloma; J. T. Martin, Arizona, and Howard Shaffer Estate, Rio Vista. The last named firm secured Aggie Grace Pontiac Creamelle, a brother to the California champion 2-year-old and out of a 23-lb. cow.

Among others who are taking advantage of the winter months to do official testing with their purebred cattle is the Henderson Co. of Sacramento county who have several head on weekly and 30-day tests at this time and who expect to test everything that freshens during the next few months. Superintendent Jay Dutler has the cattle in good physical condition and expects some very creditable records.

Permanent organization of the Sacramento Valley Milk Producers' Association was effected at a meeting of the promotion committee of the organization, held in the Travelers Hotel Nov. 11. J. M. Henderson, Jr., was elected president and J. H. Guill, Jr., of Chico, Secretary. President Henderson appointed a committee consisting of F. H. Harvey of Galt, John Watson of Dixon and F. L. Morris of Woodland to draw up tentative articles of incorporation, to be presented for ratification at the next meeting of the committee.

BEEF CATTLE.

W. Bemmerly of Yolo county has just purchased a new herd sire in the East for his herd of registered Herefords.

The 1916 annual convention of the California Cattlemen's Protec-

tive Association will be held at the Palace Hotel, San Francisco, Nov. 25.

The decision of the Cutler Bros., near Visalia, to build up their herds with blooded Herefords, is taken among cattlemen to be a decided forward step. Dairy herds are even now being built up rapidly, but the range cattle still roam at will.

C. A. Noyes and Son of Sutter City have recently purchased a registered Hereford of Prime Lad breeding from the University of California. She is bred to Cal. Prime Lad and will be added to Messrs. Noyes' foundation herd of good Herefords.

Oakdale shipped a car of calves to Los Angeles over the Santa Fe last week. This is the first shipment made from Oakdale to Los Angeles, as practically all of the livestock grown in this section has always gone to the San Francisco and Seattle or Portland markets.

The California Protective Cattlemen's Ass'n will hold their regular annual meeting of the Palace hotel, San Francisco, November 25. An interesting program has been planned and matters of general interest to the cattle interests of the State will be discussed.

D. J. Stollery, business manager for the Howard Cattle Co. advises us that he closed a deal last week whereby all of the cattle on the Howard ranches are sold and the ranches themselves leased for a term of 10 years. The herd of registered Shorthorns formerly maintained by this company were sold to the Palacios Ranch Co. last year.

SWINE.

Members of the Modesto Farmers' Union recently shipped their second pool car of hogs to San Francisco and the stock proved to be of such quality that the price secured was over a cent per pound above the market.

C. A. Noyes and Son of Sutter City have recently sold registered Poland China boars to the following parties: Louis Clarke, Henrick Heinsen and Mrs. E. Robinson. All of these boars were sired by their herd sire Sutter King, a son of Chief Picture and out of Candy King, grand champion sow at Sacramento in 1914.

C. H. Woodward of Tulare has about 100 head of old and young pigs. He has been able to hook a grinder onto his pump motor and is feeding them a ration of ground gyp and alfalfa. He runs the head of the gyp right through the grinder without the bother of threshing. He soaks the alfalfa and corn in water.

It is very gratifying to see the number of silos being put up in Tulare and Kings counties. The reasaw silo is the most popular, though we saw quite a number of DeLaval, Remco, and other makes of silos that had been put up in the last year. Milo maize and field corn are most generally used to fill them.

The pig-feeding contest between the Chino and Ontario grammar schools, just finished, was spoiled by the high price of feed. Earl Remington, a prominent Chino ranchman, furnished the sucking pigs to the children and offered suitable cash prizes to those that grew the fattest pig within a given time. There were thirteen pigs in the contest. The other day they were gathered up and taken to the San Antonio Meat Market at Pomona, where they were pronounced too poor for market. The children's excuse was that they could not pay the high price for feed necessary to make them fat.

SHEEP.

Bishop brothers of San Ramon have sold 15 head of registered Shropshire ewes to C. A. Noyes and Son of Sutter City, for foundation purposes.

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2 1/2c per word.

SWINE.

Poland Chinas.

SMITH'S POLAND-CHINAS—Sows and gilts bred to Joker, First Prize Boar at the Wisconsin State Fair, 1915. These sows and gilts, sired by Iowa Wonder, who is a son of A. Wonder, the most celebrated Poland-China boar, living or dead. Litters from this mating are the best I have ever seen anywhere. Prices low quality considered. Will sell one or a carload. As a special inducement each purchaser will be given a year's subscription to the American Swineherd, the best swine paper published and a copy of the Handbook on the Sow; also a copy of the Pig Feeders' Manual. Geo. A. Smith, Corcoran, Cal.

MAKE BIG MONEY with our big-type Poland-Chinas. Smooth, easy feeders that make greatest weight in shortest time at lowest cost, topping the market at 225 lbs. in 6 months. 300 head, both sexes, all ages, reasonable prices. Some fine bred sows and gilts, and top quality young boars. Best Eastern blood lines. Satisfaction guaranteed. Ranch in Tulare county, but address owner, E. H. Whitten, Route 6, Box 647, Los Angeles.

GRAND CHAMPION SUPERBA POLANDS—A few choice spring Superba boars ready for service. Sows bred to Superba for fall litters. Prices reasonably low. Rough's Greenfield, Arlington Station, Riverside, Cal.

REGISTERED POLAND-CHINA BOARS of serviceable age. A Wonder and Chief Picture breeding. Every animal guaranteed. Price \$25. Bar N. Ranch, E. A. Noyes & Son, Props., Sutter, Cal.

POLAND-CHINAS—Bred gilts, \$15; young sows, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated, purchaser to return crates. E. A. Hall, Watsonville, Cal.

REGISTERED POLAND-CHINAS—Prolific, pabulous, profitable porkers. Choice boars now ready for service, \$25 each. Weanlings, \$15. Dr. J. A. Crawshaw, Hanford, Cal.

LAKEVIEW STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. W. Hauck, Alton, Humboldt Co., Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Linn, Linview, Route 4, Modesto, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trewitt, Box 824, Hanford, Cal.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

POLAND CHINA HOGS FOR SALE—Registration papers furnished free. O. A. Conley, Durham, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Brownings, Woodland, Cal.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 274, Davis, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

REAR OAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for Fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

ABOUT BERKSHIRES—You know Frost? He publishes the "Berkshire World." He says of one of our herd boars—Mayhew Leader 6th—"A grand hog—one of the very best to be found in America. This boar is a son of the World's Fair Grand Champion Grand Leader 2nd, owned by the great breeder, A. B. Humphrey." We shall be pleased to book a few orders for the get of this splendid boar out of some of our leading sows. Write to Butte City Ranch, Home of Good Berkshires, Box P, Butte City, Cal.

WINONA LAUREL 5th—a junior yearling show daughter of the famous Laurel Champion in pig for Dec. 24th farrow to the grand champion Big Four Winona Ranch, R. 1, A-Rox 105 Grants Pass, Ore.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

CHOICE REGISTERED BERKSHIRES—Line bred Rival's Champion's Best and Masterpiece pigs, \$15 each, prior \$40. Service boars, bred sows, and gilts at reasonable prices. W. H. Waugh, Riverside, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

BARGAINS IN BERKSHIRES—Write today for our Special List of high-class boars and open gilts. Both the offerings and prices will please you. Silver Birch Farms, Box P. P., Newnort, Wash.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Weanling pigs, \$10 each. G. A. Casey, E. 7, San Jose.

SPECIAL—Six good service boars and a few sows in pig to Premier Leader due to farrow in October. Geo. M. York & Son, Berkshire breeders, Modesto, Cal.

REGISTERED BERKSHIRES—For sale, bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

REGISTERED BERKSHIRES of prize-winning blood. Write for description and photos. Imperial Stock Farm, Morgan Hill, Cal.

ROSE CREST BERKSHIRES—Rivals Champion best blood. Open and bred gilts. Service boars. F. L. Hall, Fortia, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

BERKSHIRES—Carruthers Farms, Mayfield, Cal. Second annual sale, August 2, 1917.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

CHAS. GOODMAN—Breeder of high-class Berkshire Swine. Williams, Cal.

Duroc-Jerseys.

DUROC JERSEYS—My hogs won highest honors at State Fair, taking first prize herd, first prize sow, second prize boar. Were the largest of their age exhibited. Stock all ages for sale. Prices reasonable. Breeding and satisfaction guaranteed. Haden Smith, Route 1, Box 84D, Woodland.

DUROCS from River Bend Farm, St. Helena, Cal., are large type, smooth, rangy, with fine backs and deep cherry color. We sell only those we like to keep in our herd. Don't write us if you want cheap stock.

RANCHO RUBIUS DUROCS—A few choice gilts bred for October farrowing; also good service boars, tried sow and weanling pigs, priced right. Elmer Lamb, Ceres, Cal.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

DUROC JERSEYS—Herd boars. E. M. N. Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

REGISTERED DUROCS of guaranteed breeding. All ages. Weanling pigs \$10. H. B. Boudier & Son, Napa.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class pure-bred hogs, both sexes, any age.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROCS—All ages. Either sex. W. A. Pack, Hollister, Cal.

REGISTERED DUROC-JERSEY SWINE—D. L. Henley, Lemoore, Cal.

REGISTERED DUROC JERSEY SWINE—Frederick M. Johnson, Napa, Cal.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

Other Breeds.

BILLIKEN HERD OF IMPROVED CHESTERS—Prize winners at the State Fair. The Farmer's Utility breed. Size combined with quality; producers of big uniform litters of growthy pigs. 15 bred gilts due to farrow in Jan.; boars and sows of spring farrows; first class and extra well developed; best blood lines obtainable; prices reasonable and every one cholera immune. Write for special prices and circulars. C. B. Cunningham Mills, Cal.

LARGE YORKSHIRE SWINE—Gilts to farrow in September and October. Service boars and Spring pigs. Both sexes. Riverina Farms, Paradise Road, Modesto, Cal.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistota, Cal.

REGISTERED IMPROVED CHESTER Whites—Grizzly Bear Ranch, East Auburn, Cal.

DAIRY CATTLE.

Holsteins.

REGISTERED HOLSTEINS—Grandsons of Pietertje Maid Ormsby. World's record 35.56 lbs. when made. Average test 5.51. Also related to Duchess Skylark Ormsby, present world's record of any age or breed, 1508.95 lbs. butter in a year. George Kounias, Modesto, Cal.

REGISTERED HOLSTEIN BULL CALVES—Sired by Lorena Kornidky Alcarra, whose dam made 29.75 pounds butter fat in record dam as a four-year-old. J. M. Campbell, Escalon, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow, Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

REGISTERED BULLS by King Kornidky (Pontiac and out of A. B. O. cows. A splendid selection old enough for service. Write or call. J. H. Harlan, Woodland, Cal.

TULARE GUERNSEY AND HOLSTEIN Farm is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

A NICE YOUNG SON from El Prado Wayne Colantha and from a 24.26 lb. dam. J. W. Renoit, Breeder of Registered Holsteins, Route C, Modesto, Cal.

THE MCLOUD RIVER LUMBER CO., McCloud, Cal.—Highclass thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

WANTED—High-Grade Holstein Milk Cows. Interested in nothing but the best. Address Box 340 Pacific Rural Press.

THE HENDERSON CO.—Breeders and importers. Registered Holsteins. Sacramento Bank Bldg., Sacramento.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chino, Cal.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier High School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons, Corp., Importers and Breeders, Woodland, Cal.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

SUNNYSIDE HERD—Registered Holsteins. B. F. Quinn, R. 3, Box 58, Visalia, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. O. L. Morse, Route E, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto, Cal.

REGISTERED HOLSTEIN BULLS, \$50 to \$150. Glorietta Stock Farm, Woodland, Cal.

HOLSTEIN COWS for sale with records. Dr. Stilson, Napa, Cal.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route E, Modesto, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Calif.

Jerseys.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3 lbs. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

VENADERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly record. Guy H. Miller, Route 1, Modesto, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs. butter as two-year-olds. A. A. Jenkins, Tulare.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

YOUNG REGISTERED JERSEY BULL CALVES at reasonable prices. O. J. Ames, Oakdale.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

Other Breeds.

GUERNSEY BULL CALVES from Grand Champion Bull. Also Hampshire Swine, both sexes from Grand Champion 700-lb. boar and Grand and Junior Champion Sow. Bella Vista Herd, J. W. Henderson, 1st National Bank Bldg., Berkeley, Cal.

EDGEWOOD FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgewood Farm, Santee, Cal.

BREEDERS OF REGISTERED SHORT-HORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

FOR SALE—Two purebred Guernsey bulls. Advanced registry breeding. E. L. Skidmore, Route C, Tulare, Cal.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Rambouillet and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

KAPPE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers of Shropshire.

CHAS. KIMBLE—Breeder and Importer of Rambouillet. Hanford, Cal.

HORSES AND MULES.

STOCKTON PERCHERONS again winners at Sacramento. Get next brother farmer. H. G. Learned, Producer, Stockton.

REGISTERED SHIRES—Black Hawk Stock Farm. Importers and Breeders, Easton & Ward, Producers, Burlingame, Cal.

FOR SALE—Registered Percheron Stallion. Address E. I. P. Horse Ass'n, R. 5, Box 32, San Jose.

MISCELLANEOUS.

SAN FRANCISCO LIVE-STOCK EXPORT Co., Eugene R. Croley, Manager, solicits foreign orders for purebred registered and merit breeding animals and fowls. California has great diversity of climatic and other conditions that enable us to select animals that have been raised under conditions similar to those of the location for which they are intended. We should be informed regarding these conditions and be allowed ample time to make selections. Nearly all disappointments in buying afar are the result of insufficient information as to conditions or to lack of time for proper selection. Our plan and terms for "raising animals to order" to fit into peculiar foreign conditions is worth investigating. References: Dun or Bradstreet, or San Francisco banks. Office 219 Underwood Building 525 Market St. San Francisco.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for pig hogs. Geo. H. Croley Co., Inc., 531-537 Brannan St. San Francisco.

FOR SALE—Dairy Shorthorn Bulls. Also Halfa Meal. I. T. Grounds, Route E, Box 21 Fresno, Cal.

D. O. LIVELY, 218 Hobart Building, San Francisco, buys and sells livestock—any kind—any quantity.

DUROCS AND GUERNSEY BULL CALVES bred to 900-lb. boar. Ed. H. Johnson, Ukiah, Cal.

Manuel Moneese, who ranged his sheep in the Mocho district, near Livermore, last winter and spring, sold out his holdings, about 1,000 head, last week, at a uniform price of \$10 a head.

TILLY ALCARTRA IS MAKING HIGH FIVE-YEAR RECORD.

[Written for Pacific Rural Press.]

A. W. Morris and Sons report that they expect Tilly Alcartra to complete her fifth year in milk with a total of 125,000 pounds for the five years. She is now in the sixth month of her lactation period and is producing, under official test, about 84 pounds of milk a day. The daughter of this great cow, Tilly Alcartra De Kol Burke, has freshened with her first calf and is reported to be doing about the same as her dam did at the same age.

One of the most promising cows in this herd at the present time is Aaggie Acme of Riverside 2nd. She already has a semi-official record of 1095 pounds of butter in 365 days and since freshening last week has been milking 80 pounds milk a day. Her average test during previous lactation periods was 4.47 per cent. A half interest in her son, Sir Aaggie De Kol Acme, was recently sold to F. Kiesel and Messrs. Morris and Kiesel intend pushing his heifers to the front.

Another cow in the herd that is doing well is Ignaro Creamcup, a half sister to Aralia De Kol and one of the last daughters of Ignaro De Kol. Since freshening July 1, she has been milking an average of 95 pounds of milk a day. This indicates that she will beat her previous record of 22,000 pounds of milk in a year, made as a five-year-old.

A new test barn has just been completed on the Morris ranch with a capacity of 16 cows and during the coming month a large number of cows, just freshening, will be put on test.

SHORTHORN BREEDERS TO ORGANIZE.

For several months there has been more or less talk of forming a California Shorthorn Breeders' Ass'n in order that breeders of purebred cattle might more easily co-operate in promotion work for the breed.

The continued agitation has at last found expression in a joint letter sent out by Mr. Chas. Hawkins of Hollister and Mr. David J. Stollery of San Francisco, to all purebred breeders in the State, calling a meeting at the Palace Hotel, San Francisco, December 11 at 2 p. m.

It is proposed to discuss the various angles of the Shorthorn situation at this meeting and decide upon definite objects toward breed promotion. It is also probable that selection of officers will be made at that time and steps taken toward immediate action on several matters that seem of unusual importance.

All breeders are invited and from the expressions heard from prominent breeders so far it seems certain that the meeting will be well attended.

BEEF CATTLE.

SCOTCH AND SCOTCH-TOPPED SHORTHORNS—We have the largest herd of straight Scotch cows in California. Foundation stock of both sexes for sale; also a choice lot of range bulls. Barco Ranch, Hollister, Cal.

FAIR OAKS RANCH Willits, Cal.—Young registered Shorthorn bulls for sale. Sired by Landseer 379318, grandson of Imported Villager 295884.

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

CROLEY'S CALF FEED with skim milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords. Newman, Cal.

REGISTERED HEREFORDS—H. H. Galt, Diamond C Ranch, Esposito, Cal.

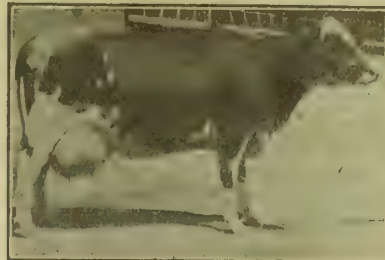
GEORGE WATTEKSON—Breeder registered herds. Bishop, Cal.

SHORTHORNS—Carruthers Farms. May field, Cal.

DOGS.

THOROUGHLY BRED SCOTCH COLLIES—All bred from our noted prize-winners. Have a few 3 months old puppies—very choice. Write us what you want. Brownale Kennels, Redwood City, Cal.

Breed for Butterfat



Beryl Clothilde Hengerveld, Champion in Butter-fat Contest, Sacramento, 5-day record, 21.11 pounds, test 4.7 per cent.

The quickest and surest way to make your Holstein herd more profitable in spite of high cost of feed is to introduce blood from high-testing ancestry.

My herd has a larger percentage of high-testing cows than any other herd in the State.

My young herd bull, **DUTCHLAND SIR PIETERTJE CREAMELLE**, has high-test breeding, and is transmitting this breeding to his sons and daughters. Your tested daughters have records averaging 21 pounds, all testing better than 4%. One of these, Clothilde Pontiac Creamelle, is California Champion 2-year-old, with a record of 22.52 pounds at 2 years 1 month; test 4.72%.

Have a few fine young bulls that will soon be ready for service.

WRITE OR CALL AND SEE THEM.

F. STENZEL

Breeder of High-Test Holsteins.

SAN LORENZO,

CALIFORNIA

Do You Need a Herd Bull?

THIS IS YOUR OPPORTUNITY.

We Offer King Spofford Mead at \$250.

In our judgment there has never been a better one offered for the money. We base our opinion on the following facts:

His sire is **KING MEAD OF RIVERSIDE**, whose first five two-year-old daughters average in yearly test 14,325 pounds milk and 720 pounds butter, average test 4%. Two of these made over 21 pounds in 7 days, and with second calf four have made 26.17 to 28.46 pounds butter. The only one with second calf that has been tested for the year made, running out with the herd, 1,095 pounds butter and 19,577 pounds milk, averaging 4.47% fat.

His dam, **LINDEN SPOFFORD PROMISE DE KOL**, made in official test 26.72 pounds butter in 7 days, 103.5 pounds in 30 days and 842.85 pounds butter from 18,177.8 pounds milk in one year, average test 3.7. With her first calf she made 625.48 pounds butter. She is a large light-colored cow, a consistent performer year after year, and carries a well-balanced udder.

KING SPOFFORD MEAD was born February 13, 1916, is beautifully marked, perfectly straight back line, in fact his conformation would be difficult to fault.

If you want exceptional value for your money, don't delay, but secure this bull. Write, or wire today.

A. W. MORRIS & SONS

Woodland,

California

PERFECTION

IN PRODUCTION, FORM AND COLOR.

We breed for uniformity, both in form and color and production at the pail.

One of our herd sires is **Supreme Gilsta Pietje**, whose 15 nearest female relatives average more than 31 pounds of butter in 7 days.

His dam is the famous **Gilsta Eglantine**, who made 32 pounds in 7 days, and who twice has made better than 128 pounds in 30 days, with a full sister and a dam who both have made better than 32 pounds.

His dam and granddam not only are 32 pound cows, but **Ybma Spofford 6th**, his grandire, holds the world's record for transmitting power, 87.5% of his daughters making better than 31 pounds in 7 days.

He is just as strong on his sire's side, he being **Woodcrest Pietje Ormsby**, grandson of **Pietje 22**, world's record-holder for 6 months.

We have a few choice sons of this full for sale.

FOR PRICES AND PEDIGREES, WRITE TO

HENDERSON COMPANY,

5th and J Streets,

Sacramento

Digester Tankage

Send for Sensible Folder on Feeding Hogs

WESTERN MEAT COMPANY

Animal Food Dept. 704 Townsend St. San Francisco

Soil Building With Legumes and Cows.

The success achieved by a "tenderfoot" farmer on a wornout soil; and why he progressed from a buyer of condensed milk to the breeding of purebred Holsteins.

[Written for Pacific Rural Press.]

When R. F. Fischer purchased his present ranch of 150 acres in Humboldt county he was decidedly a "tenderfoot farmer." For a great many years he had been division superintendent for a large railroad company in the Philippine Islands with no direct or indirect interest in agriculture.

In view of his past occupation and the further fact that he did not go to Humboldt county to purchase land, but to take a much-needed vacation, it is not surprising that a very enterprising real estate dealer was able to sell him one of the worst run-down farms in the community.

That was four years ago, and since then some surprising things have occurred on Riverview Farm, as the ranch is now called: things which nobody in the neighborhood suspected would ever be accomplished on the ranch and particularly by a "tenderfoot." But it took this ex-division superintendent a whole year to find out the run-down condition of the ranch.

Oats and barley hay had been the favorite crops grown on the place for years before; and were relied on by the new owner. But the first year's crop from the rolling hills and the few pieces of high bench lands that had been planted the fall before, convinced even the Fischer household that something had to be done for the soil and done quickly, too.

Normally the district's chief occupation was dairying, but that had been one of the things the Fischers had struck from their list of possibilities. For the first year they even bought condensed milk in preference to milking a family cow.

But that first hay crop changed many a preconceived idea about what they would grow and how they would dispose of it. Their soil lacked two things, nitrogen and humus. These two essentials could be secured easiest under their conditions by growing leguminous crops and spreading manure. They learned that the two went well together, as the legume crops supplied feed rich in protein, which, when fed to dairy cattle and supplemented with other feeds, rich in carbohydrates, would bring cash returns and supply the manure needed to make bigger crops.

And so after more than a year, a definite policy of improving the soil was mapped out. A few cows were purchased to consume the surplus hay on hand; and late in the fall 50 pounds of common vetch seed was sown to the acre together with 125 pounds of oats.

But the oats smothered the vetch, instead of cutting a heavy crop of hay rich in protein another ton to the acre crop of oat hay was harvested the next spring.

Things at that time certainly didn't look promising for the building up of that hill soil with legumes. But the other end of the combination, dairy cows, was running true to form. There was a continual supply of manure from the dairy and by spreading this over the land with

a manure spreader as soon as practicable and immediately plowing it under, a noticeable change was apparent in the small acreage covered.

Dairy Became Interesting.—The queerest part of that dairy herd though, was the change it made in the Fischers' way of thinking. They were learning more things about farming than they ever supposed existed and not the least of these was the fun in getting on intimate terms with a dairy cow. They found that they could do a lot of regulating with those cows by proper feeding and breeding, and this was made still more of a game by taking out a membership in the local cow testing association. Now they learned which cows they were keeping and which cows were helping to keep the family.

So enthusiastic did they become over this aspect of farming that they went to the central part of the State and greatly enlarged their herd. True enough, they weren't growing feed enough to warrant an enlargement of the herd; but more cows would mean more manure and more manure meant more feed. So while they would have to conserve their limited supplies of oats, rye, grass, clover and alfalfa by soiling and even buy beet pulp and other concentrates, they deemed it more profitable to buy feed than fertilizers; and they still do.

Success with Vetch.—Although their first experience with vetch had been a dismal failure, it grew on other land in the county and should, theoretically, grow on the hill land of Riverview Farm also.

Accordingly the next fall another 50 pounds of high-priced vetch seed was sown with oats on the land that had been seeded the year previous. This time the vetch grew so rank and so thick that it and the oats together yielded three tons to the acre.

Leguminous crops depend on bacteria that grow on the roots for a large part of their nitrogen; and in soil where these bacteria are scarce or not present, the plant does not live up to its possibilities because it has a struggle to get nitrogen like other plants do. That was what happened to his vetch the first year, though bacteria were multiplying on its roots so that the second year the plants put out a normal growth.

"Theory," you may say, but this man Fischer has tried vetch on other land since, even on land that had been well manured, and always it has been the same story; no crop the first year but good ones afterward. Probably artificial inoculation of the seed would be quicker and more profitable, but he has never tried it.

Purebred Herd Purchased.—Since that first crop of vetch and oat hay many things have happened on Riverview Farm, not the least of which was the purchase of a foundation herd of purebred Holsteins a year ago last winter.

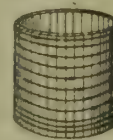
Soil Improved.—Surprising though it may seem, this cow-hating rail-roader and his wife have become more enthusiastic over their cows

than over anything else they possess. To them, cows are more than a mere milk-making machine, they are land builders as well. Unlike some, they haven't been completely swept off from their feet by the high records their cows have made, although that of course has been gratifying and will be continued. It is when they tell you of the 25 acres of land that were covered with manure last year and plowed under before it had a chance to wash off, that they point with most pride to the growing herd of cows, because that means soil building and larger crops.

Feed is still bought in preference to commercial fertilizer; but this will not always be necessary, for rotation of crops has been introduced.

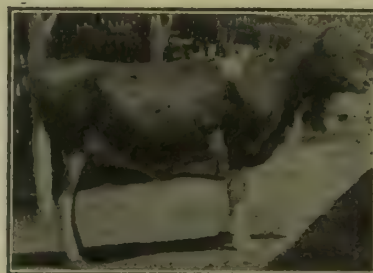
Among them is corn which doesn't ripen, but makes good silage in the silo that has been erected. And vetch and oats planted on the corn land produce immense crops the next year.

Naturally, there is still land to be built up on Riverview Farm; but the dairy herd continues to increase, insuring more manure, for more humus and nitrogen, for more feed, for more cows etc.



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Offering for sale a choice selection of gilts, boars and bred sows.

W. D. TREWHITT,

HANFORD, CAL.

**SHEEP OR GOATS FOR WASTE
WEEDS AND GRASS.**

What the exact cost was in feeding and caring for them is not known, but in view of the fact that most of the feed they consumed would otherwise have been wasted, Mr. Trewhitt believes them to have been profitable. Without the feed cutter, however, the story might have been different, as it made poor feed into a much more palatable form. Well-bred Shorthorns or Herefords would be selected again, even at a higher first cost instead of wasting good feed and much labor on a mixed lot.

To the Editor: Kale stalks remaining after poultry have eaten all the leaves seem to be relished by horses and cows. We run them through a feed cutter, cutting them into ½-inch lengths, mix with an equal quantity of corn stalks similarly cut, and feed to stock. Horses and cows will eat this mixture and call for more. Even the so-called Egyptian wheat is relished fed to horses in this way, whereas if fed uncut and alone they waste over half of it.

Sam'l Haigh.

San Jose.

BY W. S. GUILFORD.
Price, \$2.00 per Copy, Postpaid.

Sanitary Handling of Milk on a Big Dairy

[Written for Pacific Rural Press.]

In their first published report as to the score of the various dairies supplying retail milk the Los Angeles Board of Health gave the highest scoring in the pasteurized class to the dairy belonging to the Crescent Creamery, located at Artesia and managed by S. A. W. Carver.

As this scoring was based on flavor and odor, visible dirt, fat, solids not fat, acidity, bottle and cap as well as on bacteria content and was extended over a period of four months' time it is safe to assume that the milk was produced under exceedingly favorable conditions.

Favorable conditions, however, vary according to one's viewpoint, and it is evident to the visitor of this dairy that while sanitary buildings and equipment are essential it is by no means necessary that they be of an expensive nature.

To house the 265 head of milking cows it is natural that the milking barn should cost money, and so it has in this case, but only in so far as a large amount of cement floor and shingled roof would ordinarily demand, for with the exception of a partially boarded and partially screened side wall around the structure nothing of an expensive nature has been indulged in. Concrete mangers are used because they last longer and are easily cleaned, and the same thing applies to the home-constructed iron stanchions, made from heavy pipe.

Milking and Feeding.—As the barn is built in units, the silos which are being constructed are located at one end of two units, simplifying the work of feeding thereby. Besides alfalfa hay and green cut alfalfa the cows are fed a concentrated ration of 10 pounds molasses beet pulp, 2½ pounds ground oats, 2½ pounds of cotton seed meal and 2½ pounds of alfalfa meal. Whole cottonseed meal has proven very satisfactory, but the present price is prohibitive.

For the past six months all of the young cows in the herd have been milked with Hinman milking machines, the reduction of labor being fully one-half, as is evidenced by the fact that where formerly a hand milker milked 25 to 30 cows the same man can now milk 60 cows by operating three units. In neither case, however, does this allow for the labor of carrying the milk from cow to milk room, which task is performed by another man.

Just here it is pertinent to point out that even with milking machines the ordinary laborer has to be watched when pure milk is a consideration. In this case the foreman is continually on the lookout for careless methods as is also the man who carries the milk from stable to milk room.

An instance of where this policy paid is told of one of the foreign milkers who allowed a cow to put her foot into a bucket of milk. This was set on the floor in readiness for the carrier, but fortunately the incident was seen by the foreman, who supervised its disposal to the calf pens instead of over the cooler.

Drainage, being a factor in all sanitation, has been cared for by running the liquids from the milk-

ing barn to a point some distance from the barn where it is pumped into the underground cement irrigation pipes that are extended to the various fields.

The solids are dumped into manure spreaders and spread evenly over the fields in fair weather and taken care of for short intervals in rainy weather by a concrete platform, round in shape and draining to the liquid manure pit nearby.

Hauled from the barn with a litter carrier the solids are dumped on this platform which is 35 feet in diameter, where it may be left till such time as hauling out is feasible. While it is large enough to accommodate several days' disposal it is also easily loaded from, into the spreader, as space is left all around for the spreader and the furthest distance to load from is a little over 17 feet.

From the milking barn the milk is taken through a screen-enclosed and concrete-floored passageway and dumped into a cloth-covered vat through which it runs over a large encased cooler that cools it to a temperature of 40 degrees. From the cooler it is drawn into cans and delivered in those containers by auto truck, direct to the distributing center in Los Angeles, the trip being made in less than two hours.

Milk Room and Utensils.—While sanitation is of utmost importance in the milk room and with utensils, it is accomplished here with many home-made but practicable devices.

The first of these is seen in the milk-cooling system. Often milk is not cooled sufficiently to stand transportation well because of the expense of a brine-cooling system. Here the same results are achieved by the use of an ice box made of tongue-and-grooved lumber outside and lined with galvanized iron inside, a space of three inches separating the two walls and being filled with ground cork.

At the extreme bottom of one end of this box a two-inch pipe extends from the inside to the outside, connecting with a one-inch centrifugal pump, electrically driven and having a discharge pipe that connects with the milk cooler in another room. A discharge pipe from the cooler extends back to the inside top of the box where it is perforated with small holes.

As seen in operation, the ice is cracked into fairly large sizes and covered with salt. The pump is then started drawing the water from the melted ice from the bottom of the box and forcing it through the cooler on out to the discharge pipe which again empties into the box, the returning water passing over the salt and ice before again reaching the pump or the cooler.

For efficient cooling the same results are accomplished as would be with a brine-cooling system. The only advantage is the lack of investment in the brine-cooling plant as the cost of ice is equal to the cost of operating a brine-making plant.

In sterilizing vats expensive equipment has also been done away with, those in use being constructed of galvanized iron which though not perfectly air tight allow of steaming to a temperature of 250 degrees,

with a minimum loss of steam. A vat similar to these has been built around the cooler so that it may be thoroughly sterilized while in position, thus simplifying the labor of handling such a large piece of equipment more than necessary.

Concrete walls and floors, screened

doors and windows, together with the fact that but one man ever enters the milk room at milking time, preclude all possibilities of heat, flies or filth, which accounts in a large measure for the perfect condition in which the milk from this dairy reaches the ultimate consumer.

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Offers for sale fifty (50) head of eighteen months and two-year-old registered Shorthorn bulls; also a select lot of weanling registered bulls, sired by such bulls as Fond Lavender, College Count 3rd, Bessie's Council and Whitehall of Orange. For prices and particulars apply to

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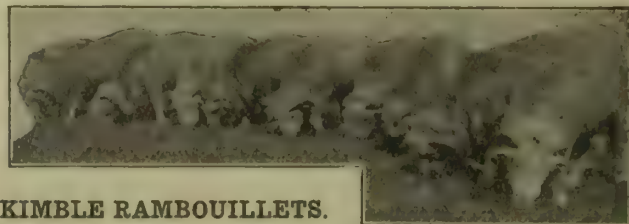
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Our herd is nominated in the California Poland China Futurity to be held in connection with the State Fair this fall. We have just imported and added to the herd some of the best blood of the East, including boars from W. J. Hather, Ord, Neb., and Peter Mouw, Orange City, Iowa. We are offering pigs of both sexes from prize-winning stock. Litters coming at all seasons and stock usually on hand to suit customers.



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How to Breed Hogs for Pork.

[From Address at the Western Berkshire Congress by F. R. Steel.]

The time when any old kind of hog, fed any kind of feed, in nearly any sort of way would return a profit on the investment has passed. Today to carry on the hog industry successfully we must have efficient hogs, rightly fed, rightly cared for, and rightly sold.

The management of a breeding herd divides itself quite naturally into four sections: (1) breeding, (2) feed, (3) care, and (4) selling. In selecting animals to reserve for your own herd, as well as, of course, in making additions to the herd, the choice should be based chiefly upon individual and ancestral size, early maturity, conformation, and prolificacy.

Size is one of the most important factors, and a thing that we as breeders of Berkshires must continually strive to maintain and increase in the breed. In making pork, the profits depend largely upon our ability to get a large number of pounds of pork at a certain early age of the pig—usually seven to nine months. To get large size at this age it is necessary to breed from large parent animals whose ancestors for generations have carried plenty of scale. The farmer trade—and it is upon this trade that the purebred Berkshire industry as a whole must stand or fall—demands size even more than good build. You let the average farmer who wants a purebred boar to use on a grade herd for pork go into your breeding lots and pick out a boar, and nine times out of ten he will pick out an outstandingly big pig of fair build over an excellently built pig of medium size. The chances are that he will simply pick out the biggest pig in the lot. Most purebred breeders, on the other hand, will pick the excellently built pig of medium size every time. Possibly both are right for their own purposes; but this trend of difference between the two standards of judgment must be carefully guarded so that there does not develop a chasm of difference in standards between the purebred breeder and the pork producer. Any great or fundamental difference in standards between these two would prove fatal to the purebred industry. Do not make the mistake of thinking that the pork producers are going to come over to any standard of the purebred breeder that differs very much from their own. They

will not do so; and it is up to the breeders of Berkshires in this Western country to see that our standards of breeding conform closely to the needs of the pork producer in this section. In this regard size is of paramount importance.

It is rather hard to find in literature upon swine any actual average weights of pigs gotten for full herds under ordinary conditions on the farm. Because we wanted such a table of weights that we could rely upon we have this spring at Winona weighed each litter of pigs each week; and from these figures compiled a table of average weight per pig of all the litters at each weekly and monthly age, taking every pig raised on the ranch, biggest and littlest alike, and all litters including those from first farrow gilts. The average weight per pig at each age by months is as follows:

One month	—15.9 lbs.
Two months	—37.8 "
Three "	—64.1 "
Four "	—93.6 "

These figures are for pigs in strong growing condition. From our experience so far I should say that 80 pounds at four months would be a good minimum or culling weight, i. e., a pig that weighs less than 80 pounds at four months would be a cull for lack of size. In all cases in picking your reserves or new stock select the largest size you can get without serious faults in other lines.

Early Maturity.—The modern tendency in the pork business is to market pigs at a much younger age than used to be the case. Our market now pays the highest price for a 200 to 225 lb. pig—not a hog, just a small pig. It is a good thing for the pork producers that this is so, because a pig up to about 200 lbs. puts on gains much more economically than is the case for heavier weights. It is necessary therefore to select your reserve stuff from early maturing individuals and families.

Conformation.—In picking reserves and additions it is well to select pigs with long bodies, strong slightly arched backs, short straight pasterns, wide hams, and smooth, even, deep sides.

Prolificacy is a point of tremendous importance. It is one of the main points of superiority of the Berkshire breed over one of our two chief competing breeds in the West; and we must keep it so, at least as

far as our breed is concerned. No matter how large, or how well built, nor how early maturing the average hog of any breed may be, the practical producer of pork does not want that hog unless it is also prolific. No money can be made from hogs except by the pigs they produce; and, except for the time a brood sow is nursing her litter, it costs just as much to feed and care for a sow that produces four pigs as for one that produces ten. This point largely determines the cost per pig at birth, which is one of the important factors in pork production; and because it is so farmers are going to breed in the future only a kind of hog that is dependably prolific. Therefore, in picking your reserves and new stuff insist upon prolificacy in the individual and its ancestry. You do not want gilts that farrow less than six pigs at the first litter, seven at the second, or eight later on.

Mating to Nick.—The skill and ability of a breeder of purebred stock are nowhere more vitally tested than in the matings of his brood animals. This is often the deciding factor tending to the production of outstanding or of mediocre animals. Be careful not to mate animals that carry the same important fault. If a boar has a slight drop back of the shoulders do not mate him with a sow that has the same defect, for if you do this defect will almost certainly be magnified in the offspring. If a sow has weak pasterns do not mate her with a boar not very good at this point. This is a feature that seldom breeds better and usually breeds worse. The same thing applies to a low back. These two points—back and pasterns—are probably the two hardest points of build to breed as we wish them; therefore they are of especial importance in matings. Size and prolificacy should be considered in direct matings just as much as points of build, all three characteristics be-

ing transmitted with equal regularity in the long run. In determining a proper mating one should not depend solely upon the size, build, and prolificacy of the individual animals used, but should know these points in regard to the ancestry of the two parents. The immediate parents of a litter of pigs determine only one-half of the characteristics on the average of the pigs, the grandparent generation determines one-quarter, the great grandparent generation one-eighth, etc., on back. The pedigree of an animal, together with a knowledge of the characteristics of the animals in this pedigree, enable a breeder to select the proper blood lines to mate together, a point equally important as mating proper individualities together. The question of whether you wish to line breed or not also enters the mating problem. Personally we believe in line breeding, using, however, only animals that have no important coincident defects. In this matter we try to follow Prof. Curtiss's definition of proper line breeding as "the judicious concentration of good blood."

FREQUENT URINATION.

To the Editor: A horse has to urinate every 15 or 20 minutes. Gave him green cut clover for a while, then changed to grain hay and gave him Hess' Condition Powder for a month, then gave several doses of turpentine, but with no effect. He has a good appetite and is apparently all right otherwise.—S. S. F., Santa Rosa.

[This trouble will require local as well as general treatment. Take the animal to Dr. Summerfield of your town.]

SPECIAL SALE LIST OF HIGH-CLASS BERKSHIRES.

Mature boars, Fall boars, Spring boars, some choice open Spring gilts, Weanling pigs, are all listed, described and priced in our new list just off the press. Write for it today. Some great bargains in high class stock from the West's greatest Berkshire breeding establishment.

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Raising Poultry for Profit

FEED PLENTY TO GET EGGS.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

If you have pullets that are maturing, hens that are molting or turkeys that are fattening, or ducks that are laying, in each and every case feed liberally. In warm summer weather, the flock will do very nicely on fair feeding, but as the days and nights get colder they all require more feed to do the same work. Young stock requires more feed to make the same growth, ducks require generous feeding and plenty of animal food to enable them to lay. Turkeys require more to fatten because the system requires more to keep the heat up, and nature always looks after the bird's system first before providing for anything else.

If you realize this you will know that a molting hen must have as much good, nourishing food as the hen that is laying heavily. I believe that molting is just about twice the strain on a hen as heavy laying; and yet many people that will feed a flock of laying hens quite generously, cut off nearly all feed from a flock that is molting. Many times this is done for lack of knowledge, but that does not make it any easier on the hens, neither does it put any money in the owner's pocket.

To get a flock of molting hens into laying condition, feed them all they will eat and digest. This can be ascertained by noting the droppings. If the droppings are round and tipped with white the food is being digested and no stinting need be done on that account; but if they are soft, of varying colors, and no white tip, unless this is the result of some laxative food, the digestion is at fault. In that case it will pay to feed a little light for a few days.

In feeding for eggs it never pays, no matter how high the price of grain may be, to stint hens in cold weather. The hen's own requirements, her bodily needs, are almost twice what they are in summer; and unless she is supplied with the surplus there will be no eggs. When a flock of hens look well and have gotten their new feathers and sing but don't lay, this is nearly always the reason. What they need to turn the song into a cackle is just a little more surplus energy, and it takes fuel, or feed.

When feed is high, it is a great temptation to feed light, but there is not any profit in it, because if we have to feed any high-priced feed it certainly pays to feed a little more and get the returns. Ducks are especially sensitive to a shortage in the animal food during the winter laying; they often stop short and do not lay again until spring when the food does not contain what they need.

QUESTIONS ANSWERED.

Yellow Specks on Skin.—My chickens, both old and young, have a yellow substance between the flesh and skin, and it is spreading. I feed wheat, green feed, and they have range.—Mrs. E. K.

It is chicken pox. I have known

cases when it never appeared on the head at all. Your feed is hardly strong enough to drive the pox away. The birds need good food, rich in protein. Better buy a few sacks of some good commercial mash food because it will be better balanced than you could mix yourself. Rub vaseline on the skin where yellow spots are and give the chickens ten drops of "tincture of iron" to a quart of water and see that they get a little of it every day until they improve. They will get well without any fuss if you improve the feed, but unless that is attended to you may lose some; or you might vaccinate. See October issue for instructions.

Broody Hen Has Sore Breast.—One of my hens, a Barred Rock, developed a red spot on her breast just at the keel, while she was setting. Now it has turned to a sore as large as a pullet egg, of a dark sort of hardness and there are more red spots on her breast. She looks healthy. Do you think it is a tumor?—Mrs. J. H.

No; that is no tumor. The hen has a tender skin and the dark skin that is hard will turn to a hard callous like a corn. I have seen old broody hens that had a callous from keel to vent. She will be all right. Don't fuss with it at all, unless to put a little vaseline on the place.

Electric Light Eggs.—Eastern poultrymen are favoring the use of electric lights in poultry houses to make longer hours eating in the cold winter months and claim many eggs. Have California poultrymen tried it, and with what results?—R. H. D.

Electric lights have been tried in California. I think we do not need them. They only give the hen a light to find the feed which a wise poultryman scatters in the litter in the house after the hens have gone to roost. In the morning they can commence the day by eating and scratching. The scratching starts the blood going; and as the birds increase the activity perhaps one or two hours before you would naturally get around to feed them, there is a big gain.

Rest the Cockerels.—What is the reason that two-year-old hens bred to cockerels produce fertile eggs in December and January and chicks are strong, while same eggs in March and April are infertile and chicks weak?—R. H. D.

The reason for infertile eggs and weak chicks in March and April is that the fire burns low in cockerels after two or three months' work, especially in the small breeds like Leghorns. One month is long enough for cockerels to be in breeding yards at one time. Give them a rest and have fresh ones to take the place.

Pullets Underdeveloped.—If late hatched pullets are slow in developing and do not lay until eight months old are they worth keeping over? Can the molt of these pullets be prevented?—R. H. D.

It depends on how the pullets have been raised as to whether they are worth holding over. If they have grown steadily, even though growth was slow, they are all right; but if they have been stunted at any stage of their life then they are not worth holding over. The molt can surely

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FERMENTING
TANKS

WATER TANKS

OIL TANKS

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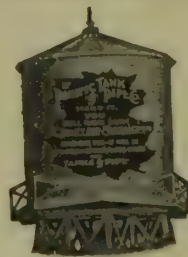
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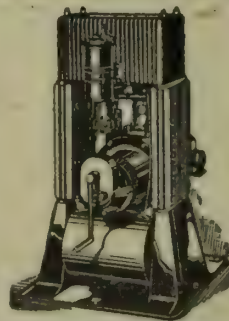
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BARRED ROCKS, Buff Orpingtons, Indian Runner Ducks. Prize-winning breeding stock. Reasonable. Glendale, Fleming Ave., San Jose, Cal.

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WHITE WYANDOTTES.—Blue-ribbon winners. Eggs \$2 to \$5. Chicks, pullets, cockerels. E. W. Stawetaki, Route 2, San Jose, Cal.

HIGH GRADE ANCONAS.—Fancy and utility. Settings, \$3.50. Fertility guaranteed. J. R. Bell, Livermore, Cal.

DAY-OLD CHICKS.—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, Cal.

WHITE WYANDOTTES.—Fine large cockerels. \$3.50. L. Haynes, Chowchilla, Cal.

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be prevented if fed right from babyhood to henhood, but hardly after the feed has been changed several times. It is changing feed so many times that causes the molt. You can start a molt in anything in feathers by cutting down the quantity and quality of feed. It is not, as many think, rich food that starts the molt, but the lack of it; but the bird's skin being short of fat the feathers do not loosen and fall. Just the same, they are dead, and so as soon as the oil is supplied the feathers fall out. The best way is to feed pullets well all the time and increase the animal food necessary for laying by degrees; then the system uses it to build up instead of making feathers.

Fleas.—Could you suggest something to rid a chicken house of fleas and take them from around the eyes of young chickens that roost in the house?—R. A.

Spray the house with crude oil or distillate, and put a little of the following ointment around the eyes of the chickens: Melt a piece of beeswax the size of a walnut, a piece of lard same size, two tablespoonfuls coal oil, and one tablespoonful of creolin to be added after the wax and lard are melted; stir all together until cold, and one application will keep the fleas away for a month, during which time your house should be well rid of them.

Turkey Breeds.—Will you advise me as to the Bourbon Red Turkey? Do they grow as large as the Bronze and are they any harder to raise, and are they a good market bird? Please refer me to some one who has them if you think they would be suitable. If not mention some other breed. Thanking you for the many helpful hints you have given me.—Mrs. C. H. W.

Bourbon Reds are good turkeys, so far as I know. I hardly think they attain quite the size of the Bronze, but they are much quieter and more domesticated if kept close. The only objection is the price. Being scarce they command a better price than the Bronze for breeding purposes, in fact they are at present more in the Fancy. I don't see why they should not make even a better market bird than the Bronze, being such a nice white skin and clean

SHIPPING TURKEY EGGS.

[Written for Pacific Rural Press by Geo. H. Croley.]

Within the last three or four months several readers have reported exceedingly poor hatching results from turkey eggs that have been shipped to them by express. In packing for shipment, some of the breeders used sawdust, others used bran, while in other cases patent shipping boxes were used. Turkey eggs travel very poorly; they are easily damaged for hatching purposes. They should be packed each surrounded with a layer of excelsior one inch thick and packed in light baskets that are lined with a two-inch layer of excelsior. The eggs, after being placed in the basket, should also be covered with a pad of excelsior about three inches deep, over which a cloth should be stretched and securely fastened.

FREE BOOKS ON POULTRY

Lee's Poultry Book

Secrets of Success with Chickens
Common Sense Chicken Talks
Pointers to Amateurs
How to Read Poultry Diseases
GLOBE MILLS, LOS ANGELES, CAL.

looking legs. One of our advertisers whose ad. has dropped out quite recently keeps them, but at present they cannot have any for sale or their ad. would be in the paper. It's against the rules to advertise those who fail to advertise themselves, because if they have the goods to sell, we suppose they will let it be known.

Rabbit Troubles.—Is there any cheaper way of feeding rabbits than this: I am feeding rolled barley and alfalfa hay. What causes them to eat wood when there is feed in front of them? Do rabbits need salt?—J. A. F.

Yes, sir, rabbits do need salt; so does every animal that is domesticated and kept away from its natural haunts. Put a little before them and they will soon satisfy you that they need it and are gnawing wood to get it. I think some good ground or even whole oats would be much cheaper, because better feed for your rabbits. Barley at present prices is about as dear as any grain we can feed. I am much in favor of oats in place of barley unless the latter is real cheap. You will notice a big improvement in the health and flesh of your rabbits when fed on good fat oats.

Pendulous Crops.—Please give me a remedy for the following trouble among turkeys: Craw much distended and pendulous; contains liquid and gas. They seem feverish and break out on skin of craw, not on any other part. Birds eat.—S. E.

This is indigestion, probably from overfeeding, though there is nothing said in regard to feed served. In most cases of that kind, a little charcoal and baking soda will make things right, but when it has gone so far as to break out on the skin, it requires more stringent measures. Give them a dose of epsom salts in just a little mash at night: say a teaspoonful to every turk; or to every quart of feed mixed put one tablespoonful of the salts. Next day and until better put one-eighth of a grain of strychnine to every quart of water and let them have no other. Feed very sparingly until better. If readers would give particulars as to feeding it would help me to answer them with more chance of success.

Col. Harris Weinstock, State market director, was in Los Angeles recently trying to organize the poultry men of Southern California into a co-operative market association for the purpose of marketing their eggs and chickens through the State Market Bureau. At a very well-attended meeting the poultrymen gave him a respectful hearing, but did not take very kindly to his plan. His proposition was that each member of the Association subscribe to one share of stock, to cost \$10, for every 1000 hens. When the stock sales reach \$4,000 the corporation will meet and elect officers. The corporation, however, will not be organized, unless by Feb. 1, 1917, there are 400,000 hens represented in the association.

Poultry Adviser

Personal advice on all poultry matters. I guarantee to increase the egg yield, the health and vigor of the flock, shorten the molt and prevent disease if you follow the advice. \$1.00 for advice and formulas.

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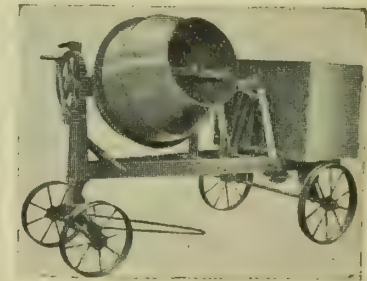
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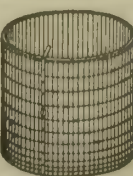
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SAN FRANCISCO.

San Francisco, Nov. 15, 1916.

WHEAT.

The Eastern market is seesawing, with foreign buyers holding off; but the general tendency still seems to be upward, and offerings here are unusually light. Northern red is cleaned up here at present, and northern club is a little higher.

[First-hand prices on strictly first-class grain, San Francisco.]
 Sonora wheat\$2.65@2.70
 Northern club\$2.60@2.70
 Calif. club, ctl.None offered
 Northern Bluestem2.85@2.90
 Northern RedNone offered

BARLEY.

Barley is very closely held in the local market, with an active speculative demand. The spot movement is not exceptionally heavy, but this is due rather to the firm views of holders than to lack of demand and both grades are higher.
 Shipping, ctl.\$2.15@2.20
 Choice feed, ctl.2.10@2.15

OATS.

Red seed has advanced quite sharply, with hardly anything on hand that will meet the requirements; though there is a lot of inferior stuff that does not sell readily even at the full feed price, desirable lots being quite firm. White oats also show a slight advance.
 Red feed\$1.80@1.85
 Red seed2.55@2.60
 White2.10@2.15
 Black seed3.00@3.25

CORN.

A little easier feeling is reported East, but yellow corn is practically cleaned up on the spot here, and California yellow is not yet in condition to ship. Egyptian is in good demand, but is very firmly held; and while buyers are unwilling to pay the quoted figures except for choice grain, it is hard to get anything for much less.

[First-hand prices on strictly first-class grain, San Francisco.]
 Eastern Yellow, ctl.\$2.40@2.50
 Milo MalzeNominal
 Egyptian, new2.25@2.35

BEANS.

The market is still rather nervous, with quite a heavy buying movement under way, though prices show comparatively few changes this week. The tendency is still upward in all lines, except for damaged stock; the extreme range quoted on small whites being due to the lower figure offered for beans injured by rain. Limas and red kidneys have taken quite a jump, and everything else is very firm.
 (On wharf, San Francisco.)

Bayos, per ctl\$5.75@5.90
 Blackeyes5.00@5.10
 Cranberry beans6.50@6.60
 Horse beans3.25@3.50
 Small Whites (south) new crop7.00@10.50
 Large Whites, new crop8.10@9.50
 Pinks5.75@6.10
 Limas (south)6.50@6.65
 Red Kidney9.00@9.50
 Mexican Reds6.00@6.25
 Tepary beans4.25@4.50

HAY.

The local dealers have revised their prices upward again, which appears to be justified by the extremely small arrivals, which are hardly up to current needs. It seems impossible to get cars in the country, the situation being about the worst on record in that regard, and practically all hay is coming by boat. It is believed by the local trade that present prices could not be maintained if cars could be had. There is a fair movement on Government orders, but otherwise sea shipments are limited by lack of vessels.
 [Wholesale prices per ton, carload lots, San Francisco.]

Wheat, No. 1\$14.50@16.50
 No. 212.00@14.00
 Tame oats12.50@13.50
 Wild oats12.00@14.00
 Barley12.00@14.50
 Alfalfa10.00@14.50
 Stock hay9.50@12.00
 Straw, per bale50@70

FEEDSTUFFS.

Sharp advances are noted practically all along the line, due mainly to the extreme prices of the leading grains, which throws an increased demand to other materials. Oil cake is again offering at exceptional prices, and coconut meal is receiving more attention. Rice middlings also are in considerable demand.

Beet Pulp, per ton\$27.00@28.00
 Alfalfa meal, per ton\$18.00@19.00
 Bran, per ton28.00@29.00
 Oil Cake40.00@41.50
 Coconut cake or meal31.00@32.00
 Cracked corn50.00@55.00
 Middlings37.00@39.00
 Rolled Barley42.00@43.00
 Tankage45.00
 Rolled oats42.00@43.00
 Rice middlings33.00@34.00

POTATOES, ONIONS, VEGETABLES.

The cool weather is affecting the garden truck situation, as many lots of string beans are frost-bitten and sell at concessions, and tomatoes are lower with efforts to clean up the crop. Some lines are beginning to come in from the south. A good many onions are now arriving from Oregon, but have been bought at high prices in the northern market, and local onions in storage are very firmly held. Potatoes also remain strong, while sweets are higher.

(Wholesale prices, San Francisco.)
 Celery, Alameda, bunch10c
 Cucumbers, lug50@75c
 String beans3@6c
 Lima Beans5c
 Summer Squash, lugs50@75c

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
 Prices Quoted as Paid to Producers.

Eggplant, lugs50@60c
 Peas, lb6@8c
 Tomatoes, lugs30@50c
 Rhubarb, lugs75@1.00
 Potatoes, ctl, Delta2.00@2.20
 Salinas2.65@2.75
 Sweet Potatoes, per ctl1.75@2.00
 Onions3.25@3.50
 Garlic, new crop, per lb3@5c

POULTRY.

The demand for dressed turkeys is picking up considerably, and while supplies are ample, choice young birds are slightly higher. Owing to the heavy Eastern demand, dealers are talking of a possible shortage on the Trans-giving market. Live turkeys and chickens are unchanged. Belgian hares are in good demand at a slight advance.
 Turkeys, dressed, large, lb25@29c
 Turkeys, live, lb, young, large21@24c
 Old, large20@22c
 Broilers, 18 lbs. to doz. and less, lb.26@28c
 do, over 18 lbs. to doz21@23c
 Fryers20@22c
 Hens, extra, per lb, colored20c
 Small leghorn15@17c
 Smooth Young Roosters, per lb. (3 lbs. and over)18@20c
 Squabs, per lb.35@40c
 Geese, per lb14@15c
 Ducks14@15c
 Old13@14c
 Belgian Hares12@13c

BUTTER.

The butter market seems to have definitely started on the up grade again, and if there is anything in the reports of buying for Russia, prices may make new records. A factor in the present advance has been the filling of Government orders for the Philippines, etc. Arrivals are very little in excess of current needs, and there is little in storage.

Extra33 33 32 33 33 34
 Prime lets32 32 32 32 32 33
 Firsts31 31 31 31 32 32

EGGS.

There has been but little further advance, though the present figure on extras is 1c above last week's high point. Arrivals are increasing, after being light for several days, but extras are scarce and everything cleans up readily.

Extra49 49 48 50 50 51
 Sel. Pul.38 38 38 39 40 41

CHEESE.

All grades are quite firm, with moderate offerings and a good demand, prices standing as before.
 [S. F. Dairy Exchange prices.]
 Y. A's, fancy18 c
 Fancy Calif. Flats, per lb16 c
 Monterey Cheese16@17 c

DECIDUOUS FRUITS.

Cranberries have advanced sharply. Bellflower apples are beginning to clean up, and have been advanced sharply, while Newtowns, though strong, show no further change. Winter Nellis pears have been marked up. Figs are about gone, and grapes are higher, with nothing further coming from the country.

[Wholesale prices, San Francisco.]
 Huckleberries, lb., fancy10@12c
 off grade6@8c
 Strawberries, chest\$5.00@6.00
 Cranberries, Cape Cod, bbl.12.00@12.50

Apples:
 Bellflower, box1.00@1.10
 Jonathans85@1.00
 Newtown85@1.00
 Pears, Winter Nellis1.75@2.00
 Persimmons, box, dbl. layer75@1.00
 Pomegranates, lug75@1.00
 Quinces, lug40@50
 Casabas, crate65@85

DRIED FRUITS.

Gowers are about sold out in all lines, and the packers apparently have very little on hand, while the market situation in the East is steadily growing stronger. Sales of raisins have been unprecedented, and orders have lately been taken subject to ability to deliver. Peaches also have been active, and the stock is getting into narrow compass. Apples have again been marked up a little, and evaporators are well cleaned out, with little more available. Apricots are very firm at the recent advance, and few growers have any left, while figs are exceptionally scarce. Prunes show no further advance, but most of the crop has been distributed to the trade and the demand is still strong. Fancy Lake county pears are bringing as high as 10c in the country, but pears in other localities are not in the same class and are unchanged.

[Net to growers, bulk basis, f. o. b. shipping point.]

Apples, new crop7@7 1/2c
 Apricots, per lb, 191615 c
 Figs, white, 1916None offered
 Figs, blk5 @5 1/2c
 Calmyras, 1916None offered
 Prunes, 4-size basis, 19168 1/2@9 1/2c
 Pears6 1/2@7 c
 Peaches: Standard yellow6 c
 Muirs6 1/2c

ALMONDS.

In some quarters offerings have recently been reported at concessions from Exchange prices, but it is doubtful if any quantity could be had, as the nuts are well cleaned up in the country, and supplies are rather below requirements in most markets. Jobbing prices locally are about 1 to 2c over

the Exchange figures.

[Exchange prices.]
 Nonpareils, lb.20 1/2c
 I. X. L.18 c
 Ne Plus17 c
 Drakes16 c
 Languedoc16 c

HIDES.

With leather supplies already considerably short of the demand, and still greater shortage in prospect, buying of hides for the last few weeks has been unusually active, and prices have taken a decided jump on both wet and dry cattle and calf hides. Felts, etc., are unchanged.
 Wet salted:
 Steers21 1/2@23 c
 Cows21 1/2@23 c
 Light hides, 25 to 48 lbs.21 1/2@23 c
 Kip24 @25 1/2c
 Calf and veal32 1/2@33 1/2c
 Dry Hides33 1/2@35 c
 Dry Kip36 @37 1/2c
 Dry Veal and Calf39 1/2@43 1/2c
 Pelts, long wool\$1.75@1.90
 Short wool85@1.10
 Horse hides, wet, large, ea.5.00@5.50
 dry, large3.00@3.50

HORSES.

This week has brought the largest offerings received in the San Francisco market for some time, including a large lot of medium work stock and a few heavy drafters.
 Drafters, 1700 lbs and up250
 Drafters, 1550 to 1650 lbs150@200
 Chunks, 1350 to 1500 lbs150@175
 Wagon horses 1050 to 1350 lbs 110@150
 Green Mountain range horses, 950 to 1200 lbs.20@75

GROCERIES.

Flour continues very firm at the re-

cent advance. Pickles are higher, and Pacific codfish is up 1/4c. Several brands of canned salmon and meats have again advanced, as well as Cotto-lene and some lines of condensed milk.

LOS ANGELES.

Los Angeles, Nov. 14, 1916.

BUTTER.

Receipts California by rail for week ending Tuesday, Nov. 14:

1916309,605 lbs.
 1915225,620 lbs.

A steady and firm market was had the past week. The receipts were a little better than the week before but not oppressive. There was a further firming up of the market east which had a sympathetic influence upon the market here. Extra in Chicago is now 36 1/2c and in New York 38c. San Francisco is also up 1c for the week. Here the market remained steady and firm at 33c for extras under a good consumptive demand. Monday on 'change several small lots of extras sold at 33 1/2@34c, but the closing price was 33c. Tuesday there was no trading on call, but the tone of the market was firm.

We quote fresh extra creamery33c
 Prime first32c
 First31c

Wed. Thu. Fri. Sat. Mon. Tu.
 191633 33 33 32 33 33
 191526 26 26 26 28 28

EGGS.

Receipts by rail as reported to the Produce Exchange for week ending Tuesday, Nov. 14:

1916813 cases
 1915547 cases

A firm and fairly active market was had the past week for what few coming in. The street trade took what fresh ranch eggs arriving at last week's advance and storage stocks had to be drawn on to piece out with. On 'change there was nothing doing as receivers found a ready market for what coming in from their regular customers. San Francisco made an advance of 1c up to Tuesday, when fresh extra sold

Special Livestock Market Report.

Los Angeles, Nov. 14, 1916.

CATTLE: While there is no quotable change to note in this market the past week it is hardly so firm. A fair supply of steers continues to come forward from California and Arizona, but quality hardly so good. They show the affect of the high price of feed. Killers all in the market and they made fair purchases of fat cows and heifers.

Quotations f. o. b. Los Angeles:
 Beef steers, prime 1000 to 1100 lbs.\$7.00@7.75

Stockers and feeders5.50@6.00
 Prime cows and heifers6.25@6.50
 Good cows and heifers6.00@6.25

HOGS: A firm market and fair demand was had the past week at last week's figures. While California gave us a fair supply of hogs there were enough home grown in to supply the demand. A number of shipments were received from Idaho during the week, but they were not as good as previous seasons, many of them being young, and less finished than previous years owing to the high price of feed. Killers all in the market and wanted supplies.

Per cwt. f. o. b. Los Angeles:
 Heavy, averaging 250@300 lbs.\$8.50@9.00
 Mixed, 200@2509.25@9.50
 Light, 175@2009.25@9.50

SHEEP: A steady and firm market was had the past week both for sheep and lambs. Utah and Idaho both gave us a fair number and quality of the receipts very good. Lambs, in sympathy with strong markets east, were firmer, without being higher. Killers all in the market and wanted supplies and more sheep and lambs could have been sold than coming in.

Per head f. o. b. Los Angeles:
 Prime wethers\$7.00@7.25
 Prime ewes6.50@6.75
 Yearlings6.50@7.00
 Lambs6.50@7.00

CALVES: Not many coming in and market steady and firm. Selling at \$8.50 to \$9.50 per cwt.

San Francisco, November 15.

CATTLE are marked up for the first time in several weeks and there is a strong feeling for the immediate future. It now begins to appear that there are not the usual number being fed and that most of those that will be available are already in slaughterers hands. There is a distinct falling off in numbers in Nevada feed lots.

SHEEP remain about the same, as there are few if any still held by growers. Contracts for future delivery might be closed at a more attractive figure.

HOGS of desired weights are somewhat scarce, but there has been a heavy run of lightweights all week. In some instances these have been turned down because of lack of outlet. Heavy hogs have been marked up half a cent in sympathy with lard prices.

WOOL market continues to show activity although practically all of the fall clip is now reported to be out of growers' hands. The wool held by Chas. Kimball of Kings county amounting to about 400 bales was sold the past week. The market is active in Boston, also higher. London sales for the past week are about 10 per cent higher. Long staple values at \$90 to \$95.

[Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F. Hog prices subject to seller standing one-half of all hogs condemned by government inspectors.]

Steers, No. 17 1/2@7 3/4c
 No. 26 1/2@6 3/4c
 Cows and Heifers5 1/2@6 1/4c
 No. 25 1/4@5 3/4c
 Bulls and Stags4 @4 1/4c
 Calves, light3 @3 1/2c
 Medium7 @7 1/2c
 Heavy6 1/2@7 c

HOGS, grain-fed:
 100 to 150 lbs.8 1/4c
 150 to 250 lbs.9 1/4c
 250 to 325 lbs.9 1/2c

SHEEP: Prime Wethers7 1/2c
 Spring Lambs f. o. b. country points\$5.50@6.00

WOOL: Red Bluff, year's25@27c
 Mountain, fall16@20c
 Sacramento Valley, year's19@25c
 Mendocino, year's32@33c
 Mendocino, fall19@21c
 Southern, year's18@21c
 Southern, 7 months'13@16c
 Southern, fall10@11c
 Imperial Valley, year's17@19c
 Imperial Valley, 7 mos.14@15c
 Nevada22@24c
 Fall wool10@20c

North Portland, Ore., Nov. 13, 1916.

CATTLE: One of the largest runs of the season greeted the trade again today, after several light Monday runs, receipts totaled well over 1600 head. Feeders were in good demand with a large supply, best fleshy feeders brought \$5.50 to 6.00, with very good kind around \$5.00, common stuff sold down to \$3.00.

BEEF STEERS: There was a large supply of beef steers available for packers today which met a keen demand, several loads of prime steers brought 7.10. There was a large proportion of prime steers which sold from \$6.70 to 7.00; good steers sold 6.25 to 6.65.

COWS AND HEIFERS: The supply of butcher stuff was limited. Demand was good both from packers and butchers. Prime cows sold at an advance of 25 cents, bringing \$5.75, while strictly good cows brought 5.25 to 6.60; heifer tops for today was 5.75. Fair and ordinary cows sold on a steady basis, sales ranging from 4.00 to 4.50.

BULLS AND STAGS: Demand for bulls still continues much larger than the supply. Packers are bidding up to 4.50 for prime heavy ones with good bulls going from 4.00 to 4.25.

HOGS: Prices in the hog market continued its upward trend today. The market opened with a keen call from all packers. A good supply of 1500 head did not near meet the demand. The top is \$9.75. Quality of the offering is holding up very good. Figs were sold usually one cent under tops.

SHEEP: There was but a light run on the market today. Prices ruling strong. There was one load of east of the mountains lambs that brought \$8.85, which was 35 cents higher than anything offered for some time. Valley lambs were unchanged, top bringing 8.50; there were several loads of prime yearling wethers which brought 7.75 at the close of last week. Mutton ewes are in good demand, prices ranging from 5.50 to 6.00.

at 50½c. Chicago is 1½c higher on first and New York is up 1c on first, which are selling there at 40c. This helped to create a firmer feeling here and Tuesday fresh ranch case count closed on 'change at 49c, an advance of 1c.

Receipts by rail for the week were 313 cases and estimated receipts by truck 600 cases, total 1413 cases. The same time last year the receipts by rail were 547 cases and estimated receipts by truck 600 cases, total 1147 cases.

Fresh ranch case count49c
Pullets42c

Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
1916	48	48	48	48	49
1915	46	46	46	42	46

POULTRY.

There was a more quiet tone to this market the past week. Local receipts were again good especially of light stuff and a car of mixed eastern poultry was in. Light stuff under liberal offerings and high prices was slow. Heavy hens, turkeys and ducks continue to sell very well. Light hens full and so are geese.

Broilers, 1½ to 2 lbs.22@23c
Fryers, 2½ to 3 lbs.20@22c
Fens, over 4 lbs.18@19c
Fens under 4 lbs.14@15c
Ducks15@16c
Geese14@15c
Coosters, 3 lbs. up (soft bones)18c
Turkeys, heavy, 12 lbs. and up.22@23c
Turkeys, light19@20c
Squabs, live, per doz.\$1.50@3.00
Dressed3.75@4.85

BEANS.

The market continues firm and demand good both for limas and whites.

The latter are higher. The lima bean crop is now pretty well gathered but growers are marketing them slowly. Blackeyes are quiet but steady. We quote from growers:

Limas\$6.75@7.00
Large white9.00@9.50
Small white9.25@10.00
Pinks7.00@7.50
Blackeyes5.00@5.50

WALNUTS.

The California Walnut Growers Association says the season with them is practically closed. The crop as far as they are concerned has been marketed. They report the market very firm and demand good. No No. 1 walnuts are now to be had save at an advance of ½c over the Association price and but few at that.

The Associated prices for this year and last are:

	1916	1915
No. 1	\$15.50	\$13.60
No. 2	12.50	10.60
Budded	19.00	17.00
Jumbos	17.50	16.60

Orchard run 3c per lb less.

HAY.

There was a further falling off in the receipts the past week, arrivals only 30 cars. Under light offerings and a fair demand prices ruled higher all round. Barley and oat hay were advanced \$2.00 per ton and alfalfa sold up \$1.00 per ton and the market closed the week steady at this improvement.

[F. o. b. Los Angeles.]

Barley hay	\$16.00@18.00
Oat	18.00@20.00
Alfalfa, Northern	15.00@16.00
Alfalfa, local	17.00@18.00
Straw	7.50@8.00

Special Citrus Market Report.

Los Angeles, Nov. 14, 1916.

Shipments of oranges from Southern California from November 1 to November 8 were 166 cars and lemons 156 cars. The same time last year the shipments were 232 cars of oranges and 86 cars of lemons. From Central California the shipments from November 1 to November 7 were 22 cars of oranges and 28 cars of lemons. The same time last year the shipments were 5 cars oranges and 6 cars lemons.

A more quiet tone pervaded the market the past week at all the leading cities. The near approach of the new crop making buyers both backward and bearish. Hence a slight decline was reported for the week both in oranges and lemons. Still prices were very good for all desirable offerings. Locally the market remains unchanged from a week ago. All desirable Valencias met with a very fair demand at steady prices. Grapefruit

also sold very well. Some new crop navels are expected here the latter part of the week from Tulare county. Local packers are bidding 2@3c per pound for new navels in the grove. Valencias are still 3@3½c in the grove and grapefruit 2@3c in the grove. Lemons are still dull at 1½@2c per pound in the grove.

FROM AUCTION SALES.

New York, Nov. 13.—Fifteen cars Valencias and 6 cars lemons sold. Market easier and lower on oranges and lemons. Weather cloudy. Valencias averaged \$3.40@6.45. Lemons averaged \$3.50@5.05.

Boston, Nov. 13.—Ten cars sold. Market easier on both oranges and lemons. Valencias averaged \$2.50@4.55. Lemons averaged \$3.75@4.40.

Philadelphia, Nov. 13.—Seven cars sold. Market lower. Valencias averaged \$3.00@4.55; lemons averaged \$2.95@4.35.

Special Deciduous Market Report.

[By J. L. Nagle.]

On account of the frost of Sunday night, which killed what grapes there were remaining on the vines, the season may be considered practically closed, though possibly fifty cars of pinks, Cornichons and Emperors will be shipped within the next two or three days, these grapes having been picked before the frost and in the packing houses in lug boxes.

On the whole the season has been an exceptional one, in fact prices have ruled higher than for several years. The crop though light in some districts on certain varieties, was heavy on other varieties and this condition, together with increased acreage, has produced a heavier crop than last season.

Competition from Eastern fruits was not felt until late in the season and confined to certain markets. This is the final report of the season. The following prices have ruled for the week:

New York.—Emperor grapes aver-

aged: crate, \$1.15; drum, \$3.25; Malaga, \$1.06; Tokay, \$1.10; Cornichon, \$1.27; Persimmons, \$1.32; Pomegranates, \$1.25.

Boston.—Tokay grapes, \$1.63; Malaga, \$1.10; Emperor, \$1.45; Cornichon, \$1.40; Pomegranates, \$1.78.

Chicago.—Malaga grapes, \$1.18; Emperor, \$1.14; Cornichon, \$1.25; Tokay, \$1.17.

Total shipments to Nov. 13, 17,633 cars; total shipments same date, 1915, 16,376 cars.

COMPARATIVE STATEMENT.

Sacramento, Cal., Nov. 11, 1916.

1915		1916
205%	Cherries	164
392%	Apricots	289%
1688%	Peaches	1900%
2224%	Plums	1998%
2643%	Pears	3699%
9069%	Grapes	9366%
54	Misc.	101%

16,277% cars Total 17,529 cars

Publisher's Department.

DELIGHTED WITH RETURNS.

Every business we have ever heard has its drawbacks. In the publishing of a paper one trouble is that if the advertiser gets good results and is out he stops his ad, and on the contrary, if he does not get results he keeps just the same. In either case the paper loses the business. Here is a case in point—of course we are pleased that the Rural Press "made good" and trust we will have business in the advertiser another season.

Kindly withdraw my ads in your classified columns. I am more than delighted with the returns. I am sold on seed potatoes as close as I dare look until grading and sorting is completed. I did not advertise in any other paper this season and believe your publication goes into the hands of the planters and growers in California. Sincerely,
H. A. Hyde,
Watsonville, Nov. 11, 1916.

In issuing a forty page edition of the Rural Press we had anticipated giving display space in advertising our books, but other advertising has crowded it out. However, we have a few books in stock awaiting your order. If you contemplate getting a copy of "California Vegetables" we would suggest that you hurry, as the edition is nearly exhausted.

Classified Advertisements

MISCELLANEOUS.

REBUILT GAS ENGINES from 3 to 50 h.p. Thoroughly overhauled and guaranteed. We handle only high-grade engines. Write us your requirements. Motors, Gas Engines bought, sold and exchanged. Mechanical Installation Company, 181-89 Second St., San Francisco.

EVERY SIZE WROUGHT IRON WATER Pipe and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a Square Deal. Weisbaum Pipe Works, 160 Eleventh St., San Francisco.

SECOND HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SPECTER PIPE WORKS 308 E. Howard St. San Francisco

PRODUCER TO CONSUMER—Alfalfa meal alfalfa hay, oat hay, honey, beans, Gyp corn, sorghum molasses, etc.—what do you need? O. L. Linn, Marketing Agent Stanislaus County Farmers' Union, Modesto, Cal.

APPLES DIRECT FROM PRODUCER—Fancy grade, bulk pack. Bellefleur, 75c per box; Newtown Pippins, 85c; Missouri Pippins, \$1 No. 2 grade, 60c. Edward A. Hall, E. F. D. 1, Watsonville, Cal.

BUY ROASTED COFFEE WHOLESALE—Best, 10 pounds, \$3.00 delivered. Order with remittance. WM. J. SCHROTH CO., 112-F Market St. San Francisco

STUDY TELEGRAPHY, Stenography, Book-keeping, Law, English, Board, room and tuition may be earned. Catalogue free: Mackay Business College, 909 Main, Los Angeles.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency, Savings and Loan Building, Stockton, California. Established fifty years.

FOR QUICK SALE—Price \$3500—\$1500 cash—balance flat loan. Modern seven-room house, conveniently located for trans, cars and schools; good neighborhood. Lot 40x135 ft. Address Owner, 1815 Oregon St. Berkeley, Cal.

WANTED—Position to take charge of dairy or poultry plant by competent married man; no children. P. O. Box 32, Thalheim, Cal.

"HOW TO LIVE ON LESS"—a guide to cheaper living. Wholesale catalogue free. Pacific Co-operative, A236 Commercial St., S. F.

TO REDUCE THE HIGH COST OF LIVING, send for our Wholesale to Consumer Catalog. SMITHS' CASH STORE, 106 Cal St. San Francisco

HONEY—Pure extracted honey in 5-gal. cans, \$4.00. L. Haynes, Chowchilla, Cal.

SEEDS, PLANTS AND TREES.

ALFALFA PAYS!—Fancy, double-re-cleaned, dodder-free, alfalfa seed from non-irrigated stands. Purity 99% plus. Reasonable prices. Also Scarified White Sweet Clover Seed. Free bulletins on Sweet Clover. Ralph Waldo Elden, Central Point, Oregon, Box 22.

CELERY SEED FOR SALE—Dwarf Golden Heart variety. Produced from seed purchased from C. C. Morse & Co. Strictly fresh and clean. Price, per pound, \$1.50. James Mills Orchards' Corporation, Hamilton, Cal.

WALNUTS—Eureka, XXX Mayette, San Jose Mayette, Franquette, and Concord on Northern Black Root. Sizes 3-4 ft. to 8-12 ft. Write for prices. Ekstein Nurseries, Modesto, Cal.

WALNUT TREES—Franquette, Mayette and Mammoth on Black Root; also Grafting Wood and Black Seedling Trees. Lowest prices. Mammoth Walnut Nurseries, Watsonville, Cal.

MISSION OLIVE TREES—Raised from my own bearing trees. This is the only sure way to get what one wants. W. A. Hayne, Box 461, Marysville.

SOUDAN GRASS SEED—California grown and pure. For prices write undersigned and state quantity wanted. George Boock, Los Molinos, Cal.

QUALITY TREES—Seedlings, 5c. Prunes, 10c. Walnuts, 30c. Cash Nurseries & Seed Store, Sebastopol, Cal.

BERRY PLANTS—of all kinds. Large, strong and well rooted. Prices lowest. M. J. Moniz, Sebastopol, Cal.

COUNTRY LANDS.

STANISLAUS FOOTHILL COUNTRY—After extensive search over California I purchased a year ago excellent 300 acres bench land bordering Stanislaus River, very attractive scenically on main highway S. F. to Yosemite. Soil and climate adapted to fruits, oranges, nuts and alfalfa—we are specializing on almonds and alfalfa. Tract watered by gravity ditch. Brother and self developing portion for own holding. Practically all balance sold to parties doing same. Will sell the three or four fine remaining tracts to desirable parties at very reasonable price and long time. Bank references. George S. Henry, C. E., Oakdale, Cal.

A BARGAIN—Fifteen acres, well improved, three miles south Ukiah. Plenty water for irrigating. Ideal place for truck-gardening. Two horses, cows, turkeys and chickens. New set tools and farm implements goes with place. L. Gielow, R. F. D. 1, Ukiah, Cal.

NEW GOVERNMENT LAND OPENINGS now. Different counties. States. Booklet New Circular Free. Valuable, well located, overlooked bargains obtainable. Write Joseph Clark Sacramento.

FOR SALE—Highly improved 640-acre farm. About half irrigable. Irrigation 50c per acre per annum. In Southern Alberta. Price reasonable and good terms. Apply, W. Chaplin, 427 65th St., Oakland.

I HAVE 60 ACRES at Oakdale, Stanislaus county. Will give 30 acres to party that will plant prunes and almonds and care for five years. John Jay, Los Molinos, Cal.

RANCH FOR LEASE for a term of years and stock for sale. 120 acres of Alfalfa. A-1 buildings, in the Modesto irrigation district. Two strings of A-1 grade Holstein cows, horses, hay, hogs and implements. Will take part cash and give long time on balance. \$5000 will handle this nicely J R Coon, Route A, Box 220, Modesto, Cal.

TO RENT—Six-year-old orchard at Morgan Hill on -hires Box 330 Rural Press

WANTED.

WANTED—Young men and women to attend the Western Normal Courses—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A." Western Normal, 524 E. Market St., Stockton, Cal.

RANCH SUPERINTENDENT—Experienced handling and developing large tracts under irrigation. Fruit, agricultural, stock. Give trial to responsible firm—salary or percentage. Box 350, Pacific Rural Press.

WANTED SALESMEN AND AGENTS in every city and town on this coast to represent this company. A cracker-jack proposition for live wires. General sale's agent, 414-429 9th St. San Francisco.

CALIFORNIA FARMER, experienced in stock, fruit, dairy and general farming, wants position as foreman. Good references. Martin, General Delivery, Berkeley, Cal.

DAIRY FOREMAN or herdman wants position. 8 years' experience. Now employed herd purebred Holsteins. Married. References. Box 390, Rural Press.

Last Chance

THE FINISH OF THE GREAT P. P. I. E. BUILDINGS.

YOUR LAST OPPORTUNITY to purchase at ½ regular prices; material from the Expo, grounds.

We start the 15th wrecking the Motor Transportation Palace, and will follow up with the Service Bldg., the Panama Bldg., and all board and wire fences coming down now. These buildings comprise everything. Lumber like new. Plumbing Fixtures, Pipe, Electrical Material, Hose Racks, Doors, Windows, Radiators, Boilers, etc., etc.

SNAP—60 large Vault Doors from Service Bldg. 50 Lockers, \$1.50 and \$2.

Owing to crowded yards, special inducements to sell from grounds.

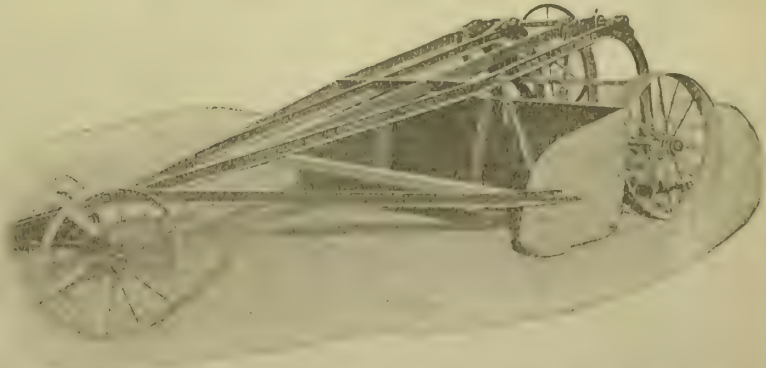
WARNING—DON'T WAIT!

We are under bonds to finish these jobs by January 1, 1917.

Block at 11th and Market Sts., containing everything pertaining to building, with all kinds of ranch accessories. In addition to Lumber, Plumbing, and Electrical Material, we have Fixtures, Lockers, Moldings, Cabinets, Mantels, Plate Mirrors, Heaters, Boilers, Wire Fencing, Chicken Netting, Hog Wire, Barbed Wire, Doors, Windows, Sash, Nails, Desks, Cafe Bar, Dining, Wire Glass, Plain Glass, Window Shades, Combination Toilets, \$8 and \$10; "A" grade 5 yr. guarantee Porcelain Combination, \$17.50; Sinks, \$2.50; Wall Board, carload; "B" Tubs, complete with best fittings, \$22; Lavatories, Special \$16 values \$10; Toilet Seats, \$1.25; new cargo Star A Shingles, 5 bds., \$2.40; also 3 cargoes new pine; short 2in. 1-3 price. All commodities, although high now, are going higher; freight rates increase Jan. 1, 1917. Buy now, but buy right. Get us for legitimate and guaranteed sales. See our mixed car rate. Having saws and motor trucks in yard, we are equipped to give the best, and have reached the highest point of efficiency in the distribution of wreckage material.

We solicit your confidence and patronage. **SYMON BROS., LARGEST WRECKERS,** 1501 to 1527 Market St., S. F. 21st and San Pablo, Oakland.

A Schmeiser Giant Leveler Will Work Wonders on Your Farm



SCHMEISER POWER LAND LEVELERS, the great time and labor savers, are the only logical machines for leveling large tracts of land, not only because of the immense amount of dirt they move daily, but also because their giant strength enables them to work on ground too hard and rough and full of tough roots, etc., for a Fresno and horses to touch, thereby making it possible for the farmer to make ready for cultivation land which heretofore he had considered untillable.

Three Sizes, "Giant," "Junior," "Midget"

SCHMEISER "GIANT" LEVELER—Bucket 11 feet wide, 3 feet high, 4 feet sides; capacity of 35 cubic yards. With 2 men and tractor does the work of 9 men and 36 horses with Fresno. Price, f. o. b. Davis, Calif.,\$3900

SCHMEISER "JUNIOR" LEVELER—Bucket, 8 ft. wide, 3 ft. high, 3½ ft. sides; capacity 2 4/3 yds. Price, f. o. b. Davis, Calif.,\$650
"MIDGET"—Bucket, 8 ft. x 7½ x 2½ ft. Capacity 1 4/5 yds. Price.....\$350

SEND TODAY FOR FULL INFORMATION.

Schmeiser Manufacturing Co., 12 MECHANIC ST., DAVIS, CALIFORNIA

Mrs. Best's Letter.

My dear Friends: One has only to walk along the streets and gaze at the windows of crockery shops to know that an important event for the dining room is soon to take place. In many store windows, you find dining tables, fully set with all the silver, glassware and china necessary for a big dinner on display.

The new styles in silver tend to simplicity in pattern, and now that the good plated ware is made in exactly the same patterns as the solid, it takes an expert to distinguish the difference and brings good looking silver within the reach of almost all households.

The china, as a whole, is quiet in design, especially in dinner sets. The more striking patterns are mostly used for breakfast or tea. One needs to be careful about purchasing dishes of too striking a pattern for fear of wearying of them.

The carving sets are displayed in many patterns, either bone, celluloid or composition and come in varying sizes with rather plain handles and with the end of silver for an initial.

These exhibition tables have the new colored glass dishes for flowers; and the flower used is a pleasing contrast to the bowl—for example, a bright blue bowl will contain flowers of a pink hue. Cut glass is waning in popularity for vases, yet it certainly is pretty resting on a flat mirror that reflects the flowers.

Another favorite receptacle for flowers is the enameled basket with raised flowers on the sides. These come with high handles to which a bow of tulle may be tied. Combinations in flowers are very fashionable—as violets and red roses, or coreopsis and Shasta daisies or heliotrope with Cecil Bruner roses.

The newest candlesticks are of white china with stripes of black and bright colored flowers, but they are not the only ones seen. The crystal candlestick is always good on a dining table and the hand carved wood ones in bronze tints are good style also.

The attractiveness of these tables is largely due to care used in setting them and the snowy linen, glistening silver and sparkling glass used.

I wonder if any of you who have big family dinners have an extra size top you can place on your table. They can be purchased in the stores, but they can also be made at home by any one at all handy with tools. For ease in handling they should be made in sections and hinged together. This permits of their being stored away conveniently. The boards do not need to be well planed, for a heavy pad is necessary on any table to make a cloth look well.

I hope all my readers are to have the happiness of a family reunion and much good cheer.

Rosabella Best.

Cranberry jelly when strained and sealed in jelly glasses keeps like any other jelly and is always available at a moment's notice.

Red apples, russet pears, bananas and purple grapes make a beautiful combination for a fruit basket.

A large pumpkin hollowed out makes a fine centerpiece to hold fruit and from which to drape autumn leaves.

THE HOME CIRCLE

THE THANKSGIVING DINNER.

Thanksgiving day being a day of feasting, the greatest interest centers in the dinner. It is most distinctly a day for family re-unions and hospitality to those friends who are not so fortunately situated.

By common consent, either chicken, turkey or goose seems to be the choice for the main meat course. In some sections of the country, a turkey is always flanked with chicken pie, but food experts frown upon two dishes of exactly the same food value. Oysters in some form are an addition to the meal used either as a cocktail for the first course, or for a soup, or scalloped and served with the meat course.

soups, or the bouillon could be ready for reheating.

In many households, these two courses will be eliminated and the meal will begin with the meat course, which naturally must be more generous under those circumstances. With the chicken or turkey should be served either mashed or baked Irish potatoes and candied sweet potatoes as well as some substantial vegetables such as Hubbard squash, boiled onions or scalloped corn.

The turkey may be served with a simple but well seasoned bread stuffing and a gravy made of the giblets and drippings in the roasting pan, or if variety is wished, either oysters or chestnuts may be added to the stuffing or mushrooms can be sau-



THE SMILING COUNTRY.

Partridges a-callin',
Hick'ry nuts a-fallin',
Country jest a-smilin' all around;
Cattle-bells a-tinklin'—
Frost'll soon be sprinklin'
Spicy like, an' sweet'nin' all the ground!

Halleluja season—
Every prospect pleasin';
Fields, they hint of silver an' of gold;
Don't you hear the holler
Of the eagle on the dollar,
An' you'll soon have all your arms kin
hold!

Thank the Lord we're livin';
An' Providence, forgivin',
Is doin' jest the best that it kin do;
We're dancin' down our troubles—
We blow 'em off like bubbles,—
Three cheers fer life, an' halleluja, too!

—Frank L. Stanton.

If desired as a cocktail, use the small California oyster and serve in small glasses, well covered with the tomato mixture, which can be purchased ready for use. In restaurants these glasses are surrounded with chipped ice, but if both the oysters and mixture are cold, that is unnecessary. With this should be served small crackers.

Following this could come a cream of tomato soup, or if preferred a clear bouillon. In either case, have your materials ready the day before. The tomato should be cooked, strained and seasoned and set aside all ready to be added to the cream sauce, which is the basis of all cream

teed, rolled in chopped parsley and used as a garnish. If two meats are desired, serve small balls of sausage baked and used as a garnish for the turkey.

For relishes, all New Englanders will vote for pickled peaches and these can be supplemented by olives and celery or other home-made pickles.

No Thanksgiving would be complete without cranberries and they may be served in the old-fashioned sauce or strained and poured into individual molds.

For a heavy dinner, a salad should be simple but attractive and appetizing and the tastes of the family

should be considered. Hearts of lettuce with French dressing or a combination salad of asparagus tips, string beans, peas and sliced tomato would be nice to serve and could be placed on the table if desired with the main body of the meal.

For dessert, many people feel the meal is incomplete without the old-time dishes, plum pudding and mince and pumpkin pie. Pumpkin pie is very much better and daintier if baked in individual tins and served with whipped cream; and mince pie is attractive baked in individual tins, with strips of pastry across the top instead of a solid crust.

After this come mints, nuts, and raisins with black coffee and it is very fashionable to serve this course in the living room, but that depends upon whether it is easy to do it or not. Comfort and convenience count for a great deal more than style in family dinners.

THE DINNER TABLE.

A well arranged and decorated dinner table can make the simplest meal attractive, and the foundation of course is spotless table linen and shining silver.

For a center-piece many things suggest themselves, one of them being a basket or dish of selected fruit or a fern or whatever flowers the garden affords. If something different is desired, a large papier mache turkey surrounded by a rail fence made of long sticks of candy is unique and bound to please the little folks, especially if at the close of the meal they are permitted to demolish the fence.

Another attractive feature is individual baskets for salted nuts. The small inside case can be purchased very inexpensively and they can be covered with crepe paper and a handle of wire joined on. This handle should be covered with paper also and have tied to it a small bow of baby ribbon or flower made of tissue paper. The color used should be harmonious with the other decorations. This work could be done by any clever twelve-year-old child and is a great addition to the appearance of the table.

The shops have a wealth of inexpensive articles suitable for place-cards, such as large cut-out turkeys, and small gummed cut-outs of pumpkins, stalks of corn and the like, that could be added to a plain white card, bearing the name.

The food itself helps to decorate the table, the brown fowl is in pleasing contrast to the red of the cranberry sauce and the baked potato with two slashes to hold butter and a little parsley assumes a quite patrician air.

A well-planned and served meal is a feast to the eye as well as the palate and a large part of the pleasure is in the accessories.

NEW ENGLAND PLUM PUDDING.

Scald four cups of milk and pour over 1½ cups rolled crackers. Add ½ cup molasses, ¾ cup brown sugar, 1-3 cup melted butter, 4 eggs, teaspoon salt, ½ grated nutmeg, 1 teaspoon cinnamon, 1 teaspoon cloves. Cook 1 cup raisins in boiling water until soft, seed and add to mixture. Turn in buttered bread pan, put in pan of hot water, cover and bake in slow oven.

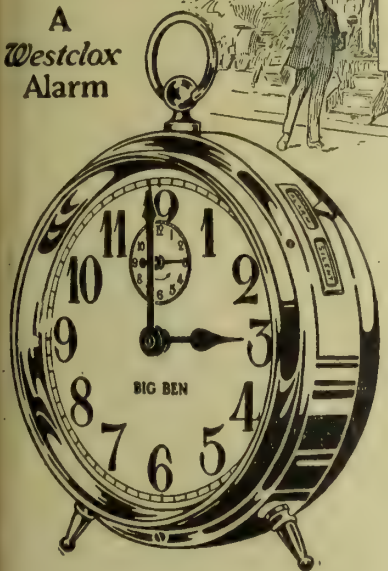
Floral Department.

[By Geo. N. Tyler.]

Lilies.—The ground should be spaded or trenched very deep and abundance of well-rotted manure worked in. But under no consideration use green manure on lily beds or bulbs of any description. If lilies are to be grown in beds let them be about three feet wide and as long as desired. Put the bulbs in deep; from eight to twelve inches is none too deep to plant them. *Lilium Auratum* should be planted twelve inches, and a mulch of straw or clippings from the lawn should be kept over them for the first year.

Big Ben

A
Westclox
Alarm



THREE-FIFTEEN—the Call Boy comes, to wake the Railroad man. Big Ben was on the job first. He started the day at three. He is right on the minute when there's an early run.

The Railroad boys all like Big Ben. He helps them make the grade.

Big Ben will run your day on schedule time—he'll sidetrack the Sandman whenever you say.

He's seven inches tall, spunky, neighborly—down-right good.

At your jeweler's, \$2.50 in the States, \$3.50 in Canada. Sent prepaid on receipt of price if your jeweler doesn't stock him.

Western Clock Co.

La Salle, Ill., U. S. A. Makers of Westclox

Whenever possible to do so, lily bulbs should be procured and planted as early as possible. After once planting it will not be necessary to move them. In fact it would be better not to do so for three or four years. But in moving them be very careful not to break or bruise the roots at the base of the bulb; if these are injured it may cause the bulb to decay or not to bloom for the following season. In planting put one inch of the clean sand or fine gravel at the bottom of the hole and pour more sand on and around them. This is important and one of the secrets of success.

To grow hyacinths and other bulbs in glasses, select only dark-colored glasses, blue or red, for instance, and those of a long, narrow or Belgian pattern, in preference to the more elaborate styles. The hyacinth makes long white roots and to make them quickly and before it starts into leaf growth, the bulb after being put in the glasses should be put away in the dark for six weeks, the same as in potting. Always use rainwater. Fill the glasses so that the water will barely touch the bottom of the bulb. The water should be changed as often as once in three weeks, using pure rain water, at the same temperature as you took them out of. A piece of charcoal in the water will cause it to keep sweet longer and a few drops of ammonia dissolved in the water will give the flowers a much brighter color.

When hyacinths are coming into bloom, and they are not tall enough to suit, you can draw them up by slipping a paper cone over them with a small opening in the top.

When all bulbous plants are through blooming in pots, glasses or sand they should be planted out in a shady place in sandy loam or leaf-mould and watered as long as the leaves are green. When the leaves turn yellow take up the bulbs and put them where they can get a good deal of sun, and after they have ripened pack them in boxes of dry soil and put away till planting time.

HOW TO CARVE CORRECTLY.

In carving, there is a right and a wrong way, and it is really worth while that one should be able to carve well. Be particular to have a very sharp carving knife and a platter considerably larger than the fowl.

The chicken or turkey should be placed on the platter, breast uppermost. Place a fork in the breast and sever the wings first and then the legs without turning the bird around. Next, slice the white meat on either side and remove the second joint from the legs and wings. If the turkey is large, cut only one side, as the other half can be re-warmed to much better advantage if left whole.

HINTS FOR THE DINNER.

To make shells for individual pies, turn cup cake pans upside down and fit the pie crust smoothly over the outside of each cup. It is much more successful than shaping it on the inside.

Unroasted peanuts, blanched and browned in the oven with butter and then salted make a pleasing addition to the dinner and are much cheaper than almonds. They should be ready days before the dinner.



Solid comfort

When the rains and cold weather come, be comfort-prepared with a good oil heater.

A gallon of PEARL OIL gives 9 hours of intense, odorless heat.

Prices:
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Please send me full information about the course checked above.

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Indoor Closet

More Comfortable, Healthful, Convenient
Eliminates the out-door privy, open vault and cess-pool, which are breeding places for germs. Have a warm, sanitary, odorless toilet right in your house. No going out in cold weather. A boon to invalids. Endorsed by State Boards of Health.

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CUT FLOWERS

Cut out the Middleman. Buy direct from the Grower. All varieties of cut flowers in season direct from the plants, sent by parcel post or express. Also floral work of all kinds. Try a sample order. 40 varieties of ferns in 4-inch pots now ready, 25c each.

GEO. N. TYLER, Brookdale Nursery, Los Gatos, Cal.

IN NOVEMBER.

The elm and the maple, the ash and the oak,
Gave a grand party to all their young folk.
The guests were dressed gayly, each girl wore a gown
Of yellow and red, and the boys came in brown.
They gathered in groups in the shade of the trees
Or whirled in the waltz with the frolicsome breeze;
And, when dancing was done, at the set of the sun,
They went to a bonfire and ended their fun.

—Anna M. Pratt.

LEARNING HOW.

November was drawing to its close, and Trinette was wondering whether this Thanksgiving Day would find her feeling more Thank-you (as she called it) than last year, when she had been but six and a half years and entirely untouched by the inner significance of the day.

"But, mother, I don't feel Thank-you at all; really and truly I don't," she had declared, and had repeated the statement over and again until all the family—all, that is, but mother—had grown very tired of it.

"What! not for all that turkey and pumpkin-pie," Uncle Dick had marvelled, "nor for this morning's long auto-ride, nor for all those brand-new Victrola records this afternoon? Well," as Trinette solemnly shook her curly pate, "you are an ungrateful atom!"

"She's a most dreadfully spoiled child," had been stern Aunt Sophia's verdict.

"What a very odd child!" Cousin Natalie had sighed, gazing at Trinette through her long-stemmed eyeglasses until that little lass squirmed in her seat.

"Queer, did you say, Natalie?" father had cried with his hearty laugh. "She's a dear, that's what—father's dear, aren't you, Trinkette?"

But mother had drawn her little daughter to her lap and had murmured, "She'll know better and feel as thankful as anybody next year when she's seven, won't you, honey?"

Now it had become "next year" and Trinette was quite seven and over, knowing less than ever about the real Thanksgiving.

On Monday afternoon, while Trinette was playing paper-dolls by the window, Uncle Dick and Cousin Natalie were taking tea with mother.

"Really Millicent [that was mother], you and Frank [and that was father] make me quite weary!

To think of declining an invitation like this one just because you cannot take Trinette! Why, it's absurd. The child will be perfectly safe here at home with her nurse and the other maids."

"And she doesn't believe in Thanksgiving, anyway," laughed Uncle Dick, "do you, Trinette? I'll wager she doesn't know a bit more about that Thank-you feeling this year than last year, do you, Trinette?" Above the giggling that followed Trinette's sober "No, sir," father was heard to disclaim any intention of leaving his small daughter to a solitary holiday.

"No, indeed!" he continued. "Millicent and I will drop her at mother's, at Hopedale, on our way to Lenox. You'd like that, honey-girl? Wouldn't you just love to spend your Thanksgiving at grandma's on the farm?"

This was why, on that Wednesday evening, after helping grandma clear away supper and wipe dishes, and following that busy woman round generally below stairs, Trinette, while being made ready for bed upstairs, was telling grandma all about it.

"You don't say!" exclaimed grandma, deeply interested. "They couldn't teach you how to feel Thank-you in kindergarten?" Trinette shook her head.

Nor in dancing-class?" Trinette shook it again.

"Nor even in Sunday-school? I declare!" cried grandma, with a wondering shake of her head. "Well, then, you'll just have to take a few lessons from us farm-folk. We'll have to look sharp, too, so's you'll know enough to feel thankful on Thanksgiving Day."

All grandma's pets had their breakfasts before grandma herself sat down to hers, and it was while fetching milk for the kitten and water for bird and window-plants that Trinette had her first lesson.

"Now watch Muffins," suggested grandma, when that small pussy, after a hearty meal, first washing both front paws and then his pink nose, rolled himself into a furry ball and loudly purred his satisfaction. "That's the way Muffins shows his Thank-yous."

"Look at Twitters," said grandma, with a smile, when the elderly canary-bird, after a dozen dips into feed and water mugs, fluttered to his perch and trilled and tremoloed in shrill delight. "That's his way of showing it. And here's my bonny cyclamen," grandma concluded, carefully watering her favorite plant. "Just stick your small nose right in here among the pink and white blossoms and take a long, long sniff. Smells good, doesn't it? Well that's the way my posies breathe their Thank-yous."

After breakfast, in jacket and tam, Trinette went with grandma to see the chickens.

"Each one," explained grandma, "after drinking puts back its head and looks up at the sky. That's my hens' Thank-you."

In the barn Dan and Dobbin turned away from their overflowing manger to look at grandma and give her a happy whinny by way of showing how they felt, and outside Rover bounded about and barked, and wildly wagged his heartiest Thanksgiving feelings.

"All of them," declared grandma, quite seriously, "feel, show, and say, each in his own peculiar way, that they know how to feel Thank-you. Now let's go in and get ready for our company."

All morning long Trinette helped manfully, fetching and carrying for grandma and saving that busy woman "some seventy thousand steps," as she called it. The company consisted of four very elderly ladies from the Town Home, who greatly appreciated grandma's turkey and "go-witherums," and waxed enthusiastic over the luscious pumpkin-pies. After dinner the six celebrators gathered before the open fire, while Trinette, at grandma's urgent request, spoke some kinder- on her own particular hassock at garten "pieces" and even danced the dew-drop for the guests. Then, in the early twilight, the little girl sat grandma's knee while the five old ladies told of former 'way-back Thanksgiving days.

Somehow, whatever the beginning and the end of each story, and whatever lay in between, the sum and substance of each old-wife's tale was one, big, cordial, really truly Thank-you, until Trinette felt this same warm Thanksgiving spirit enfold her little heart like velvet.

Suddenly there were steps and a knock at the front door, and, when grandma opened, there—just fancy!—stood father and mother come to spend the evening and the night with their little daughter at grandma's!

"Come in, dearies," said grandma. "Come in. How glad and thankful I am you've come to help us keep Thanksgiving!"

But Trinette hurled herself upon her parents. "Oh, mother, mother!" she cried. "I've learned how to feel Thank-you, mother! I learned it this morning, father, just in time for Thanksgiving, from everything on grandma's farm!" —Christian Register.



"John, I haven't missed my cup of Ghirardelli's Ground Chocolate for forty years."

**Ghirardelli's
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*is used in more than a million
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It comes PROTECTED—as all chocolate
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Your Money Back if You Are Not Satisfied.
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REFLEX SLICKER \$3.
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DEALERS EVERYWHERE
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Good Health.

[By H. E. Pastor, M. D.]

A Rural Remedy For Whooping Cough.

A medical friend called the writer's attention to the following item with the remark: "It's a good item for your department in the Rural Press." It is here printed for what it is worth and we presume it is worth something, as it is clipped from the New York Medical Journal, which in turn reprinted it from the British Medical Journal:

It is, the Journal declares, a rural remedy for whooping cough which appears to be not known generally to the profession. It consists of peeling the cloves of garlic, as the segments of the bulb are called, cutting them into thin slices, and wearing them under the soles of the feet between two pairs of socks, for if placed next to the skin the pressure produced by walking is apt to cause irritation. The garlic can usually be smelt on the breath within half an hour after the slices have begun to be worn, and the whoop and spasm usually disappear within forty-eight hours. The garlic should be worn for a week or ten days or longer, according to the severity of the case. Among the French Canadian habitants, we know that onions are used in exactly the same way. Garlic may also be administered by eating it as a form of bread sauce, made by chopping up the cloves when peeled, boiling them in milk, and mixing them with bread-crumbs.

Treatment of Poison Oak.

The poisonous principle of this plant is a volatile acid resin, its volatile quality explaining the ease with which it is carried on the wind, and its acid quality showing that treatment with an alkali is theoretically correct. One of the most efficacious remedies for this troublesome ailment therefore, is a saturated solution of bi-carbonate of soda—that is to say, an application of water containing all the soda that can be dissolved in it. Applications of the water are also good, but the application of both combined—that is to say, a saturated solution of bicarbonate of soda in ice water—are better than either alone. Make these applications to the infected part and relief will be promptly felt and a complete cure may be effected in 2 or 15 hours except in very refractory cases. Crystallized alum dipped in water and applied to the surface is a favorite remedy for poison oak in the South.

Keep Your Hands Clean.

We are handling disease-infecting matter more or less constantly, and ever and anon carry the hand to the mouth. If the hand has been in contact with infectious matter, it is not unlikely that disease germs may be conveyed into the body by way of the mouth. Many people wet their fingertips with saliva as a preliminary to turning the pages of a book, counting sheets of paper, and other numberless little every-day acts. Then the process is reversed, and other fingers that handle these objects are carried to the mouth and thus the infection spreads. Having

these facts in mind the U. S. Health Service has issued the following simple rules of personal hygiene: "Wash the hands immediately before eating, before handling, preparing, or serving food, after using the toilet, after attending the sick, and after handling anything dirty."

Pasteurization Temperature of Milk.

There is grave doubt in the minds of some medical authorities as to the propriety of raising the temperature of cow's milk above 140 deg. when the milk so treated is to be used for babies or invalids. It has

been suggested by those who have given this matter special attention that milk subjected to a temperature of 165 deg., a common practice, or to any other temperature exceeding 140 or 145 deg., loses in some way some of its nourishing properties, though the milk's constituents themselves remain unchanged. This loss of nourishing power in milk so treated is not readily explained on chemical grounds, though it is nevertheless real. The fact here pointed out is not an important matter in cases where milk forms but a small portion of the daily bill of fare, but

becomes serious where milk constitutes the exclusive diet, or nearly so, of the bottle-fed infant or of others restricted for any cause to a milk diet.

Nature's Provision Sufficient.

Don't be too ready to dose the new-born child with a laxative, as is very commonly proposed. Give Nature a chance. The first milk of the mother provides for just such a contingency. The drug-taking habit is a vicious one at best, and it is hardly fair to force a bad habit on a helpless child.

HUDSON SUPER-SIX
Excels All in Endurance
Save \$175 Before December 1st

Things the Super-Six does are less important than the way it does them. In breaking world's records it has hardly shown an effort. And after 7000 record-breaking miles, a Super-Six motor showed no evidence of wear in any part or bearing.

The Hudson Super-Six, in most cities, has broken all local records. Most of you have seen them broken.

It has elsewhere broken all worth-while records which have any bearing on stock cars. But all these wondrous things are done without a sign of effort.

Most stock motors go to pieces in attempting speedway tests. Also in hill-climbing feats. They never arrive at all.

But most of our stock-car records were won with a single Super-Six. It made a speed record exceeding 102 miles per hour. It broke all touring car speed records up to 100 miles. It ran 1819 miles in 24 hours, exceeding the record by 52 per cent.

Yet that Super-Six motor, after 3800 miles of that terrific strain, showed no wear whatever. The motor's condition was to experts almost unbelievable.

Another Super-Six broke the ocean-to-ocean record, solely because of endurance. It ran from San Francisco to New York in 5 days, 3 hours and 31 minutes. Then the same 7-passenger Super-Six turned around and went back to San Francisco. The round trip was made in 10 days, 21 hours, 3 minutes. It was the first car to ever finish in a coast to coast and return trip against time.

Last spring the best one-way time made by a famous 8 was 7 days, 11 hours, 52 minutes. In 2½ days more the Super-Six made the round trip. No test of endurance ever equaled that.

That's What You Want

That's why men buy the Super-Six—men wise in motor cars. Not for excessive speed or power. But to render every-day performance without vibration, wear or effort.

The Super-Six at half capacity can match another car's supreme exertion. That means a long-lived motor, low upkeep, small repairs.

The great fact is that the Super-Six has almost ended vibration. It has reduced motor friction to almost nil.

Made Hudson Supreme

The Super-Six has made the Hudson undisputed king. It now outsells any other fine car with a price above \$1100. In six months we have quadrupled our output, but 3500 cars per month still fail to meet demands.

Yet this is the first season of the Super-Six. Last spring it entered the market a stranger, with all a stranger's uncertainties. And men have only begun to realize what this new-type motor means.

The end of the season will find 25,000 running. It finds the Super-Six in possession of all the worth-while records. It finds a car so perfect that not one change is necessary for the coming year.

Then every motorist must concede the Super-Six supremacy. And men who have bought cars with a lesser motor will realize their mistake.

The Super-Six is not one of the passing sensations. Ours is not one of those claims to motor supremacy which yields in a year or two to another. Mark what these records mean. There is plenty of evidence now to convince you that it cannot be superseded.

You Can Save
\$175 Now

By buying now you can save \$175. The price will be advanced December 1st. The models will not be changed. You get the same Super-Six motor, the same wonderful chassis, and the same beautiful body. Your car you get now will be identical with those we shall sell after December 1st.

On that date we start a second production of the Super-Six. Material costs have increased enormously. That forces this raise in price.

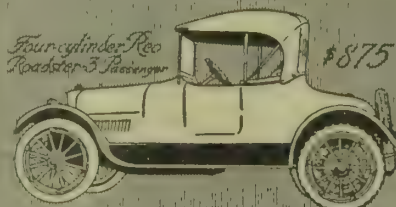
Phaeton, 7-passenger . . .	\$1475	Touring Sedan	\$2000	Town Car	\$2750
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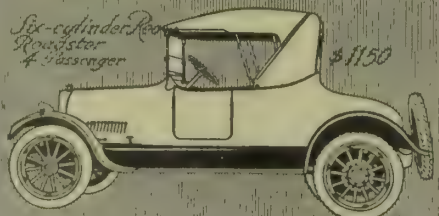
Four-cylinder Reo
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Reo the Fifth
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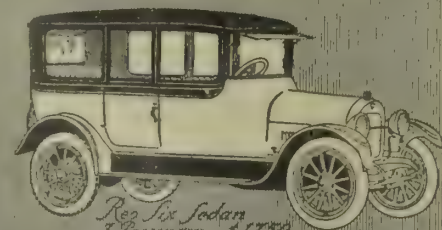
Four-cylinder Reo
Enclosed Car
\$1025



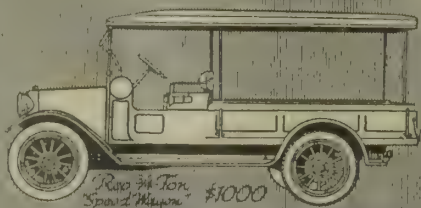
Six-cylinder Reo
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4 Passenger \$1150



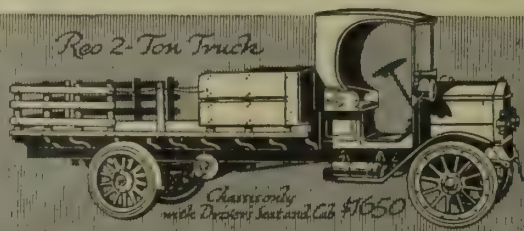
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Are you one of those who, just because you can't get a Reo on the minute, are thinking of accepting as a substitute a car that is your "second choice"?

Or are you one of those who think perhaps you can get as good value in some automobile of lesser reputation?

If you are in doubt on any point, let us just say this:

Take a Reo, and have it made in any other factory—and it wouldn't be a Reo.

It isn't design alone—there are no radical features of design in Reo cars.

Nor is it factory equipment—all automobile factories have about the same machines. Reo, being a leader, is always a few months ahead of most—but machine tools are practically standard.

Nor could one say that Reo mechanics are all more skilled—others can hire good mechanics too.

That's why we say that if you took Reo design and Reo specifications and had the car made up in some other plant, still it would not be a Reo.

It's the Reo spirit—that indefinable but still tangible thing that pervades the whole Reo organization from General Manager down to the Last Man in the Shops, that gives to this product the quality that has come to be known as Reo.

We like to call it good intent—for after all that is the determining factor.

It is the desire of the Reo Folk to make the best automobiles it is possible to make.

Not the most, but the best. Not quantity, but quality, is the Reo goal.

And every Reo man—from the Chief Engineer to the Final Inspector—is imbued with that spirit, is actuated by that desire to make good, dependable automobiles. Better than others.

Visit the Reo plant. You will be welcome—the doors are always open. Reo Folk, proud of their work, are glad to show you through. Note the atmosphere of the place. Watch the workers—listen to the remarks you'll hear.

No one asks—"How many did we make yesterday?" as you hear in so many factories nowadays.

For that isn't the thought uppermost in the minds of Reo workmen.

It's how many parts were discarded, turned back by the inspectors—because of some error so slight it would "pass" in most plants.

There's no secret—no necromancy—about Reo quality or how it gets into the product.

It's the result of that fervent desire of the Reo Folk to make Reo cars excel—and the eternal vigilance that results from that desire—that is responsible for Reo quality, Reo stability, Reo low cost of upkeep, and finally, Reo preference—Reo demand.

Is it any wonder that Reo cars are known as "The Gold Standard of Values"?

Reo Motor Car Company

Lansing, Michigan

169-A

"THE
GOLD STANDARD
OF VALUES"

THE PACIFIC RURAL PRESS

SAN FRANCISCO

NOVEMBER 25, 1916.

LOS ANGELES

State Fruit Growers' Convention.

Fair weather, big crowds, tractor demonstrations, machinery exhibits, recommendations for amendments to our horticultural laws, marketing problems, with intense interest in all, made the convention a record-breaker.

[Written for Pacific Rural Press.]

THOUGH the weather was cool, it was a "sizzling afternoon" that Thursday at the California Fruit Growers' Convention held at Napa Nov. 15-17, but you will find that story in other columns. "It's the biggest crowd and the keenest interest we've had

in a fruit growers' convention since the one at Davis. It seems like old times," said a veteran horticulturist while it was in session. Napa could not have chosen more perfect weather; Napa people could not be excelled for hospitality; and the floor discussions could not have been more pointed and enlightening. Napa Horticultural Commissioner John J. Fox and the people who worked with him in making the visitors so happy and the convention so successful, are to be richly congratulated.

Fruit growers who did not attend, missed something that would have made them richer through the year to come, in happiness and prosperity. They cannot get the spirit of the convention, the personal conversation, the broadened viewpoint, the new ideas, the enthusiasm for their calling, from a written report of the convention; but these joys were for those who were there.

Tractor Demonstration.—This convention added a feature of vital interest to every fruit grower, which had not before been attempted, by staging an orchard tractor demonstration and machinery exhibit. Its success is noted in other columns.

Legislative Recommendations.—The most important feature of the convention, perhaps, was the suggestion of amendments to our horticultural State laws.

These were recommended to the convention by the Horticultural Legislation Committee of 35 men leading in the fruit interests of the State. This committee had been appointed by the committee of three originated at the Visalia convention for the purpose of revising our horticultural laws. Only their executive committee was retained to push the recommendations of the Convention in the Legislature, but about eight other representatives of allied interests were added to those retained. A fund of \$400 was guaranteed in the committee meeting to put the proposed amendments as printed in our other columns, into legal form.

There was not so much of detail in the program concerning the practices and methods of fruit growing, as there was of marketing and

co-operation, these subjects being of greatest interest just at this time.

Of bugs there were none on the regular program, except in the proposed laws; and the man who did most to exclude bugs from the program and also from California had the only "bug" paper on the program, the recommendations for more efficiency in bug exclusion.

Efficiency in fruit marketing was the great theme of the Convention; and it was treated from many angles.

The State's opportunity and limitations in helping the fruit producer to get most of what the consumer pays, was presented by State Market Director Weinstock. State laws for control of fresh fruit packing to insure better marketing occupied much attention; and "standardization" was about the commonest word at the Convention.

The efficiency and opportunity of co-operative organizations was debated pro and con with special reference to prune and apricot growers, raisin growers, peach growers, and deciduous fresh fruit growers.

Disposition of lower grade fruits occupied attention in several papers and discussions. The recommendations of F. T. Swett that the University be requested by the convention to provide a thoroughly equipped laboratory to investigate and standardize fruit drying and preserving methods and to test out the results of such investigations, received unanimous approval and were embodied in the resolutions later endorsed by the Convention.

Parcels post marketing was described from actual experience in Sacramento not long ago.

Consideration of the problems of nurserymen in improving their root stocks, selecting bud-wood, and watching orchards for improvements in type; also in arranging satisfactory and uniform inspection of trees shipped from one county to another developed some interesting clashes of opinion.

Dean Thos. F. Hunt told more about California farmers than had been suspected by most of the visitors, and he made it plain that farming in California is not overdone.

Modesto, Sacramento, San Francisco, and Eureka asked for the next convention. Modesto offered \$600 cash to pay the expenses of the convention if held there. Sacramento exhibited peti-

titions signed by hundreds, Eureka suggested scenery and an unknown country, San Francisco offered plenty of hotel accommodations and opportunity to investigate the local marketing problems. The choice will be made later by the new State Horticultural Commissioner G. H. Hecke.

The County Horticultural Commissioners' meetings Nov. 13 and 14 were full of interest to those who must fight insects and diseases, but they were especially for the commissioners, and did not have a large attendance of growers.



G. H. Hecke of Yolo County, California, State Commissioner of Horticulture, Who Presided at the Napa Fruit Growers' Convention and Now Enters upon His Career as Official Leader of California Fruit-Growing Industries.

Fruit Growers Convention Discussions.

PROPOSED HORTICULTURAL LAW AMENDMENTS.

A number of propositions for amended laws were discussed in committee, which were not recommended to the convention, for various reasons.

Standardization Laws.—To the fresh fruit standardization law, the most important change proposed is to strike out the words "interstate and foreign commerce" thus making it apply to shipments within the State. Heretofore, fruit caught in the act of being bad according to the law, has been sold locally, but Californians object to eating the refuse, and a better local market is to be encouraged for the growers' benefit. No maturity test was added because nobody yet can determine practically when fruits from different climates, soils, seasons, and varieties are at proper maturity for shipment, to unpredictable markets, through unknown weather. The University and U. S. Department of Agriculture are working on this problem. The only change in maturity requirements was that for Cornichon grapes, inadvertently placed with Emperors at 16 per cent sugar. A strong attempt was made to raise all but Emperors and Cornichons to 18 per cent. The grape maturity test was shown to be unsatisfactory. The only change in packing requirements was the detail which allows only 10 per cent variation in size of fruit packed in baskets. This has been impossible to enforce. A 10 per cent variation in size of fruits in each layer is the proposed amendment.

It was agreed that a definition of "packing" or "packed fruit" is needed in the law.

A new section was proposed, providing that all citrus fruits must be mature when marketed, except when sold on the trees. Definition of maturity was left to the ingenuity of a board consisting of the head of the State Laboratory, the State Market Director, and the State Horticultural Commissioner.

El Dorado county is supposed to have been exempt from this law because standards are higher than those required by law for fruit shipped by the Standardized Fruit Alliance of that county. Since other shippers outside this organization should come under the law, both private and State inspection had to be enforced. Their exemption was struck out, against their vigorous protest based solely on the expense of the double inspection.

Cantaloupe shipments under the present law permit only four sizes. At request of Imperial County other sizes will be permitted if the legislature agrees.

Quarantine Laws.—"Whereas injurious insects are being brought into the State under circumstances beyond the present quarantine laws, the situation is of sufficient importance to justify an amendment to cover the situation." A man has recently been caught importing new and dangerous insects from Florida on citrus twigs and leaves which might also have brought citrus canker.

A clause is inserted providing for

appointment of a county horticultural commissioner on petition of 25 resident fruit growers, even when supervisors neglect to do so. Offices, equipment, and office help must be provided horticultural commissioners if these amendments pass. Horticultural commissioners and their deputies having served in a county at least two years immediately preceding the end of a term or other vacancy, will be eligible to the office of county horticultural commissioner in that county without further examination. Such commissioner may be disqualified on petition by 25 resident freeholding fruit growers, nurserymen, and greenhouse owners after due hearing. Commissioners on authorized service outside their counties are to be paid for time and traveling expenses, either \$1800 a year or \$6 per day for their time.

Under another proposed amendment, a lien due to county eradication of serious pests where owners do not, takes precedence over all other encumbrances previously placed on the property.

County horticultural commissioners may require a license of fumigators and sprayers doing public work.

Every person bringing into any county any nursery, fruit, or seed material, etc., for propagation, must notify the county horticultural commissioner on its arrival and hold it for inspection if the latter deems it likely to harbor pests. Each package shall be marked with a statement of growers and where grown, its contents and the shipper's address, and a manifest shall be sent to the commissioner when shipment is made. All nurserymen and their agents must pay \$1 per year license and registration fee and the State shall assign to each a number which must be attached to all shipments. Shipments infected with pests unknown in orchards, etc., at destination, may be returned, as a whole, to the shipper.

The State Horticultural Commissioner is directed to publish names and descriptions of injurious insects and diseases from time to time and to prescribe proper treatment.

A separate statute designed to prevent spread of weeds, was OK'd by the committee but not presented to the Convention at the same time as the others.

Unification of the Horticultural Commissioner System under control of a representative State Horticultural Board of seven members chosen from as many districts to include the whole State was vigorously defended and opposed in committee. Under such a law, the State would pay county horticultural commissioners, removing them from politics, giving some of them more work, standardizing the work of all of them, combining several mountain counties under one commissioner, and allowing help for those where fruit is the leading industry. The contention for local self-government, and the probable difficulty of getting a sufficient appropriation from the legislature blocked this proposition temporarily. It was suggested that the industry rather than the State should bear the expense, in which

case the greatest objection would be overcome. Under such a system the friction and loss due to widely varying requirements of the various horticultural commissioners in standardized fruit inspection would be eliminated. Other work would be given to keep the commissioners busy the year around and thus increase their loyalty and efficiency.

That inspection of nursery stock at point of shipment is more or less of a farce was admitted, but the tags certifying such inspection are demanded by the carriers. A State law to make them mean something or nothing was proposed but not recommended.

SCIENTIFIC FRUIT DISTRIBUTION.

The air was sizzling with expectancy all Thursday morning at the Fruit Growers' Convention in Napa. State Market Director Weinstock was scheduled to speak on "The Scientific Distribution of Fruit." There were many in Napa who remembered Mr. Weinstock's proposal at the San Bernardino convention that all shippers of citrus fruits should get together daily as the cantaloupe shippers of Imperial Valley do, having previously told a secretary the number of cars of each kind of fruit they each proposed to get into each Eastern market that day. The secretary would list the totals for each market and present them at the daily morning meeting. If too many cars should be scheduled for one market and too few for another, the shippers who were willing would transfer to the other markets and thus equalize the distribution and avoid the glutted markets which reduce prices.

This plan was later proposed for deciduous fruit shippers. In both cases the purely-growers' organizations believed themselves in position to continue more profitably to themselves, as they have been. In both cases, the Market Director has circularized the members of the Exchanges to override the decision of their management, but with no apparent effect except resentment.

It was expected that Mr. Weinstock would urge his proposition at Napa, and he did not disappoint the deciduous growers.

The deciduous Exchange controls 15 to 17 per cent of the shipments from California. Shippers of the other 83 to 85 per cent had been willing to adopt the Weinstock system—indeed in some cases they were very anxious to do so. The Exchange's non-participation blocked the whole game, much to the Market Director's disappointment. The Exchange management claimed to be distributing their fruit scientifically and getting satisfactory prices. They believed that the way to get all the science of distribution there is, would be for all growers to join their organization. This Exchange uses the internationally famed marketing system of the California Fruit Growers' Exchange, during the months that citrus fruits are not moving most heavily. They have no liabilities and they do have assets. They invite all fruit growers

of the State to join them on equal terms and thus control their shipments to the finest degree.

Some of them argue that under Mr. Weinstock's system, the opening and development of markets would be checked. "If I open up a new market for California fruit and develop it at great expense, as there are many in the East to be developed, will I feel kindly when compelled to share that market with one who has been fighting me while I was building it up? If I am thus discouraged, will anyone else be encouraged to develop new markets? Yet if they are not developed, who can sell the tremendously increasing production?"

"Cantaloupe people say Chicago can absorb so many cars of cantaloupes today. No more may be shipped. Who will spend money to make Chicago absorb more? No one shipper, for he would probably have to share the increase with others who did not help bear the expense."

But Mr. Weinstock was there with more than argument this day. He showed two charts indicating the shipments of pears to New York auctions in the week beginning July 24. An average of \$2.04 was received for the 27,202 boxes put on that market that day. On the other four days on which sales were held, an average of 14,189 boxes averaged \$2.43, getting higher toward the end of the week. The apparent loss of the 39 cents difference per box on Monday on one commodity on one market, equalled \$10,608. Mr. Weinstock maintained that with even distribution through the week it would have been saved to fruit growers. He called that unscientific distribution and things looked bad for the Exchange. The chart showed that over 50 per cent of their offerings on the New York auction that week had been on Monday.

Manager J. L. Nagle, however, pointed to the facts that California fruit is shipped every day in the week, but sold at New York on only five days. There is necessarily an accumulation over Saturday and Sunday. On this particular Monday, independent shippers and others had accumulated 140 cars at New York, of which only 78 were sent to the auction Monday. The Exchange fruit, comprising only 1/3 of the total this day, sold slightly higher than the average, having the right to be sold first on Mondays. The Exchange would not have had so large an amount had not the growers of 2/3 the amount of their fruit sold insisted on its being sold that day. Knowing that other shippers were to rush the New York auction the rest of the week, the greater portion of Exchange fruit was not sent to New York but sold at outside points on the basis of the daily higher auction prices without paying the auction percentage for selling the fruit. That is why the rest of the week's Exchange sales on New York auction did not equal those of Monday. Mr. Nagle showed a statement signed by the presidents of local organizations of the Exchange representing 1,700 growers, expressing confidence in the management of their fruit sales. He agreed that outside growers had lost heavily by the heavy

shipments of Monday, but that was their fault, not the fault of the Exchange.

Other speakers argued pro and con, but the decision is not yet announced, for the discussions among fruit growers after the meeting still seemed to show equally divergent opinions. Perhaps the only verdict can be the final judgment of Exchange members as to their confidence in their management.

PEAR DRYING SCIENCE.

Lake County Horticultural Commissioner Fred G. Stokes gave detailed methods for the drying of such luscious jumbo pears as had never been seen by many in the convention until he showed their translucence before an electric light and passed a sackful through the crowd. We hope to publish this at about the time people are preparing for pear drying, since if published now it might be laid aside and directions lost. They dry as little as 4 to 1 in some cases; and the jumbos sell now at 11 to 14 cents. Fruit from one orchard recently sold for 11½ cents f. o. b. ranch. The fruit was 20 per cent jumbos, 60 per cent extra fancy, and 20 per cent fancy. More of this next summer.

Contra Costa County Horticultural Commissioner F. T. Swett followed with a pointed paper interjecting questions to learn the extent of dried pear consumption among those in the audience. Four people out of 200 or 300 signified that they had eaten dried pears three or four times in a year. "Who knows how to cook them?" but thereby hangs a tale in our Home Department.

About 1500 tons of dried pears are marketed per year, used mostly by Northern Europeans or immigrants from those countries. But we are selling less than we used to, largely because American housewives do not know the best ways of preparing dried fruits of all kinds. Growers' organizations have been helping at this, but we need better technique, better methods of preparation as well as cooking. There is a wide field for trained scientific investigation in the preparation of our minor fruit products and by-products, jellies, marmalades, chutnies, fruit pastes, and material for bakers and confectioners. At the laboratories of the University at Berkeley, investigations of utmost value are being carried on this line.

"I want to make a definite suggestion, which I trust may result in some action. Let's talk it over with Dean Hunt and President Wheeler and the Regents, and see if it is not possible to establish an adequate Fruit Products Laboratory. And if it seems advisable, let us urge that at least a part of the establishment consist of a small but practical working plant at Davis.

"Such a plant should be equipped with evaporators, with dry trays, with sulphur houses, with a small canning plant, with appliances for processing, and should be adequate to test and demonstrate the working theories evolved in the scientific laboratories." This plan is working now in the University creamery.

We need standardized methods of bleaching fruits and nuts. The market demands a light colored product. But the bleaching often results in a sulphurous smell that repels the

consumer.

E. B. Anderson of Contra Costa county called attention to the fact that where freight rates permit fresh pears to be shipped, it is not economical to dry them, so only the windfalls, and some years the second grades, are dried. That is why Lake County Dried Pears are in a class by themselves.

Frank Henry of Fresno county suggested exploitation of the peeled dried pear product which in former years won World's Fair prizes for his county. The peeling was done by slipping the skin off with the fingers after sulphuring.

FUTURE OF WINE GRAPES.

E. M. Sheehan, speaking for himself and not for the Viticultural Commission, etc., said in part: "It is unfortunate for the wine grape interests of California that the industry is linked, not from choice, but, rather, by the influence of its enemies, with all other elements of the liquor business, and it has had to stand or fall under this alliance. To date it has been able to weather the load; and taking its enforced position in the front of the battle line, it has saved itself and its weaker allies.

"The issue has not been a fair one and it never will be until such time as the wine grape interests propose their own alliances and proceed to initiate constructive legislation looking toward placing the distribution of wines on a plane that may not excite adverse comment.

"Aside from the menace of prohibition, the wine grape industry of California has, in my judgment, an excellent future. The very recent Federal legislation has given California an advantage, if availed of, that will operate beneficially in two directions. The recent act of Congress reducing the internal revenue tax on wines will probably not be interfered with successfully for a long time."

Missouri and Ohio secured the privilege, to a limited extent, of adding water and sugar to their wines. This is not necessary in California; and the advertising possibilities of this feature will probably be used greatly to our advantage. Movement of wine grapes East the past season may become greater in the future, though transportation is too high at present.

Mr. Sheehan estimates that this season 220,000 tons of grapes will have been used for sweet wines, 140,000 tons for dry wines, and 40,000 tons for brandy. About \$1,000,000 will have been paid for table grape and raisin culls. He takes "the position of an optimist in relation to the future of the wine industry in California" and does not believe it will be destroyed.

PRUNE AND APRICOT GROWERS' ORGANIZATION.

G. E. Merrill read a paper scheduled to be prepared by J. H. Bone, making the point that past failures are the stepping stones to success—that facts discovered through previously unsuccessful organizations have led to the formation of a plan which follows that of the successful raisin growers who in turn had previously experienced disastrous failures. Details of the present system have been published and may be ob-

tained by writing the gentlemen named at San Jose, so we do not reproduce them here.

"In addition to the many indirect benefits that will result from the formation of the Association, it will eliminate speculation; it will make possible the standardization of the pack; and it will result in a general raising of the price level for both prunes and apricots through the development of an improved form of package and popularization of that package through national advertising.

What of the Future?—"Next year we shall have more prunes and apricots in bearing than ever before and our orchards will be better cared for than ever. What of the more distant future, which after all is only a few years ahead, when California will have 150,000 acres of prunes in bearing and 60,000 acres of apricots?"

Mr. Merrill has every expectation of organizing in permanent form before Christmas.

Harris Weinstock suggested that we do not wait until we are dead to insure our lives, nor until our houses are burned before we insure them. He emphasized the time of prosperity as the time to insure the future prosperity of prune and apricot growers, by getting control of their product in their own hands.

E. B. Anderson of Walnut Creek recalled vividly the loss of \$1600 and the mortgage on his orchard which followed collapse of the Cured Fruit Ass'n of Santa Clara Valley, but said he was from Missouri and very friendly.

Harry Dunlap of Napa pointed out that all undesirable features of present marketing are due to one element—speculation. Eliminate that by growers' control of their crop, and Eastern dealers would push its sale to consumers, knowing they could depend on uniform grades and supply.

SAN FRANCISCO PRODUCE MERCHANTS.

San Francisco County Horticultural Commissioner Dudley Moulton showed that produce merchants can do better with a uniformly standardized and inspected product; and that they know best of all how fruit and produce should be packed.

Since they will be very directly affected by the proposed amendment to the Standardization Law making it apply to shipments within the State, they are entitled to a voice in making that law.

San Francisco receives not only the best of all kinds of fruit, but she also receives culls that are dumped onto the commission merchants but should never have been marketed at all. Mr. Moulton has returned some of such fruit to growers, especially if insect-infected. In one case three men together bought Southern cull oranges infested with scales, wrapped them in stolen or used Sunkist wrappers, put them in Sunkist boxes, were caught and stopped; but repeated the offense. The commissioner has notified apple growers in several districts that not more than 3 per cent of worms will be permitted.

Inspection of trees for use of growers is no more fair than inspection of fruit and produce for use of consumers; but the later also produces more stable markets and larger profits for the growers.

TABLE GRAPE STANDARDIZATION.

That a sugar test for table grape maturity is unsatisfactory, was developed in the questions and answers during one of the most interesting sessions of the convention. F. B. McKeivitt called attention to the numerous complaints from Eastern markets, of sour Malagas this season. As chairman of the Committee on Legislation, he recommended an 18 per cent test on all but Emperors and Cornichons. Horticultural Commissioner F. P. Roullard of Fresno county admitted that 17 per cent grapes this season were sour, while last season 17 per cent grapes were sweet. The inspection work in his county where most of the Malagas are grown, has been systematized and standardized to such an extent that there was very small possibility that mistakes in testing had been made.

Horticultural Commissioner H. H. Ladd of San Joaquin county called attention to the growers' sentiment that 17 per cent Tokays are sweet enough and that no change is desired. Another speaker suggested that raising the Malaga test 1 per cent would put that variety back 2 weeks and throw them seriously in competition with Tokays.

Chas F. Collins, Horticultural Commissioner of Tulare county, wrote a letter stating that there would probably be little objection there against a raise of 1 per cent on the earlier varieties, but that Emperors should stay at 16 per cent on account of frost danger.

Imperial County Horticultural Commissioner F. W. Waite asserted that all the shippers in his Valley held their Malagas last season until they tested 18 per cent; and no hardship resulted.

No one suggested an acid-sugar-ratio test for grapes, so we inquired from all the authorities available for the reason. They uniformly did not know why such a test should not be worked out as with oranges; but perhaps the University will enlighten us in a future issue.

The abuse of packing as much as 28 pounds of grapes into crates of four baskets, each intended to hold 5 pounds, was discussed; and a maximum legal limit recommended to the convention not only for table grapes, but also for apples and pears.

It has been the practice to clean the crates to make room for more grapes until nearly two inches were added above the baskets, which are four inches deep; and then so much fruit put in, that the top had to be bowed with considerable pressure. This crushed and bruised the berries, making them mold quickly. It also gave a cut-throat advantage to shippers who advertised these heavy crates, and compelled the rest to pack likewise. It was pointed out that the originators of that system, having brought the rest to their level, are not reaping the advantages now, and are willing to return to sane packages. Thus, no legal weight limit would be needed, were not other people likely to start the same procedure periodically.

(Continued on page 580)

The late cold snap, instead of hurting the crop, has improved the color of the oranges in the State.

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EDITORIALS

THE WEATHER WE ARE GETTING.

THE relentless high barometer, which is circling somewhere overhead, keeps along with its hateful work, making it impossible to bring up relief forces from our gentle ocean, and dropping frost-bombs every morning. These frosts, although we are obscuring the whereabouts of our most tender things with copious smudgings, are certainly inflicting some losses—reducing olives to oil-grades, pinching the juice out of citrus fruits, shortening the alfalfa grazing-season, etc., and chilling the Thanksgiving in some hearts, no doubt. But even with such unusual visitations, November is not a dismal month, as it is pictured by humid-region poets. The days are clear and bright, the sun is warm, and for the tourist, whose sunrise comes in the middle of the forenoon, this weather must be counted "heavenly," but to the one whose livelihood comes from growing things, it should be warmer and wetter—as indeed it may soon be.

Probably the height of futurist wisdom about the California seasonal rainfall is that you "can not almost always tell." Any one can study the records of the last sixty-five years, and bring out what suits his temperament, and still be forced to admit that it may come just the other way—which is death to prophecy, except of the Delphic type, and that may, after all, be the highest wisdom in the end. Our meteorological friend, L. E. Blochman of Berkeley, favors us with this memorandum:

To some of my friends in Santa Maria, after their heavy September and early October rains, I predicted that they would have lots of time to thresh the beans that went through the rains; that both October and November would be very dry and probably only light rains in December. I am still willing, regretfully, to reiterate the unfulfilled part of my forecast. Invariably heavy September rains are followed by a long period before the regular rain season starts in. They are also, as a rule, though not invariably, followed by seasons of light precipitation. In September, 1904, we had five inches of rain a few days earlier than this year; some corresponding rains in October; a long, dry spell till sometime in December (one inch rain only between), but after January 1st the rains came practically normal. In 1851, 1911, and 1912 we had very early September rains, though less of them than this year, and we had practically dry seasons. The weather map of this year shows the movement of the storm centers to be quite far to the north, a sign that outside of possible showers the rainy season proper is still in the future.

The comfort for the hopeful man is then that we have had only freak rains so far, and the prevailing northers have largely blown them away. When the elements get down to their regular system, the probability is that we shall get enough, with chances for both too much and too little. The brave man takes these chances and goes ahead with his regular work. It is the only way, for a fair chance is the best a man gets in this world. All the world prefers a dead-game sport to a sure-thing artist, for the former is always ready; the latter, seldom. In farming, as in righteousness, it is the virgin with gasoline in her tank, who goes to the wedding.

THE WORLD IN BONDAGE.

IF THINGS really go on as they seem to be trying to go, we shall have the world so cluttered with entanglements that all plain persons, who simply wish to pick fruit, milk cows, hoe corn, and pay taxes, will have to get off from it—if they can. The Kaiser's plan to get Paris in three weeks, Petrograd in three more, the Suez canal and Egypt in three more, has, of course, gone glimmering, but now the Allies proclaim that they are not going to be content with driving the Kaiser into his own corner, but will hog-tie him. That is not much of our affair, so we let it go at that. But some other things which are being planned more nearly affect us. There is that Paris pact of last year, by which the Allies propose that all those who have been trying to mind their own business during the war will be excluded from the world's markets by discriminations, so that the menu, over as much of the world as they jointly control, shall consist of Russian kaviar, British roast beef, Italian fruits, and French wines, and nothing Danish, Hollandise, Scandinavian, Spanish, nor American shall enter into the lives of Allied peoples. We have little fear of such a policy lasting long, if it is ever put into operation. The people will expect to emerge from present distress into broader and fairer humanity and greater freedom to enjoy individual rights; and to trade as each finds most advantageous is one of such rights, which cannot be long withheld. If it is more advantageous to trade with vanquished enemies than with victorious friends, they will soon be doing it, and all pacts to force other action will dissolve.

A LABOR PACT PROPOSED.

ANOTHER pact, originating not within the ranks of sympathetic belligerents, and aiming to determine not national but class action, is now proposed by the American Federation of Labor, now in session in Baltimore. If such world-pact should be undertaken by organized labor with the idea of joint action to secure for itself undue advantage as against proprietary producing interests in which other classes are engaged, it would be as hateful and inimical to the rights of humanity as is the Allies' trade-pact to which allusion has been made, and we must hope it would ultimately accomplish as little. But when organized labor rises to a high patriotic and humane motive, it is entitled to respect and support. This seems to be the present purpose, and we accept it as such until otherwise demonstrated. As against oligarchical aggression and appropriation of human rights and privileges, organized labor, properly actuated and controlled, should be fundamentally opposed. The Baltimore convention is therefore justified in its declaration:

"Collective action by a League of Nations," can properly prevent the use of armed force for national aggrandizement and for exploitation of the small countries. Establishing methods and agencies which render display of military and naval power no longer effective is the practical and direct method to abolish rivalry between nations in standing armies and naval equipment. The labor movements of all countries have contributed much to the will for peace and justice, and must do their part in the development of the agencies by which their will can be expressed."

And this influence it proposes to exert by a world assembly and federation of labor organizations as soon as the war is ended. This will probably be convoked as soon as the period of negotiation for permanent peace begins.

WHAT WILL AGRICULTURE DO?

IT IS probable that all organizations—industrial, scientific, and philosophical—in different countries will seek world assemblies during this negotiation-period, which may be prolonged. It is not likely that the world, after this shaking-up, will be content to leave the new questions of national relations to settlement by a bunch of nobles, diplomats, statesmen, and military heroes, such as have patched up peace hitherto. If we are not mistaken, the adjustment will be undertaken, or influenced, by the people at large in all nations as never before. And everybody seems ready to have a hand in it. An appeal to the bar of the United States, a great neutral nation, to aid in defining international law and right in such terms that world peace might be maintained, was made by Sir Rob-

ert Laird Borden, Premier of Canada, in an address at the Lawyers' Club in New York last week. He appealed to the lawyers to recognize the field that was open to define international law and right in such terms that by them and abiding peace of the world might be maintained.

As the labor organizers and the lawyers have thus, in a way, declared their humanity and patriotism, so it is to be expected commercial and manufacturing organizations will also rise to their opportunities and duties, and present their views as to ways in which the world can be made better to live and do business in. All these and many more lines of thought and effort are more or less organized in all civilized countries, and ready to make their influence felt in world conferences, which will have much to do with determining the future courses of international law and action. Is agriculture ready to do anything?

WHY IS THE UNITED STATES UNREADY?

AS CONDITIONS now are, the United States is unready for participation in a world conference of agriculture, because we have no really national organization to be recognized as such. We have several organizations of large membership and wide influence, but none to which all of these recognize themselves to be tributary. Several of them have recently affiliated temporarily, or rather have acted jointly, in several matters, but there is none to which they all grant superior jurisdiction—each considers itself national with the result that no one of them truly is. On the other hand, European countries do have properly co-ordinated national organizations. We will not take space to name them, but we personally came into contact with them, and saw their working in Italy, Austria, Germany, France, Denmark, and Great Britain; and no doubt other countries, beyond our touch in 1813, had and now have them also. They are national because of their recognition and functioning as such. They are, in a sense, of the governments of the countries, but not in the governments; that is, they are not departments or bureaus. Such organizations are at work also, and are recognized as integral parts of the governments—just as our own Department of Agriculture at Washington is. But the highest national agricultural organizations in other countries than ours are constituted by the governments, but not regulated by them. In certain matters pertaining to agricultural industry, they are higher than bureaus and then the governments themselves, for they are advisory thereto, and neither administrative nor legislative branches often or seriously depart from their decisions on natural agricultural interest and policy. The United States has the greatest agricultural interests in the world, and it has agricultural organization abundantly in education, commercial, scientific, financial, and geographical phases, but in the way of an organization which can authoritatively speak the agricultural word for the nation, the United States has none.

NATIONAL CHAMBER OF AGRICULTURE.

THERE is now before Congress a bill providing for the organization of a National Chamber of Agriculture which, if enacted, would provide for the handling of all important agricultural problems and policies in a national way. The chief purpose and function of the proposed organization, according to its title, are "for the purpose of promoting the equitable distribution of farm products," which may be interpreted to mean that it is to have cognizance of farm products as soon as they leave the lands of the producers, and thence forward. Or it may have a broader aspect, and include the relations of farmers to labor, to capital and to whatever other national concerns, which influence the ability to produce anything to leave his lands as well as to affect it afterwards. It surely has a wide scope as befits a truly national institution. The Chamber is to consist at first of nine citizens (at least six of whom shall be practical farmers), appointed by the President of the United States, who shall proceed to organize in such a way that later the chamber shall consist of one delegate elected by the farmers of each State, which shall secure the local organization prescribed in the law to qualify a State to make such election.

Thus the chamber will begin as an appointive, and grow into an elective membership. The idea is that the government shall create and incorporate the chamber, which shall, as soon as possible, pass beyond government influence or dictation and become autonomous. This is, of course, essential to its future because it is not intended to evolve an executive or congressional bureau or commission, but a body chosen by organized farmers and answerable only to such a constituency. This would be a truly national body, and would overlie all nominally national organizations which it could harmonize and collocate while it encouraged and promoted them. It would not displace any if their aims and methods were worthy, but would advance all subsidiary organization which conditions required. If the creation of such a Chamber of Agriculture shall commend itself to Congress, and that is still to be seen, it would qualify the United States to do international agriculture as opportunities may arise. If we had such a body now, it could call all national chambers, which other countries have under various names, to an

international conference, after the fighting ceases, which would speak the world's word in support of permanent peace and humanity, of which agriculture, through all the world's history, has been a conservator, to the limit of its power and influence. Agriculture now has in all civilized countries outspoken appreciation and esteem never before accorded to it among the callings of men. The United States as the leading agricultural nation, could summon agriculturists of all nations to conference about world purposes and policies, and the decisions of such a conference would have great weight in reconstruction of international relations upon a just and enduring basis. If Congress acts promptly it can qualify this country to extend such an invitation to the nations. But to thus qualify, we must have a body which is not a part of the government but of the people, for the invitation will not be extended to agricultural officialdom, but to farmers in all countries who are organized in their own rights and names and beyond government control in thought and policy, and who are therefore capable of acting independently and spontaneously.

nuts are apt to give various seedlings. But you do not say whether your trees have borne nuts or not, and therefore you do not know what you already have. Some of them may be as fine as silk, and if so you may have little to gain from grafting. We should let the trees bear, and graft those which are inferior, taking scions from the best, if you have any. If not, graft over the whole lot with scions from other growers who have good types. Top grafting in the common way works well with the pecan—working in the branches above the forking. Graft rather late in the dormant season.

The Hyacinth Bean.

To the Editor: A dealer gave me two beans, like those I am sending you, last spring. I planted them here in my garden in the Delta. The vines ran up a 10-foot pole, slopped over the top, and then went at work—making beans. I have already shelled out half a peck from the two vines, and they promise to keep at it until frost. My Japanese farmer, who is an intelligent botanist, does not know them. The Chinese refuse to be responsible for them. The dealer does not know where he got them, and there you are! What is it?—J. P. I., Las Vegas.

It is a hyacinth bean (*Dolichos lablab*). Your Oriental cabinet does not recognize it because it came the other way round—reaching this country from Egypt as early as 1818. It is grown in this country and England exclusively as an annual ornamental vine for covering arbors and trellises, and its flowers are very showy. In the south of France and in some tropical countries the beans are eaten. California seedsmen carry it as an ornamental.

Dying Apricot Trees.

To the Editor: The leaves of some of my five-year-old apricot trees turn yellow and the trees soon die. The inside of the bark of the infected trees is white. What is it, what is its cure, if any, and if not, what other trees will thrive? The soil is a light, sandy loam with some gravel in spots.—A. A., Mt. View.

You do not give symptoms enough for confident diagnosis. If the roots are partly decayed, and the white under the bark is a felted layer under the bark near the ground, it is likely that the casualty is due to decaying roots of oak trees in the soil. There is no cure for a dying tree. Dig it out—making a large hole and carefully removing all roots encountered. Fill with fresh surface soil from a distance, and plant a new tree. Apples and pears are more resistant than stone fruits.

Dipping Seed Grain for Smut.

To the Editor: When using formaldehyde in solution for grain, how long should the grain be allowed to soak, and if it is allowed to soak for a half-hour will there be danger of injury to the crop?—H. W., Angels.

Probably not; for 30 minutes was at first prescribed for the soaking, but it was later shown to be a waste of time as ten minutes would allow the solution to penetrate the grain mass. It is only necessary to fully wet every grain; the virtue is not in the soaking, but in getting every grain wet. There are machines which work well, and they keep the grain moving through the liquid and do not soak at all.

Large White Beans.

To the Editor: Do you think that the large white bean would do well in this locality? I see that they are quoted as high as any bean. Blackeye and Tepary are the kind most raised around here.—E. L., Winton.

Large white beans are chiefly grown on moist river lands. They do not like to rough it in heat and drouth, as the pinks and those you mention are willing to.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco, for the week ending at 5 p. m. November 21, 1916.

STATIONS	Past Week	Rainfall Data		Temperature Data	
		Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka	00	3.53	7.31	60	32
Red Bluff	00	3.63	4.37	70	34
Sacramento	00	1.08	2.77	61	32
San Francisco	00	2.78	3.09	63	46
San Jose	00	1.99	2.38	70	28
Fresno	00	1.88	1.70	68	36
Independence	00	1.13	1.57	62	32
San Luis Obispo	00	4.14	2.85	78	32
Los Angeles	00	3.56	1.75	80	46
San Diego	00	1.19	1.07	71	46

By
the Editor

QUERIES AND REPLIES

Inquirers Must
Give Full Name
and Address

Pruning Fruit Trees.

To the Editor: I have a small orange and lemon grove. The trees will be two years old this coming March. Will you tell me the best way and the best time to prune them, and also about pruning cherry trees and when to prune them?—M. R. K., Arbuckle.

We cannot expound pruning in a paragraph. It is an operation which a fruit-grower can practice and study to the end of his life, and still have something to learn. In our book, "California Fruits," a whole chapter is given to the general subject, and special suggestions on pruning are given in each chapter devoted to each different fruit. In the Pacific Rural Press there is something given nearly every week about pruning, and there probably always will be; for, though Adam began pruning when the Lord set him to tend the trees in the Garden of Eden, no universal method of pruning has yet been agreed upon, and in the nature of things there never can be.

Do not cut your citrus trees now. Let them carry all their leaves, for in case of a light frost they may act as a cover to protect lower growth. Prune citrus trees in the spring and summer as they begin to make new growth. Prune cherries and other deciduous trees now and during the next two months, while they are bare of leaves. Young citrus trees need little pruning except to shorten branches which are running away with the shape of the tree, and to remove suckers which may put the branches you wish to use, out of commission. Get into your head a good idea of the shape of the orange and lemon trees you ought to have, and cut away what is destroying that shape. If your cherry trees have gone two years without pruning, get a good tree man to help you get them into shape, and then by careful reading and by studying the trees of successful growers, try to get wise about treating them in the future.

Sharpe's Number 1 Prune.

To the Editor: Your correspondent, "M. S.," of Ukiah asks what prune to plant? Tell him by all means to plant the "No. 1," of which I. O. Scarlett says, "It is the most profitable prune I grow." He sold the 1916 crop of French at 5 1/2 c and the "No. 1" at 11 1/2 c. At Napa Farm Bureau Fair "No. 1" took first prize, and ran 19 to the pound again French 33 and Imperial 23. I am sending you sample and desire your opinion of quality.—Frank Owen, Napa.

The prune looks the record you give of size. It has fine grained, close-textured flesh, and a smooth, thin pit, relatively small. The specimens sent are monstrous. We had them cooked and judge them high quality, but incapable of being mouthed as a stewed prune, unless one has the mouth of a hippopotamus. Of course, to be processed and eaten out of hand by successive bites, size is an advantage, but few prunes are eaten that way in this county. We apprehend the time will come when outside sizes of prunes will be discounted, as or-

anges are, but people will probably not worry about that so long as they sell well. Still a medium-sized prune is the only rational thing for stewing.

Citrus Trees and Frosts.

To the Editor: Please tell me the best way to protect young orange and lemon trees from frost. We have, as a rule, not very heavy frost. I have been told, if there has been a heavy frost, to sprinkle water on the leaves before sunrise. Would that be a good way to keep the trees from frost-bite?—M. R. K., Arbuckle.

Good ways to protect young citrus trees from frost are to drive stakes around them and hood them over with burlap, or to bundle them with corn stalks, placing the stalks around them loosely, but still completely, and tying the bundle with wire or cord around it. Sprinkling cold water, as you indicate, may keep a light frost from doing injury because it thaws out the frosted foliage slowly. If the sun comes quickly on such foliage it is more apt to thaw it so rapidly that the cells are ruptured and the tissue destroyed. It does not prevent frost, but it may help the leaves to recover from frost. It is only useful and effective when the injury is very slight indeed, and cannot be depended upon either as a preventive or cure.

Insects on Fig Roots.

To the Editor: I have white Adriatic fig trees 25 years old, among which there are several smaller trees, of which the leaves turn yellow and drop during the summer. These trees do not mature their fruit well. I have heard that this is due to an insect working on the roots. This condition spreads to more trees every year. I have heard that the use of lime was good to overcome this. Is the use of lime beneficial in such a case?—A. N., Fresno.

We know no parasite affecting the roots of fig trees, excepting microscopic worms called "nematodes," and they are not common. If they are present you can determine it by digging up some of the small, fibrous roots and see if they have swellings on them. There is no cure for them. Lime would not affect them, unless you applied enough to kill the trees.

Are you sure that your land is not spotted with alkali? If it is, it would cause the trees to act as you describe, and the only cure is to tile the land and wash out the alkali with free use of fresh water irrigation to soak and carry away the alkali through the tiles. If you have alkali, the use of lime would make it worse, though gypsum might be of some use.

Grafting Pecans.

To the Editor: I have seedling pecan trees seven years old. Is it desirable to bud or graft to soft shells? They average about 16 feet high and three inches in diameter at the ground. Would it be better to bud or to graft, and at what time and the best method?—W. J., Hardwick.

You can only be sure of getting the largest, best type of pecans by grafting, as even the best seed

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Chilean,
Japanese,
African and Asiatic Plants.
Trees and Shrubs
Suitable for Pacific Coast conditions.

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The Shipping-Plum Outlook.

To the Editor: Will you tell me something of the market value of plums,—which are considered the best shipping varieties, surest bearers, also best, on what kind of roots? My soil is No. 1 prune ground. All varieties of fruit in 3-year family orchard are doing finely, especially plums and peaches.—A. B., Visalia.

[Answered by F. B. McKevitt, Sacramento.]

Since the soil is number one prune land, do not fail to urge him to make his entire planting to prunes, of which he probably would find the best two to be the French and Robe de Sergeant.

The plum business is likely to be overdone. There are thousands of acres of plums in Solano and Placer counties. Old peach and apricot orchards have been grafted over, and more are being grafted over, to shipping plums, since peaches and apricots are too uncertain in profits.

The best shipping and bearing varieties are as follows: Beauty, Climax, Formosa, Tragedy, Santa Rosa, Grand Duke, Diamond, Hungarian, Giant, Wickson and possibly the Sugar and Standard Prune. All these plums should be on the Myrobalan root.

In regard to prices, it is hard

to give a fair idea. For example, this year plums netted in the neighborhood of \$100 per ton. Last year they netted between 40 and 50c per crate, which shows that the fruit did not pay to the grower \$20 per ton. Shortage of fruit in the East, and money plentiful, accounts for the high prices prevailing this year, which exceed anything the writer has ever known, taking it throughout the season.

In my opinion there is great danger of the shipping plum business being overdone in the near future. I do not anticipate the same condition in the French prune business, as the demand is strong and has been so for several years past; I consider that the French prune orchards of the Santa Clara Valley were so badly injured by the drouth two and three years ago that they will never recover their heavy bearing ability.

I am personally interested in growing both plums and prunes in Tulare county and from my experience and knowledge of both the business and the country, I would unhesitatingly recommend the planting of prunes for drying purposes.

ing oranges in the box. The clip-pers used are so made that it is very seldom that they scrape the skin, though it is the easiest thing to cut

ORANGES PICKED CAREFULLY.

[Written for Pacific Rural Press.]

As careful picking is vital to oranges, most of the packing houses have gangs of trained pickers working under a general superintendent. Such a superintendent is Fred Arth for the Crown Jewel packing house near Redlands.

Each gang has a foreman selected for known reliability and paid more than the rest, to have general supervision of the gang's work while Mr. Arth is visiting other gangs. This foreman picks oranges with the rest, but keeps records for all.

The current record of each gang shows whose orchard is picked each day, when the picking started, the number of boxes for each picker, when quit work. They work 9 hour days at \$2. According to Mr. Arth, 9 boxes per hour is fine picking. But carefulness is always emphasized above quantity. The superintendent visits all gangs and inspects one by one the oranges in at least one box for each picker each day.

Every man chalks his number on a painted space on each box in order to get credit for that box. This places responsibility also (until the picking box is emptied) for every carelessly picked orange handled by the packing house. The numbers are erased after the boxes are emptied and the fruit inspected at the packing house. This system has an advantage over the usual custom of putting tickets into the boxes, in that the distinguishing mark does not get misplaced or lost.

Picking boxes are not filled level full because in handling, especially in unloading from wagons, the upper boxes are likely to be dragged over the others with a corner lowered enough to bruise the fruit. It is the inspector's business to see that fruit is not pulled off the tree but is clipped clean. Pulling often leaves stiff slivers on the "button," which are likely to injure neighbor-

the stem off close to the button.

"An orange cut off right can usually be rubbed across another orange without scratching."

Bartlett Pear

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FRESNO, CAL.

Resistant Fruit Tree Stocks.

[From Address by A. L. Wisker, at Cal. Fruit Growers' Convention, Napa.]

Of great importance in the improvement of fruit growing are the many experiments dealing with improvements in root stocks, to meet every condition of soil-moisture and the underground attacks of insects and plant diseases. Naturally such experiments must usually be carried on for a considerable period before wholly conclusive results are accomplished. One of these experiments that has been in progress long enough to permit definite conclusions is that of the Southern Oregon Experiment Station, where Professor Reimer has been working for some years with many species of pears to find a stock that would be free from the disadvantages of the French seedling.

Pear Stocks.—As is well known to most orchardists, the French root is subject to great injury from attacks of the pear root aphid and is particularly susceptible to pear blight. As it suckers readily and these suckers often carry blight to the underground parts of the tree, the use of the French root not only adds to any system of blight control the heavy expense of eradicating blight from the root, but it at the same time constitutes an added and needless menace to the life of the tree.

Reimer's work has been most systematic and has demonstrated that great improvement in nursery stock will result from discarding the French seedling and substituting the Japanese or Chinese seedling, sometimes called the Sand Pear. For years this was known to botanists as "Pyrus sinensis," but Rohder, of the Arnold Arboretum, has recently determined that "Pyrus serotina" is the correct name of the species generally used by nurserymen under the names "Japan Seedling" or "Chinese Seedling." This species is quite resistant to attacks of the pear woolly aphid and remarkably resistant to blight. Reimer repeatedly inoculated the roots of this species with blight without producing a single case of the disease. At the same time he made similar inoculations with the same culture in the roots of French seedlings in adjoining rows, killing 100 per cent with blight.

This species produces a tree of great vigor when used as a stock for our commercial varieties and makes a perfect union. Although in satisfactory use in the Eastern and Southern States for over 50 years, its use on the Pacific Coast dates back less than ten, but its desirable qualities are now so generally recognized here that it appears destined to supplant the French root.

Apple Stocks.—Harry Nicholson, a Tennessee nurseryman, is now using the Japan root in an experimental way as a stock for apples, to obtain a root that will not be injured by the woolly apple aphid—a pest that makes apple growing impractical in some nurseries. Nurserymen will welcome the discovery of a stock for apples that is aphid proof and which will avoid the cumbersome method, now practiced to a slight degree, of double-working on Northern Spy, a variety somewhat resistant to aphid.

Plum Stocks.—Plum growers realize that there is much room for improvement in the stocks now in use for this fruit. Myrobalan, the stock usually used for moist soils, is very susceptible to crown gall. The same is true of the peach root, which is generally used in dry soils. Peach root has the further disadvantage of making a most unsatisfactory union with many plums, among them being Diamond, Grand Duke, Yellow Egg, Robe de Sargent, and Sugar. A stock for plums that will give as good results on dry soils as the peach, that will make as good a union with all varieties as Myrobalan, and that will be as free from

crown gall as the Damson, without its tendency to sucker, would be of greatest advantage to plum growers. Leonard Coates has been experimenting with several new plum stocks, and as he is already responsible for the introduction of a number of valuable varieties of different fruits, and for the selection and propagation of certain desirable strains of other varieties already known, it will only be in keeping with his past achievements if he should score another improvement in this direction.

Peach Roots for Stone Fruits.—A seedling peach from China, now the subject of an experiment by the Bureau of Plant Industry at the Chico station, promises a stock that is remarkably resistant to alkali. If present expectations are realized, it

is probable that peaches, apricots, nectarines, plums, and almonds can be worked on this root and grown on soils now wholly unsuited to their culture.

WATERMELON BLIGHT.

To the Editor: What can be done to kill watermelon blight? We have had watermelons on three acres for three consecutive years and they blight.—J. C. S., Ontario.

[The fungus lives over in the soil and any treatment to be effective would be too expensive. Try a crop of different nature on this three acres for two years. That will probably starve the fungus.]

The Clovis Chamber of Commerce saved a large amount of the raisin crop by use of a lumber company kiln.

What Trees Shall We Plant ?

This problem confronts the man who is just starting as well as the old settler who wants to set out another acre or a few more acres to the farmer's most profitable crop—fruit.

—and it IS a problem. To look ahead several years so that the trees you plant now will produce PROFITABLE crops when they come into bearing, requires careful study and a knowledge of more than local conditions.

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—give the best satisfaction. They are started right—grown right—and sold right. They might truly be termed "pedigreed" for they are the kind you can depend upon—the kind that produce fancy fruit.

It makes no difference how large or small your requirements—your order will be promptly and carefully handled if sent to us. Our exceptionally large and complete stocks of FRUIT and ORNAMENTAL TREES, VINES, SHRUBS and PLANTS comprise nearly everything that grows.

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Fruit Growers Convention Discussions.

(Continued from page 575.)

FRUIT BELOW STANDARD QUALITY.

Bearing in mind the possible results if the Fresh Fruit Standardization Law is amended to apply to all shipments within the State, H. C. Rowley of the California Fruit News leads up to the following paragraph:

"I accordingly plead for the establishment of a high standard to be marked as such. Then allow all other produce, which is not deleterious to health or definitely injurious to the neighborhood into which it comes, to be sold for what it is worth: if the owner and consumer agree that it is worth sufficient to pay the cost of its handling and sale, always, however, with the understanding that it must be plain to the consumer just what he is getting. If it is made impossible to deceive or mislead a consumer through offering an inferior or unfit product for better than it is, the balance of the problem will take care of itself."

He emphasizes the advantage which will encourage production of best fruit by giving it an advertising value; but he would not permit destruction of valuable food products in this day of high cost of living just because they are not in the "extra fancy" grade.

There are many consumers who cannot buy the finest grades and would have to do without any fruit, unless lower grades are marketed. There are many producers who have not means to produce extra fancy grades only, yet they should have the right to supply the people who want their fruit.

Not everyone cares to pay for fancy packages. Those who wish, should be allowed to buy fruit in packages considered by the producers most economical for safe handling. Such economy might depend on uniformity of packages; but in this, as in case of lower grades of fruit, the reward of increased prices for superior articles will be sufficient to encourage the production of goods and use of packages of a standard higher than the average.

APPLE STANDARDIZATION LAW.

Praising the Apple Standardization Law as it worked in Pajaro Valley the season of 1915-16, F. S. Jerome, President of the Watsonville Apple Distributors, called attention to the harm done this season by packers who worked up a reputation under the Act last year and put out defective packs this year. One order for 100 cars has recently been turned down for this reason.

Opposition to standardized packing naturally comes from those who have inferior fruit which they want to sell at high prices.

"It is quite apparent," said he, "that we need two grades of standardized fruit. The lower grade should include fruit of less regular sizes, and with slight defects such as do not seriously damage the value of the fruit." But rotten apples, and those with worms or other infectious insects or diseases should be kept out of both.

Strict culling raises prices of marketed fruit both by reducing the quantity marketed, and by improving its quality. "If fruit is not well grown, however, no amount of standardization will enable it to do well on the market." This point was also emphasized by Mr. McKevitt, president of the Cal. Fruit Distributors.

FUTURE OF RAISIN GRAPES.

Reviewing the past success of the Cal. Associated Raisin Co. James Madison sounded a note of warning not to expect the present abnormal conditions to continue. Of the recently picked crop he estimated 90,000 tons of Muscat raisins, 22,000 tons of Thompsons, 6,000 tons Sultanas. Recent large plantings have been mostly Thompsons, but the minute the war is over, our market will be flooded with Greek and Smyrna raisins at half the present price of our Thompsons. Within three years, the new plantings already in will produce as many additional Thompson raisins as were produced this year when the crop is 20 to 25 per cent heavier than last in spite of the rain. He recommends Muscats and Sultanas if planting must be done; especially the latter where conditions are favorable.

SORE-FOOTED HOGS FROM CONCRETE.

[Written for Pacific Rural Press.]

Concrete undoubtedly has a place on the modern hog ranch; but its use as a flooring for all parts of the house or fattening pen seems doubtful in view of practical experience of those who have tried it.

An instance of this kind was recently seen where a large number of hogs are swill-fed and because of the need for sanitation the entire floor was made of concrete. As a result practically all of the hogs were sore footed and moved about with great difficulty.

In adjacent pens where brood sows were kept, this difficulty was overcome by leaving an earth floor in half of the pen on which the hogs spent most of their time except at feeding time, when they ran on concrete.

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Kern County Organized for Rural Credits.

To the Editor: Replying to your letter of the 25th inst., which refers to activities in this county in connection with the Farm Loan Act, we have already organized the Delano-McFarland National Farm Loan Association with a membership of twenty-six farmers, borrowing in the aggregate \$70,000. Each farm center, of which we have twelve, is taking an active interest in rural credits. We have lined up something like 150 farmers throughout this county who will require between six and seven hundred fifty thousand dollars, and further applications are coming into this office from time to time. We will probably organize four associations during November and December.

It is not surprising that eighty per cent of the applications received are for the purpose of relieving farmers of mortgages at high rates of interest, but it is surprising that more of our farmers do not take advantage of this Act to borrow money for developmental purposes. There seems to be a feeling among those who are out of debt that it is advisable for them to keep so and thus relieve themselves of worry of which they have a vivid recollection from past experience. When this Act is thoroughly understood and farmers are convinced that borrowing money over a long term of years at a low rate of interest to make their farms more productive, and thus more profitable, I think then a great many will borrow for developmental work. It would not surprise me to find this county borrowing over a million dollars within the next twelve months, as great areas here are soils of fine quality capable of great production and on the whole are selling at a fair value. It is, however, necessary to provide water, which is generally done by pumping, the cost of which plants vary from \$1200 to \$2000, making it difficult for a young man with little means to make a start; but with the assistance of this Act, we feel that many people who have been unable to take advantage of their strength and industry through lack of capital will now take up these lands and add to the agricultural production of this county.

We have found a number of cases where land has been sold by local parties in which a small deposit was paid by the purchaser, the balance being repayable over a term of years secured by a first mortgage, and the sympathetic seller is willing to furnish the borrower with a clear title in order that he may have cheap money through the Act to develop his property. The seller will take

INCLUDES CHATTELS.

The Congress of Peru is considering a law to provide for agricultural loans on security other than land. Under the provisions of the proposed law, farmers could borrow money on their machinery, implements, livestock, lumber, timber or growing crops. Under the present rural-credits law, farmers may obtain loans on their land only, and the proposed law is intended to extend credit to the large number of farmers who do not own the land they cultivate.

a second mortgage in place of the first mortgage he now holds. This system helps men who do not have sufficient equity in the property, namely, fifty per cent, to come within the Act and at the same time give the Government the security that it asks.

G. C. Kreutzer.

Kern County Farm Adviser.
Oct. 26.

FIGS TO PLANT.

To the Editor: When is the best time to plant fig trees and what is the best kind to plant?—Subscriber.

[Plant any time while they are dormant. Do not let the roots dry out and put on protectors against sunburn. Set 40 feet apart and plant short-lived intercrops. Calimyrnas are highest priced but usually bear lightest because of the necessity and difficulty of pollination by insects from caprifigs. The fruit

is of best quality and largest size. White Adriatics do not require pollination by insects, are easy to grow, and prolific but likely to sunburn in hot districts. Black figs are easiest to handle, and there is a ready market for the well dried, graded, and unprocessed fruit. They require probably less care than the Adriatics. There is now a scarcity of dried figs.]

Another tomato cannery for Manteca is contemplated.



And Up They Go

No man who owns uncleared land need be stumped by the stump question. Formerly the clearing of land covered by stumps was a long, hard, expensive job. Often the cost seemed more than the land would justify.

During the last few years, however, the situation has changed. Thousands of land owners, those who follow modern methods, have saved time, labor and money—and rid themselves of the stumps—by using

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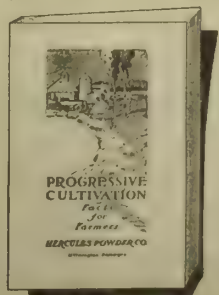
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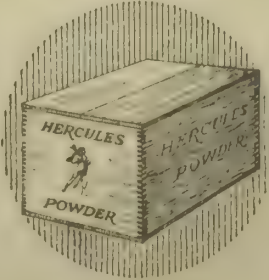


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Address _____



California Farming is Not Overdone.

[Extracts from Address by Dean Thos. F. Hunt, University College of Agriculture, Berkeley.]

The farmer himself is to blame for the fact that his farm earns only a small interest on the investment plus wages. If he buys a farm at \$50 per acre, and it nets him wages and 6 per cent in addition, he immediately asks \$150 an acre for it, and would not sell it for less than \$100, after which he may complain that farming no longer pays. The high price of land is an indication that farming does pay. But too high a capitalization may prevent land from being put to a productive use.

In 1910 the total number of persons in California over ten years of age engaged in gainful occupations, was 1,107,668. There were 225,070 persons engaged in agriculture, forestry, and animal husbandry. There were approximately 1200 architects, 2000 dentists, 3000 clergymen, 5000 lawyers, 5000 physicians, and 10,000 real estate agents. In the United States as a whole, about one-third of the persons over ten years of age engaged in gainful occupations were engaged in agriculture, while in California only one-fifth of the workers were so occupied.

So far as the number of persons are concerned, therefore, farming is not overdone in California. Relatively speaking, it is not a crowded occupation.

It is estimated that one-half of the 100 million acres in California are suited to some agricultural purpose, and that it is possible to till thirty million acres, although only five million acres are now actually being tilled. If the tilled area was in the same proportion to the area which it is possible to till, as it is in the North Atlantic States, twice the area would be under cultivation, or if the same relation existed between the possible and actual tilled area as in the three corn states, three times the present area would be under cultivation.

The value of all crops and the value of all animals owned on farms according to the census of 1910 was greatest in the corn states and least in California. For the United States as a whole the crop return in 1909 was a little more than 13 per cent of the capital invested; while for California it was less than 10 per cent. However, the return per farmer was much greater in California, since the capital invested per farm was nearly three times as great.

Crop Specialization.—Not only is there a segregation by racial, social and religious instincts, but there is a segregation of interest due to crop specialization, which is carried to a greater degree in California than in any other part of the United States—perhaps in any other part of the world. In California a farmer raises poultry, and has a Ford; he raises grapes and keeps a Dodge, or he raises prunes and has an Overland, oranges and a Cadillac, or lemons and a Franklin. He gets his income from the one and gives his care and attention to the other.

Size of Farms.—Speaking in general terms, $\frac{1}{4}$ of the farms of California were less than 20 acres in area, $\frac{1}{4}$ between 20 and 49 acres, $\frac{1}{4}$ between 50 and 174 acres, while the remainder were 175 acres or more

in extent in 1910. The latter $\frac{1}{4}$ occupied $\frac{1}{4}$ of the total area in farms. The average size of a farm was 317 acres, with an average value for land and buildings of \$16,447. The average value of livestock per farm was \$1447, and that of implements and machinery was \$414.

Tenantry.—Of the 88,000 farms in California, 66,000, or almost exactly $\frac{3}{4}$, were operated by the owners, 18,000 by tenants, and between 3000 and 4000 by managers. In the past 30 years there had been no material change in the proportion of tenants to farm owners.

Livestock Necessary.—There are those who believe that the United States will in the immediate future following the close of the war come into a period of still higher prices for livestock. I hope it will, since nothing can be of more benefit to the general agricultural development and welfare than an increase in animal husbandry. This is particularly true of California. The fruit grower should welcome the development of livestock. The stockman makes a good market for his fruit and his orchards need the fertilizer that the livestock produces. It will help to make California a greater fruit State than ever before. Animal husbandry is not overdone in California and probably never will be. It requires capital and ability. Animals and fruit are the products that California should produce because they either sell for more than five cents per pound or they contain a considerable proportion of water. If the farmers finished product does not fall into one or the other of these classes, he is apt to find eventually either economic difficulties or soil depletion.

SUDAN AND BARLEY HAY SAME SEASON.

[Written for Pacific Rural Press.]

A crop of barley hay and three cuttings of Sudan grass from the same land the past year was the result secured by J. W. Benoit, Holstein breeder of Stanislaus county.

Last December Mr. Benoit planted a portion of his old alfalfa land to barley, cutting it for hay late in May. After irrigating the land and again getting it in shape for seeding he planted Sudan grass in June.

Up to the middle of September he had cut the latter crop three times for hay and had a lot of good pasture left for his cows. He states that there is no danger to the cattle when pastured on it and that his cows did as well on the Sudan hay as they do on alfalfa hay. Chickens, he says, are crazy for the seed.

The Sacramento Valley Sugar Company has received two carloads of beet seed and is expecting more in the near future. The seed will be planted in territory which will make possible the opening of the sugar factory in Hamilton City.

It has been estimated that the total rice yield in the Sacramento Valley this year will be 2,500,000 sacks, valued at approximately \$5,000,000. This is the largest yield yet harvested in the valley.

MORE MONEY FOR ALFALFA GROWERS



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Hairy Peruvian Alfalfa

Hairy Peruvian produces the greatest alfalfa tonnage known—and does it under all climatic conditions.

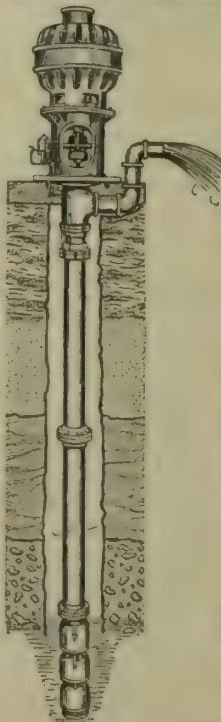
Hairy Peruvian has been thoroughly tried out and tested by the Arizona State Experimental Station, and by growers in both hot and cold countries.

Hairy Peruvian produces a great mass of leaves from the top to the crown of the plant, and as the leaves contain the greatest amount of food value, this type of alfalfa gives the farmer the maximum yield from his land.

Don't fail to plant Hairy Peruvian alfalfa this season. Our illustrated folder upon request.

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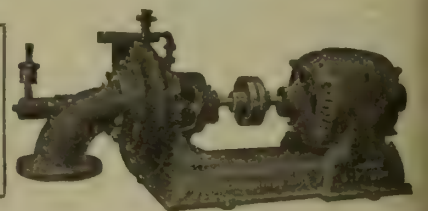


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A complete line of irrigating pumps of all descriptions, horizontal and vertical for belt drive or direct connection to electric motor.

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WRITE FOR CATALOGUE NO. 47.

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New Type Vertical.

Are automatically water balanced and require no adjustment of any kind. All weights of shafting and rotating parts are carried on the water film absolutely without the use of thrust bearings or adjustment of any kind.

No BALANCE RINGS or PLATES IN KROGH PUMPS. They are unnecessary, and mean only continual trouble. KROGH PUMPS with the least number of parts means less friction and greater efficiency. Get our Bulletin No. 78 before deciding on a pump.



Krogh Manufacturing Co.
SAN FRANCISCO. LOS ANGELES.

CHILDREN INTERESTED IN WEEDS.

[From Address by J. B. Hickman, Aromas, at State Fruit Growers Convention, Napa.]

It is rarely necessary to arouse the interest of children in plant life; and very little tactful and well-directed effort is necessary to establish ideals of great value to themselves and their communities. The agricultural features now developing in our school courses can be made doubly valuable by incorporation of such work in plant life as may be found in every school district. The roadside to and from school may easily become a highway to more than knowledge—a developed observation, correlating most valuable features of environment.

I also recall a hard-trodden city schoolyard where, when the sprouting seeds of malva and alfalfa pushed flakes of soil upward to reach the light, the pupils were requested to investigate; then to make simple

drawings of the plantlets as they developed; then design for drawing was suggested, and written description of their work. The study included the plant's life from heart-shaped leaves through changes of leaf, bud, blossom, and fruit to the final lunate carpels ready for another season's start.

Aside from any utilitarian results, if any one seeing the thousands of beautiful designs produced by these pupils from youngest to oldest, and reading their clear, definite statements as well as imagination-ventures, can suggest a broader, truer, fuller culture, I would be glad to listen.

It is worth while for the children to know our weed seedlings, to watch them develop true leaves, to watch the building and blossoming, the fruits and seeds as they form, how the seeds of their special plants are carried abroad, and how they are harmful.

This cure for rural blindness in the young, before it hopelessly sets in, will reveal a vision to them of a man with the hoe inspired to use it intelligently and therefore with joy and pride that springs from all intelligent labor.

NURSERY STOCK JUMPS.

Because of the fact that there are many new vineyards being planted in Yuba county the demand for grape vines for planting this season there is greater than for many years, and the price has jumped from \$15 to \$18 and \$20 per thousand. Quite a number of tracts of land have been purchased with the view of planting and many who have grain land unimproved will plant at least a portion of the same. The demand is practically all for Thompson seedless vines. In the tree line the planting will be mostly to prunes and orders have made this stock rare.

RHUBARB

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WAGNER IMPROVED WINTER RHUBARB

Splendid results should be derived by Spring. Greatly reduced prices for Fall planting.

Also Berries, Small Fruit and Cactus.

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Rhubarb-Berry & Cactus Specialist
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Pedigreed Alfalfa Seed

For sale by grower. Grown in Cultivated Rows from choicest hay producing strain. No weeds of any kind.

Peruvian and Common Alfalfa Seed for sale also.

Green Gold Alfalfa Ranch,
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SET YOUR OWN PRICE

That's what every man does who owns Properly Irrigated, Ditched, Tile Drained or Terraced Land. And if you don't want to sell, your increased yearly profits are just like turning waste land into cash.

Progressive land owners in every State and practically every county in the Union have discovered that the only way to bring their land up to the desired state of production is to get a

Bostrom \$15 Farm Level

and make spare days the most profitable days. Also fills the bill for Grading, Road Building, Foundation Work, etc.

The Bostrom Farm Level has been on the market over thirty years, the latest improved having a Telescope with Magnifying Lenses which enable you to see the cross on the Target a quarter of a mile away. Man Size Tripod, Leveling Rod, Target, Plum-Bob and full instructions included. Weight, 15 pounds. It is used and endorsed by Agriculture Schools and U. S. Farm Demonstration Agents, and you will endorse it, too, after using it—if not Your Money Back, including express both ways. Write today for description of Level and Telescope, details of our Money Back Guarantee, and names of Jobbers in San Francisco, Sacramento and Los Angeles who carry it in stock.

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Is a splendid fertilizer for
ALFALFA, WHEAT, ORANGES, PRUNES, ETC.

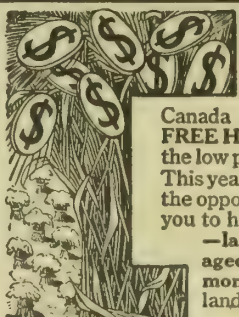
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Raise High Priced Wheat on Fertile Canadian Soil

Canada extends to you a hearty invitation to settle on her FREE Homestead lands of 160 acres each or secure some of the low priced lands in Manitoba, Saskatchewan and Alberta. This year wheat is higher but Canadian land just as cheap, so the opportunity is more attractive than ever. Canada wants you to help feed the world by tilling some of her fertile soil—land similar to that which during many years has averaged 20 to 45 bushels of wheat to the acre. Think of the money you can make with wheat around \$2 a bushel and land so easy to get. Wonderful yields also of Oats, Barley and Flax. Mixed farming in Western Canada is as profitable an industry as grain growing.

The Government this year is asking farmers to put increased acreage into grain. Military service is not compulsory in Canada but there is a great demand for farm labor to replace the many young men who have volunteered for service. The climate is healthful and agreeable, railway facilities excellent, good schools and churches convenient. Write for literature as to reduced railway rates to Supt. of Immigration, Ottawa, Can., or to

GILBERT ROCHE, Canadian Government Exhibit, San Diego, Cal.
Canadian Government Agent.



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The greatest care is exercised by us in selecting only the best buds that the best orchards produce, and we know how to care for these buds and to nurse them into plantings that do not fail to develop into satisfactory trees, trees.

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- Deciduous Fruit Trees
- Ornamental Trees
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**THE FRESNO
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FRESNO, CAL. P.O. BOX 615.

General Agricultural Review.

FIELD CROPS.

Butte Co's hop crop this season is estimated at 7,600 bales worth \$170,000.

Thos. P. Redmayne is the recently appointed Horticultural Commissioner of Marin county.

Market prices on Merced sweet potatoes are double last year's quotations and the harvest is large.

Practically no damage to the sweet potato crop of the Atwater-Livingston vicinity resulted from the recent frosts.

Bales of cotton compressed at the gin arrive at their destination in better condition than do other compressed bales.

A Chinese company has purchased several hundred acres of land near Pacheco, which it is said will be sown to potatoes and garlic.

Congress has appropriated money for experiments looking to the increase of production of sugar-beet seed in the United States.

San Joaquin Delta farmers have this year had bumper crops with liberal prices. The average yields have figured better than \$80 an acre gross.

Care should be taken to handle alfalfa hay so as not to lose leaves, as these contain considerably more than 50 per cent of the feeding value of the hay.

A party of Russians have secured a tract of land comprising 3,000 acres in the vicinity of Kerman. It is the intention of the new settlers to grow rice.

The formation of ice on the surface of fields is fatal to alfalfa. This condition is most apt to occur on fields that are level or that contain pockets.

The carlot shipments of white potatoes for California as reported by railroads to the United States Department of Agriculture, up to Nov. 7, 1916, was 3,659.

Pumpkins by the carload are being shipped from the vicinity of Bogue to the canneries of Sacramento. The growers receive \$3.50 per ton, which averages from \$40 to \$50 per acre.

The Libby, McNeill & Libby cannery of Selma, is canning pumpkin day and night at their plant there. They are running two 12-hour shifts. They have contracted 600 tons at \$3 per ton.

A cotton seed oil mill at Calipatria large enough to handle the output of a large part of the Imperial Valley is being planned by Balfour-Guthrie Co., who have been active in the development of the cotton industry in the northern part of the valley.

Reports from Santa Ana say that the bean crop of Orange county has been harvested and threshed. The yield was good. The output was 250,000 sacks of limas and they sold at \$5 per cwt., and 90,000 sacks of blackeyes, that sold at \$3.50 per cwt. The total crop is said to have realized \$1,700,000.

Agricultural and horticultural interests in the vicinity of Winters are getting behind the efforts of the State Commission of Horticulture to secure the passage of an effective law at the next session of the Legislature. The yellow star thistle and the pests of the rice fields are to be given special consideration.

If ginning practices which permit the mixing of seed from different loads of cotton are allowed to continue, and if the common custom of planting different varieties indiscriminately in the same locality is not restricted, it is only a question of time until all varieties, no matter how well selected, will descend to one mongrel type. Farmers of each community should determine by experiments the particular variety of cotton which is best suited

to their section and should agree to plant this variety only.

DECIDUOUS FRUITS.

Fruit shipments from Placerville, El Dorado Co., for this season total 200 cars.

A carload of "Extra Special" peaches, valued at \$7,000, was shipped recently from Selma.

Tulare Co. this season harvested 5,000 tons of dried fruits, the tonnage from 2,650 acres.

As the outcome of a meeting of the prune growers of Sutter Co. held recently they decided to join the prune and apricot association which has been organized at San Jose.

Leonard Hess, near Tudor, made some profits this season which would convince a Missourian. From 10 acres he delivered 58½ tons of dried prunes to the Rosenberg Bros.' packing house, netting him about \$450 per acre.

The Cal. Fruit Exchange has handled almost \$3,000,000 worth of fruit this year, has returned to its members about \$350,000 in railway claims, and distributed about \$500,000 dividends, according to Manager John Nagle.

Based on reports from all apple districts of the Northwest, the aggregate losses to the apple industry by the cold wave which prevailed all last week is \$1,500,000. The frost, it is said, has made unfit for ship-

ment approximately 1,750,000 boxes of apples in the four States of Oregon, Washington, Idaho, and Montana.

About 65 carloads of apples will have been shipped from Inyo county this season; about 22,000 boxes from the district around Bishop. They are mostly Winesaps, with many Grimes Golden. The new plantings of Inyo county are mostly Rome Beauties, Baldwins, Winesaps, and Jonathans, according to Horticultural Commissioner Nordyke.

Before the war quantities of dried apples from California were shipped each year to the Siberian market through Hamburg houses. It is thought it might now be possible to re-establish this trade direct. The Russians are very fond of fruit and the consumption of apples in the chief centers of Siberia is large. Most of the supply for this market comes from Turkestan; but as this fruit is not always of good quality the well-to-do Russians are willing to pay a higher price for apples and other fruits of a higher grade.

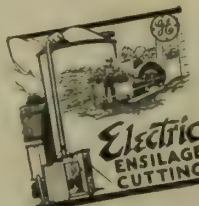
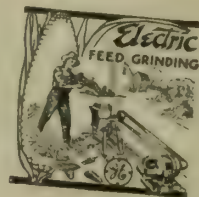
The fruit-growing and fruit-canning industries are in a very crude state in Argentina, according to an official trade report just received by the Rural Press. Quality is not standardized; moreover, there is no fixed price for fruit, and not even a fixed measure of quantity. Thirty to 45 pound baskets of peaches are sold for 25c to \$1.70 U. S. currency. There being no uniformity about the fruit as in the United States, it is picked just as it happens to come, and is sold without sorting or grading. In canning it is said to be impossible to put a certain number of fruit of a certain size in a can, as is done in the United States. They merely

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fill up the can with large and small fruit.

CITRUS, NUTS, SEMI-TROPICAL.

Reports from Glendora say that the orange crop in that district will be the biggest and best ever raised.

The first unit of the campus at the new Citrus Experiment Station and School of Tropical Agriculture at Riverside is progressing rapidly.

L. E. Stums of San Dimas has sold his five-acre orange grove near Lone Hill station for \$9,000. This is an old navel grove of twenty-five years.

The Monrovia navel oranges will ripen this year earlier than any season during the past fifteen years. Shipments will begin there about Nov. 25.

Citrus canker threatens the destruction of Florida's great orange and grape fruit groves. The State has appropriated \$750,000 toward its eradication.

The temperature on the ground during the cold snap last week varied from 22 to 24 degrees in the vicinity of Fresno. The official temperature was 30 degrees, however.

Payments on the first pool of walnuts made by the State California Walnut Association, of which the Goleta and Carpinteria organizations are members, is expected about Nov. 25.

Reports from various districts on the effects of the low temperatures that prevailed last week indicate that olives have suffered severely, while oranges have almost wholly escaped.

A heavy frost was had last week throughout the Pomona Valley, but it did no damage to the orange crop. Oranges are coming on nicely and coloring and the crop promises to be a big one.

The Central Lemon Association of So. Calif. shipped 135 cars of lemons during the season. A good price was averaged, the net returns to the grower being over two cents per pound.

Riverside reports one of the worst windstorms last week that it had experienced in years. Riverside

district estimates that 20 per cent of the orange crop was whipped off the trees.

The production of walnuts in California this year, expressed in percentages of a full average crop, is 82; of lemons, 94, according to the United States Department of Agriculture bulletin dated Nov. 8.

The Tulare County Horticultural Commissioner has established a testing office in Lindsay and has employed ten men in the work of testing oranges for shipment which under the new county ordinance must come up to the 8-to-1 test.

San Bernardino, it is said, will produce a normal crop of oranges the first time in four years—since the freeze. It is estimated that the production of the groves will be 16,000 carloads, which will be worth about \$15,000,000.

L. M. Banks, a fruit broker of Monrovia, says the coming crop of navel oranges will ripen this year earlier than at any time within the past fifteen years. Shipments are expected to commence from there the last of this month. The crop is said to be 20 per cent larger than last year.

What is said to be the highest price ever paid for Tulare county Valencias was obtained by the Lindsay-Merryman Exchange last week in New York. Fancy brought \$4.90 and choice \$4.40 per box. This price it is said netted the grower \$3.20 per box for orchard run.

At a late meeting of the Board of Supervisors of San Diego county, an ordinance was passed making it mandatory for shippers to observe the maturity of 8-to-1 acid test in all shipments of oranges. This action is in line with that of Tulare, Fresno and San Bernardino counties, writes H. M. Armitage.

MISCELLANEOUS.

A course in agriculture has just been instituted at the rural Union High School at Fair Oaks.

Railroad officials are hopeful that some way out of the car shortage difficulty in the Sacramento Valley will present itself.

J. S. Strauss, entomological artist of the U. S. Dept. of Agriculture, recently visited Imperial Valley to study its insect pests.

Farm Adviser C. M. Connor will begin a series of pruning demonstrations throughout Stanislaus Co. Dec. 4, continuing to Dec. 9.

The Southern Pacific Company has reported for the three months ended September 30, an increase in railway operating income of \$2,533,290. Gross earnings are running at the rate of \$175,000,000 for the year.

Modesto expects by March 1 to have an ice plant representing an investment of \$135,000, with capacity to supply the entire demand of the district in re-icing refrigerating cars for shipment of perishable products to Eastern markets.

The average yield in California for 1916 of all crops combined compared with average yields for recent years, is 101.7. The price index of all crops on Nov. 1 was 43.7 per cent higher than a year ago, and 40.2 higher than the average of the preceding five years.

R. W. Wood of Bend, Tehama Co., under date of Nov. 13, writes the Pacific Rural Press: "In your Nov. 11th issue you give credit to Delano-McFarland National Farm Loan Association as being the first to organize in the West. The Tehama N. F. L. A., located at Bend, Tehama Co., claims that distinction. We organized in July. Will you please have this settled?"

Sacramento has been selected as the seat of the new Federal Farm Loan Bank, to be established in this section by the Federal Government, under the act of Congress creating the Department of the National Service. The selection of the State capital was decided by its geographical position. It is a convenient point for the two great valleys of the Sacramento and the San Joaquin.

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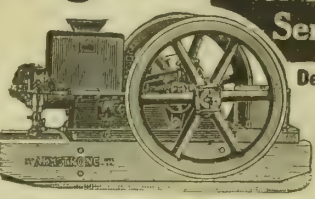
Home A3669.

Bdwy 7245. Repairs Carried in Los Angeles Stock.

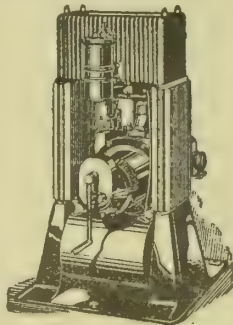
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Size	Special Prices on Plain Tread	Gray Tubes	Red Tubes
28x3	\$ 6.55	\$1.75	\$1.95
30x3	6.95	1.85	2.10
30x3½	8.95	2.10	2.35
31x3½	9.45	2.15	2.40
32x3½	9.95	2.25	2.45
34x3½	10.35	2.30	2.55
36x3½	12.05	2.40	2.75
30x4	13.20	2.50	3.10
31x4	13.85	2.55	3.20
32x4	14.05	2.55	3.30
33x4	14.70	3.10	3.40
34x4	14.95	3.15	3.50
35x4	15.05	3.20	3.60
36x4	15.85	3.30	3.75
34x4½	20.25	3.85	4.35
35x4½	20.85	3.95	4.55
36x4½	21.25	4.10	4.65
37x4½	21.90	4.15	4.75
35x5	23.65	4.70	5.20
36x5	23.95	4.90	5.35
38x5	24.90	4.95	5.45

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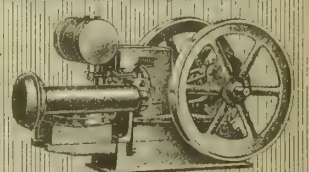
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Thirty-five years in this business in Stockton.—A 500-gallon tank, \$8.00. A tank 6 ft. x 2½ ft., \$7.50. Other tanks equally cheap. I deal direct with the consumer, saving 10% to 25%. All sizes in stock. Clear, dry redwood direct from the mill. Write for price today.

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Another Yuba owner writes:

"It keeps going under all conditions of weather and soil."

That's because it is thoroughly well built in every particular, and because the right materials are in it.

If you intend owning a tractor some time, permit the suggestion that you get the Yuba literature now.

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GOPHER TRAP

Larger than runway; jaws pull rodent in; catches large or small gopher and holds it. Farmers say it's worth dozen other makes. Big sales. Price 50c. If not at your dealer's will send it to you postpaid; 2 for 95c; 6 for \$2.70; 12 for \$5.10. Money back if you are not satisfied. Free circulars. E. J. Chubbuck Co., Dept. B San Francisco, Cal.

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Cut out the Middleman. Buy direct from the Grower. All varieties of cut flowers in season direct from the plants, sent by parcel post or express. Also floral work of all kinds. Try a sample order. 40 varieties of ferns in 4-inch pots now ready, 25c each.

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Mechanical Power on the Farm.

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of your experiences and troubles.

NAPA TRACTOR DEMONSTRATION.

[Written for Pacific Rural Press.]

"The woods was full of 'em." The ten-acre prune-apple-pear orchard in the edge of Napa Nov. 16 was full of tractors of many makes and sizes. It was crowded with people; and the roads on both sides of it were lined with automobiles and horse vehicles.

The orchard plowing was worthy the occasion. The machines must have startled the old trees, for such a motley herd of animals making similar noises had never before invaded those "woods" and their effect on the orchard's root systems could not be foretold. However, the label "Caterpillar" on one of them must have inspired terror in the hearts of the trees on that peaceful day; for if those accustomed insects had assumed such size and noise, the end must indeed be near.

Those trees could not know that the new sort of animals meant, not the end, but the beginning of better culture, work done quickly at the right season, plenty of time left for the pruning and spraying and close attention that would enable the trees to do better than the best of their days gone by.

There were eight or ten of the machines, including those made by the Holt Mfg. Co., the Bean Spray Pump Co., the Hendy Iron Works, the Yuba Construction Co., the C. L. Best Gas Tractor Co., the Samson Sieve-Grip Tractor Co., and R. Hamilton, an orchardist of Sonoma county.

The last named had a 1750-pound baby not yet on the market; but being tried out for the sake of public comment. It pulled two 10-inch bottoms.

Some plowed deep, others shallow, some with disks, others with moldboards, and ever the crowds followed the machines or talked among themselves about their workings. One tractor, built low down, turning sharp corners, pulled a gang plow of five disks.

So good an orchard tractor demonstration has probably never before occurred in California.

Field Demonstration.—But the orchard demonstration was not all. Close to the railroad station, a field of 25 acres was laid out in sections for the various machines. Here, some others took part, including the Mogul and Titan of the International Harvester Co. This demonstration was of plowing, and manipulation of the machines, affording opportunity for comparison and questions as at the orchard. Weight of machines, quick turning, power, and price were the subjects of most questions.

The industrial and machinery exhibit installed in the grove beside the field was very instructive. It included many displays of local manufactures, oils, a miniature of the local shoe factory, etc.

The General Chemical Co., the Cal. Spray Co., the Standard Chemical Co., the De Laval Dairy Supply Co.,

and the Bean Spray Pump Co. had a fine exhibit of sprays and spray-pumps. Farm implements, gas engines, separators and barn equipment, as well as grape juice, nursery stock, a weed collection (by the State Commission of Horticulture) parcels post, etc., filled the exhibit building and the grove around it.

GRAVITY DISTRIBUTION OF MANURE.

[Written for Pacific Rural Press.]

Proper and economical liquid manure disposal is a continual problem with the dairyman, and especially is this true where the product is being sold as whole milk to the city trade.

Frampton Bros. of Los Angeles county have probably been more successful in disposing of both liquid and solids from their dairy and at the same time preserving it for the fertilizing value of the land, than any other dairy the writer has had an opportunity of visiting.

This is accomplished, first, by having a well-drained concrete floor in the milking barn, with a fall of eight inches to 60 feet, so that all droppings are quickly and easily flushed into the concrete pipe drainage system that leads from the barn and milk room to the pumping plant some distance away.

At this point the drainage pipe dumps into the underground cement pipe irrigation system, through which all irrigation water is pumped for the alfalfa and other farm crops grown.

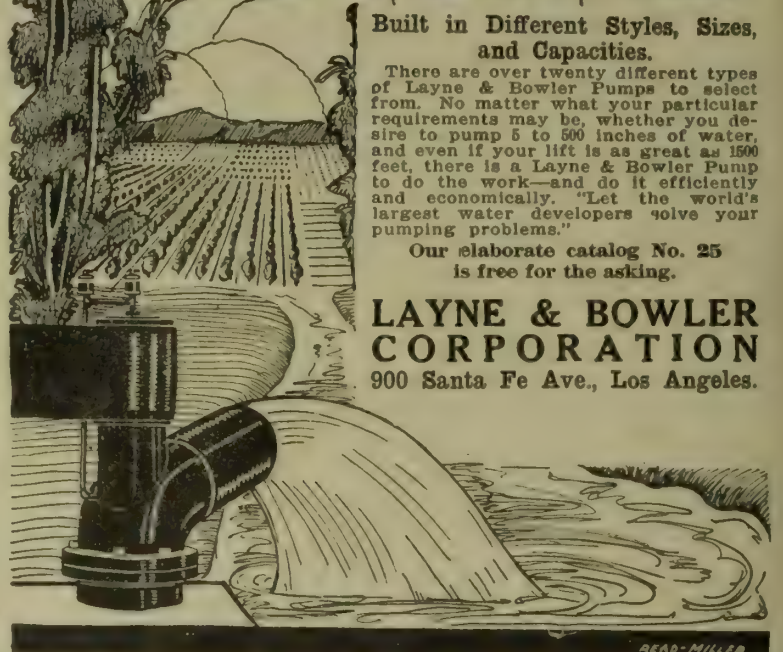
At the junction of the barn drain and the irrigation system proper is a valve which is opened when the pump is not in operation, thus allowing the liquids to run by gravity into any of the laterals desired. By this method the manure is all distributed in the irrigation water later, and may be spread over fields as much as a mile away from the barn without labor. While pumping, the valve connecting the drainage pipe and the main laterals is closed, otherwise the water would be pumped back to the barn in the drainage pipe.

KEEPS AN EXTRA TRACTOR.

[Written for Pacific Rural Press.]

Quick cultivation after each rain is imperative on the "red hog-wallow soil" in E. W. Killian's 240-acre orange orchard in Tulare county or it would bake. It would cost too much to keep enough horses the year around to do the big rush spring work quickly enough, so Mr. Killian has four tractors. These, with eight horses, are rushed onto the orchard as soon as suitable after each rain and the soil pulverized in double-quick time. The cover crop being grown winters, is hoped to improve the soil; but in spring there is a rush to get it worked into the soil with double cutaway disks, properly and at the right time. All the horses and tractors are used at this until the ground is worked down fine into perfect shape. In fall, all that is needed is to check zigzag

LAYNE & BOWLER PUMPS



Built in Different Styles, Sizes, and Capacities.

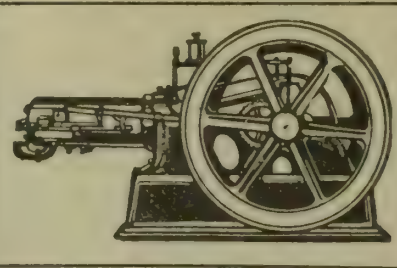
There are over twenty different types of Layne & Bowler Pumps to select from. No matter what your particular requirements may be, whether you desire to pump 5 to 500 inches of water, and even if your lift is as great as 1500 feet, there is a Layne & Bowler Pump to do the work—and do it efficiently and economically. "Let the world's largest water developers solve your pumping problems."

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the stronger will be your conviction that you could not find better pumping engine value if you hunted the world over. Commercial engines are bargains at any price, but our prices are so reasonable that you simply can't afford to do without one.

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ELECTRIC APPLIANCES include CHAFING DISHES, COFFEE PERCOLATORS, VACUUM CLEANERS, ELECTRIC IRONS and every other appliance that is needed in the modern home, not forgetting **ELECTRIC FANS.**

We carry these appliances in many of our branch offices, and will be glad to have you call and inspect them. Where we do not carry them we will be just as glad to give you our expert advice.

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That Must Make Good



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Send me samples of Belting that you will guarantee to give satisfactory service on my work and quote prices delivered at

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A pocket memo booklet giving speed and power tables will be sent free to all who mail this coupon.

REDWOOD TANKS SILOS

Water Troughs,
Windmills, Frames,
and Towers,
Steel and Wood.
Prices the lowest.
BROWN & DYSON
640 So. Center St.,
STOCKTON, CAL.

and sow the cover of melilotus and bur clover.

Drivers Do Not Repair Tractors.—The tractor drivers are not allowed to monkey with the machinery if anything goes wrong. They drive or haul the disabled tractor to its shed and when not all of them are in use, simply take out another with least loss of time. A mechanic, or Mr. Killian himself, does the repairing in the shed where the tools are handy. It is considered cheaper to pay interest on investment in an extra machine rather than allow inexperienced men to tinker with them.

TRACTORS OF THE FORD FAMILY

[Written for Pacific Rural Press.]

There are Fords and Fords, but you can't afford to buy a Ford tractor without investigation. Then you may find one of them that suits your needs; but remember that the Ford tractor you are looking for will not be on the market for two or three years at least according to Henry Ford himself.

Meanwhile other Ford tractors or attachments may interest those who are looking for lightweight machines. One shown at the Fresno District Fair and made in Minneapolis claims 8 drawbar horsepower, pulling three 14-inch plows. It is 6 feet wide, about 5 feet high, and has a wheel base about 5 feet long for short turns. Two drive wheels $4\frac{1}{2}$ feet in diameter hold the weight of the 2 cylinder engine and transmission. The steering wheel is behind, under the driver's seat.

The real Ford tractor was tried out at an Eastern demonstration this summer. It is a good bit like the Ford car, being built heavier but with similar engine, radiator, and transmission.

At the Puente demonstration, a tractor attachment for a Ford car was exhibited but not tried out in the general demonstrations except the last day, when its plowing was not good. This was laid to the fact that they did not have a 12-inch plow. They had a 16-inch mold-board, but did not get it deep enough to make much of a furrow in the hard adobe.

The attachment is simply a frame to hold two 30-inch tractor wheels 8 inches wide, just back of the rear axle of the car. A little pinion put onto each end of the rear axle in place of the auto wheels, runs the tractor wheels by a cogged gear inside the wheel rims. The attachment weighs 710 pounds, and can be put on in half an hour or less.

It is geared down $7\frac{1}{2}$ times, so that the car in plowing at $2\frac{1}{4}$ - $2\frac{1}{2}$ miles per hour, requires an engine speed of about 600 r.p.m., equaling a speed of 12 to 15 miles as an automobile. Tractor work is done entirely on high gear except in emergencies. At the private demonstration at Puente, it usually pulled a 15-tooth gooseneck cultivator 10 feet wide.

Colonel Harris Weinstock, State Market Director, and J. L. Nagle, manager of the California Fruit Exchange, resumed their debate over the merits of the State Fruit distributing bureau before the State Fruit Growers' Convention at Napa. Despite their arguments matters stand very much the same as before. Nagle and about fifty growers still stand "pat" and this blocks Weinstock's efforts.

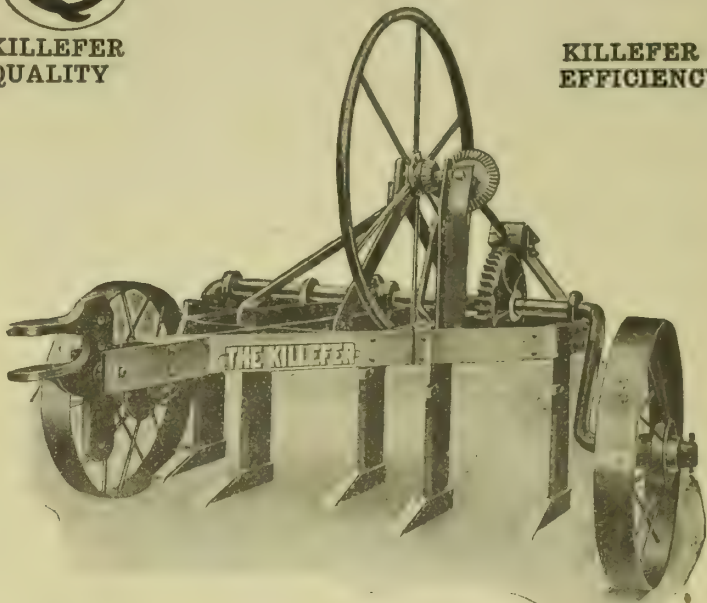
FIVE STANDARD



KILLEFER
QUALITY

SUB-SOIL PLOW

KILLEFER
EFFICIENCY



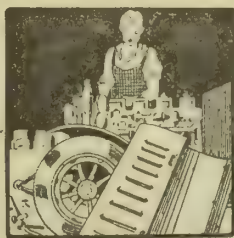
Reports from bean growers who used subsoil plows this past season show enormous gains over previous years. One large grower reports that, had he taken our offer of giving him a subsoil plow for one-half of the increase in his crop on about 600 acres, his plow would have cost him over \$1500.00. Subsoil work will pay on any kind of crops, and should be used in preparing land for orchard or alfalfa as returns will amply repay for the outlay.

The tractor is giving us the power needed to do deeper and better work, and it is up to you. Look over your land and see if your crop output can not be increased by better methods of cultivation.

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Learn the Automobile Business—

Skilled men wanted in the Automobile and Engineering lines—right now—in California. Why don't you get ready? Earn \$100 to \$300 per month—Practical courses, directed by practical experts, will qualify you for any of these positions—

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Better positions, better pay, independence are within your reach—Let Heald's help you—No vacations—enter at any time—Day and Night Classes—Mark and Mail this ad. Start now—

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Please send me full information
about the course checked above.

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Live Stock and Dairy Notes.

(Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.)

THE DAIRY.

Mottled butter is due largely to uneven distribution of salt.

Tulare creameries paid dairymen \$101,200 for October deliveries of cream.

It is impossible to make sweet, clean-flavored butter from old, unclean cream.

Garlic flavor can be eliminated by heating milk to 145 deg. F., and blowing air through it.

W. J. Higdon reports the sale of a young Guernsey bull to T. R. Bond of Tipton and one to the Visalia Fruit Co.

In the Truckee-Carson Co-operative Cow Testing Association begun November 1, 1916, 630 cows have been entered.

Clayton N. Slocum of the firm of H. B. Slocum & Son is figuring on another trip back East to buy purebred Duroc-Jerseys.

Contagious abortion is rapidly becoming one of the most costly of animal diseases. It is estimated that it costs the dairy industry \$20,000,000 a year in dead calves and dry cows.

The annual meeting of the National Dairy Union was held in connection with the annual convention of the National Creamery Butter-makers' Association in Minneapolis, Minn., Nov. 14, 15, and 16, 1916.

Whole milk testing 4 per cent butterfat brought \$1.71 per hundred-weight for the entire month of October to dairymen supplying the factory of the Carpenter Cheese Co. at Salida.

Ernest Otto McClure, the stockman, has located permanently at Santa Ana, having moved there from Modesto. He has taken with him his 53 head of registered Holstein-Friesian stock.

Prices paid Nov. 16 at Ferndale by the various creameries were as follows: Central Creamery Co., 38c; Grizzly Bluff, 38c; Capital, 38½c; Valley Flower, 38½c; Libby, McNeill & Libby, 38½c.

After testing his 17 cows through a cow-testing association, a Nebraska farmer sold 7 and received more profit from the 10 remaining animals than he had received formerly from the whole herd.

The first annual convention of the Dairy Manufacturers' Short Courses Alumni Association was held at Davis, Calif., Nov. 8th. It was well attended by former dairy manufacturer short course students.

Bull associations reduce the cost of the services of a purebred bull for the dairy herd. The average annual cost of service in a large number of associations investigated by the United States Department of Agriculture was \$3.48 for each member.

Refusal on the part of the creamery men of the State to sell even their surplus butter to the Russian Government has been directly responsible for keeping the price down to where it is at the present time, according to N. J. Beck, manager of the Visalia Co-operative Creamery.

Twenty cubes of butter and fifteen cheeses were entered at the fifth 1916 California Educational Butter and Cheese scoring contest. Glenn Decow of Perris received the highest score on butter with a score of 94. Arthur Schoenrock of Galt tied with Ray Weedmark of the University Farm for first on Cheddar cheese with a score of 95. C. P. Beffa of Gilroy received first on California (granular) cheese with a score of 94, and Chas. Basciarini of Kings City first on Jack cheese with a score of 93½. The average score on the butter was 91.7; on the cheese 91.96.

Cow-testing associations are be-

coming yearly more popular. They rout the old saying, "The poor ye have always with you." The first such association was started in Michigan in 1906. There are now 346 in the United States. The first one was started in Calif. in 1909. Up to July 1 of this year this State had 9 altogether. Its work is fatal to the unprofitable cow.

To improve the methods of producing and marketing whole milk in the territories tributary to the principal cities of America, the first national meeting of milk producers was called today for Tuesday, December 5. The meeting will be held under the auspices of the National Conference on Marketing and Farm Credits which holds its fourth annual meeting in Chicago December 4-9 at the Hotel Sherman. Delegates are expected from New England, New York, Iowa, Ohio, Minnesota, Wisconsin, California and Missouri.

The butter situation has become quite acute of late. It has been many a day since butter has sold as high as it is now. Production is running light and cold storage stocks are much lighter than a year ago. The government report shows that there were only 79,294,000 pounds of butter in 142 cold storage warehouses November 1, against 92,718,000 pounds the same date last year, a shortage of 13,424,000 pounds. A good deal of butter has been going abroad by the way of Canada which has excited the Eastern market, and the strength there in turn has been reflected here on the Coast.

BEEF CATTLE.

Hayes & Devaney have leased the famous Howard Cattle Company's range of 40,000 acres south of Newman. There are 7000 acres of farming land in the tract.

The United States Meat Inspection service certified to the wholesomeness of 11,220,958,000 pounds of meat from 61,826,304 animals during the last fiscal year. It condemned 738,361 parts of animals, equivalent to about 84,320,000 pounds of meat.

A call has been sent out by C. N. Hawkins and D. J. Stollery to Shorthorn breeders of the State for a meeting to be held at the Palace Hotel, San Francisco, Dec. 11th, for the purpose of organizing a co-operative association for the advancement of the breed. Every breeder of Shorthorns is invited to attend.

SWINE AND SWINEMEN.

Allen Thompson, Duroc Jersey breeder of Tulare, sold his herd to Defender Perfection to the Rockford Orange Co. of Lindsay.

Work has been inaugurated on a hog-packing plant at Hanford. The plant is being erected by W. C. Gallagher on his ranch, a mile east of the town. It is expected to be in operation in about three months.

Alex. D. McCarty has just sold to the University of Nevada a boar from the spring litter of Oak Grove Pearl 4th, Grand Champion sow at the P. P. I. E.; three gilts and two boars to Hills Bros., Newman; and bred gilts to H. H. Hart, Denair; and Lloyd & Tointen, Santa Rosa.

The coming annual meeting of the California Swine Breeders' Association in Los Angeles in January is being looked forward to with much interest by the packers and livestock men here. Mr. Frank M. Hauser, chairman of the entertainment committee, says everything is progressing favorably with him and a successful meeting is being looked forward to.

Co-operative marketing of hogs under the auspices of the Stanislaus County Farmers' Union has proved so successful that this method will

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

SWINE.

Poland Chinas.

SMITH'S POLAND-CHINAS—Sows and gilts bred to Joker, First Prize Boar at the Wisconsin State Fair, 1915. These sows and gilts, sired by Iowa Wonder, who is a son of A. Wonder, the most celebrated Poland-China boar, living or dead. Litters from this mating are the best I have ever seen anywhere. Prices low quality considered. Will sell one or a carload. As a special inducement each purchaser will be given a year's subscription to the American Swineherd, the best swine paper published and a copy of the Handbook on the Sow; also a copy of the Pig Feeders' Manual. Geo. A. Smith, Corcoran, Cal.

MAKE BIG MONEY with our big-type Poland-Chinas. Smooth, easy feeders that make greatest weight in shortest time at lowest cost, topping the market at 225 lbs. in 6 months. 300 head, both sexes, all ages, reasonable prices. Some fine bred sows and gilts, and top quality young boars. Best Eastern blood lines. Satisfaction guaranteed. Ranch in Tulare county, but address owner, E. H. Whitten, Route 5, Box 647, Los Angeles.

GRAND CHAMPION SUPERBA POLANDS—A few choice spring Superba boars ready for service. Sows bred to Superba for fall litters. Prices reasonably low. Rough's Greenfields, Arlington Station, Riverside, Cal.

REGISTERED POLAND-CHINA BOARS of serviceable age. A Wonder and Chief Picture breeding. Every animal guaranteed. Price \$25. Big N. Ranch, E. A. Noyes & Son, Props., Sutter, Cal.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated, purchaser to return crates. E. A. Hall, Watsonville, Cal.

REGISTERED POLAND-CHINAS—Prolific, pabulous, profitable porkers. Choice boars now ready for service, \$25 each. Weanlings \$15. Dr. J. A. Crawshaw, Hanford, Cal.

LAKEVIEW STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hank Alton Humboldt Co., Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Linn, Lincoln, Route 4, Modesto, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trewhitt, Box 82A, Hanford, Cal.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State \$20 on. M. Bassett, Hanford, Cal.

POLAND CHINA HOGS FOR SALE—Registration papers furnished free. C. A. Cordes, Durham, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 27A, Davis, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for Fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

ONE OR A CARLOAD—Foundation herds of any size. Select them from our large herd at any time. They are all grown from pig-hood to maturity under the natural conditions of woodland and pasture range, with shade, pure water, and everything to make a hog clean, healthy, and strong. Visit us or write to Butte City Ranch, Home of Good Berkshires, Box P Butte City, Cal.

RANCHO RUBIUS DUROCS—About closed out. A few extra good rows, choice July gilts and weanling pigs, both sexes. Your last chance for high-class stock at common prices. Remember breeding stock will be scarce next year. Elmer Lamb, Ceres, Cal.

REGISTERED BERKSHIRES—Prosperity of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

WINONA BERKSHIRES—The get of Laurel Champion have won to date, at State fairs, 147 prizes, 65 firsts, 22 championships, 11 grand championships. Winona Ranch, R. 1, A-Box 105, Grants Pass, Ore.

BARGAINS IN BERKSHIRES—Write today for our Special List of high-class boars and open gilts. Both the offerings and prices will please you. Silver Birch Farms, Box P. P., Newnort, Wash.

CHOICE REGISTERED BERKSHIRES—Exceptionally fine pigs, \$15 each. Unrelated trios, \$40. Boars, sows, and gilts at reasonable prices. W. H. Waugh, Riverside, Cal.

REGISTERED BERKSHIRES—Weanling pigs, \$10 each. G. A. Casey, R. 7, San Jose.

SPECIAL—Six good service boars and a few sows in pig to Premier Leader due to farrow in October. Geo. M. York & Son, Berkshire breeders, Modesto, Cal.

REGISTERED BERKSHIRES—For sale, bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

REGISTERED BERKSHIRES of prize-winning blood. Write for description and photos. Imperial Stock Farm, Morgan Hill, Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Ferris, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

BERKSHIRES—Carruthers Farms, Mayfield, Cal. Second annual sale, August 1, 1917.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

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CHAS. GOODMAN—Breeder of high-class Berkshire Swine. Williams, Cal.

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DUROC JERSEYS—My hogs won highest honors at State Fair, taking first prize herd, first prize sow, second prize boar. Were the largest of their age exhibited. Stock all sows for sale. Prices reasonable. Breeding and satisfaction guaranteed. Haden Smith, Route 1, Box 84D, Woodland.

DUROCS from River Bend Farm, St. Helena, Cal., are large type, smooth, rangy with fine backs and deep cherry color. We sell only those we'd like to keep in our herd. Don't write us if you want cheap stock.

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DUROC JERSEYS—Herd boars. E. M. Colon and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

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REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs \$10. E. E. Bondar & Son, Napa.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

DUROCS—Defender Cantic B and Golden Model strain. The big type. Allen Thompson, Tulare.

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REGISTERED DUROC JERSEY SWINE—Frederick M. Johnson, Napa, Cal.

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LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

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LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

REGISTERED IMPROVED CHESTER Whites—Grizzly Bear Ranch, East Auburn, Cal.

DAIRY CATTLE.

Holsteins.

REGISTERED HOLSTEINS—Herd sire King Korndyke Hengerveld Ormsby 7th, 86623. His full sister, as Junior 3-year-old, made 32.04 lbs. butter in 7 days. The record of his sire's dam averaged 30.98. George Koumias, Modesto, Cal.

REGISTERED HOLSTEIN BULL CALVES—Sired by Lorena Korndyke Alcantara, whose dam made 29.75 pounds butter fat in seven days as a four-year-old. J. M. Campbell, Escalon, Cal.

FOR SALE—Purebred Holstein Bull—"E. Sur Captain"—under 3. Three-quarters black. Healthy. Good-tempered. Sure stock-getter. Price \$150. H. P. Rosenberg, Box 540, Mill Valley.

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REGISTERED BULLS by King Korndyke (Pontiac and out of A. B. O. cows. A splendid selection old enough for service. Write or call. J. H. Harlan, Woodland, Cal.

TULARE GUERNSEY AND HOLSTEIN Farm is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

A NICE YOUNG SON from El Prado Wayne Colantha and from a 24.26 lb. dam. J. W. Benoit, Breeder of Registered Holsteins, Route C, Modesto, Cal.

Livestock Facts and Fancies---IX.

(By the Editor.)

Last week we exhorted the California Swine Breeders' Association, as the California stock organization which has largest membership and most "pep" in it, to get busy to find out what is the matter with California stock-selling and show growers how to improve it. They can make a brisk start in this direction at their Los Angeles meeting in January next. We invite the officers of this association to tell the public, through our columns, what they will be doing about it, so that the Los Angeles meeting may be really a California livestock convention under the leadership of the wide-awake swine men. If a start is made at Los Angeles it would be easy to arrange for a few monthly meetings at other points convenient to other parts of the State and the whole movement would be under way, and out of it would grow such a forceful, popular association of all California stock growers as the present conditions and outlook demand.

We are not piping up now for any kind of a control organization or any scheme to invite growers to take stock in an organization to do their own slaughtering, packing, marketing, etc. We do not know that that would be a good thing to do and, worse still, nobody knows. On the other hand, in view of the popular lack of knowledge about conditions of all kinds, we have an idea that it would be a very bad thing to do, because general ignorance is not a good force to make things go right. It is a great mistake to think that all that is needed to settle marketing problems is to project a capitalized corporation. People must be wise and willing first, and they can be neither wise nor willing until it is demonstrated what the matter now is with local and central selling methods and how fairly, or otherwise, the present great slaughtering and packing interests are being conducted. Therefore the first thing to do is to get all interests together. All interests, growing, transporting and packing, have troubles and they are free enough to talk about them when their representatives are brought together in an open assembly. After discussion every interest is wiser and freer to work for improvements. Discussing is the best cure for "cussing"—which never gets anywhere. Therefore we are advising no "control organization" which closes out most that a grower needs to know and calls upon him to take risks which really may be foolish. If "control" is needed or if growers' co-operative packing is essential to fairness as between producer and consumer—that idea will grow later if there is really anything for it to grow upon.

But of course organizations of growers are necessary: organization is the only way to understanding and to enforce anything which understanding shows it necessary to do. Investigation is necessary also, because association of ignorance may yield temporary force, but it is force without wisdom. Organization is the way to get investigation. As suggested last week, the way for

California growers to get investigation of their local marketing methods and conditions is to ask for it as a representative organization of those most interested. The United States Department of Agriculture is now making an investigation, as suggested last week, into the methods of marketing meat animals in different sections of the United States in the form of a survey of the livestock marketing conditions of the country. The data obtained have been published as Part V. of a report of an exhaustive study of the meat situation in the United States. Readers should apply to their congressmen for copies of this publication and study it carefully. This will form the background for such local investigation as needs to be made here to determine why California wholesale stock prices are relatively lower than elsewhere—as was shown in the case of hogs on the first page of this journal for November 11. If we are energetic enough to get a government investigation of all the causes underlying such a condition we shall begin to know something about it and probably what to do about it, also.

It is pretty clear that we need a popular California livestock association such as we have exhorted the Swine Breeders to bring forth in January next. For handling local problems in stock growing neighborhoods we also need local associations. The report of the Department of Agriculture, which we have indicated above, shows that co-operative associations of cattle raisers are becoming an important factor in marketing. Seven hundred and fifty organizations which market cattle in a co-operative way now exist in 15 States. Four hundred and thirty of these organizations are primarily livestock shipping associations. The greatest activity of this sort is found in Minnesota, where 215 co-operative livestock shipping associations are located. The Department declares that these associations bring greater returns to the farmers because of the reduction of marketing expenses and the realization of the prevailing prices at the centralized markets, and that they are also valuable because of their educational features.

This seems to be a clear suggestion of what we need first in every stock-growing neighborhood. Everyone who joins such an association will probably be surprised not more by what he can do than by finding out other things which need to be done to give him proper rewards for his capital and labor.

N. J. Higdon, Guernsey and Holstein breeder of Tulare, has put up two 100-ton silos this year. He has one entirely filled and the other about half filled with field corn. He has just completed a big tank house. The tank has a capacity of 5,000 gallons. A direct-connected motor-driven pump is so arranged that when the water level is lowered it starts to pumping, and when filled it automatically shuts off. The motor is so arranged that in case of fire or other emergency the pump can be run and a pressure of 50 lbs. secured.

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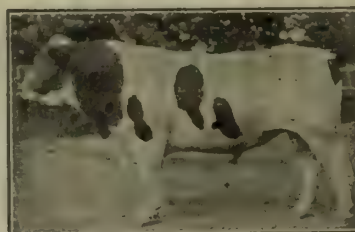
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Shorthorns Under Ideal Environment.

[Written for Pacific Rural Press.]

With 700 acres of rich bottom land suitable for cultivation, nestled against a 300-acre hill range profuse in its yield of natural grasses and watered the year around by running streams, the Barco Ranch in San Benito county presents an ideal situation for the raising of purebred beef cattle.

As a purebred breeding establishment, the history of this ranch dates back to the spring of the present year when the new owners, Mrs. Barton and Mr. Colomb, took possession. Purchased as a home for registered Shorthorn cattle, development work on the ranch has naturally been along lines most likely to be advantageous in the care and feeding of the herd.

A 200-ton silo was erected and filled with Indian corn grown last summer in one of the young orchards which the ranch supports. This with alfalfa hay, which was purchased this year, but which will later be grown on a portion of the bottom land, will supplement the hill grasses, the belief being that the combination will develop all of the desirable characteristics that a Shorthorn should possess, both for the purebred breeders and range cattle growers' requirements.

But in establishing their present herd the owners of this ranch have had in mind a highly commendable object. It is their belief that California is only in its infancy as a purebred breeding State and that one reason for this is the difficulty prospective breeders experience in securing choice bred females for foundation purposes. Accordingly,

they used more than ordinary precaution in selecting their cattle, choosing their 65 heifers from three herds.

One large bunch of these came from the E. M. Hall herd at Carthage, Mo., being the pick of that herd before the dispersion sale after Mr. Hall's death. All of these heifers were in calf when purchased to the bulls' Village Flash, Master of Orange and Wallhurst Goods. As herd sires the young bulls Hallwood Flash, a roan calf by Village Flash and Hallwood Villager, a white calf also by Village Flash, were purchased. These as well as the young bull Texas Sultan, sired by Sultan and purchased from the Coleman-Fulton Pasture Co., Gregory Tex., are of straight Scotch breeding, as are also many of the females.

Another lot of heifers were purchased from H. C. Johns, all bred to Choice Sultan, a grandsire of the now famous bull Whitehall Sultan. The third lot of heifers were purchased from the Coleman-Fulton Pasture Co., being bred to Sultan Skylight and Roan Hero, both high-priced herd sires used in that company's herd of registered cattle.

From the standpoint of fashionable breeding and good individuality of foundation animals, Mrs. Barton and Mr. Colomb have creditably stocked a good cattle breeding ranch, thus giving to the State a broader opportunity of securing good beef cattle, a factor which is important in the development of our livestock industry and one which presents unusual opportunities for profitable participation at this time.

The Value of a Prolific Boar.

[Written for Pacific Rural Press.]

Although there is a general tendency among swine raisers to select prolific brood sows for breeding purposes, it is just as important that they should keep boars with the ability to transmit prolificacy. Also that the brood sow be fed generously enough to supply her own body

needs as well as the unborn pig.

Both of these points are well illustrated in the experience of Donald Graham, who is establishing an extensive hog establishment in Antelope Valley, Los Angeles county, working into purebreds since the following facts were established:

The foundation sows on this ranch were secured in Shasta county, where they had been run on the open range most of the year. All of them were in pig when received by Mr. Graham.

Records show that the first litters from these sows averaged a trifle better than five pigs per sow, of which a little over four were raised.

After weaning their pigs they were again bred, this time to a purebred Duroc boar. At the next farrowing time the average litter was eight and three-fifths pigs and the average number raised was seven, and two-fifths pigs per sow.

The difference in number of pigs grown per sow for the two groups of litters was almost three and half pigs per litter in favor of the purebred boar.

The high school boys in Imperial Valley between the ages of 13 and 18 are to be urged to enter the pig-feeding contest to begin Dec. 9. The feeding period has been cut from 120 to 104 days. The clubs formed will be open to students in high schools and to others. Prizes will be on a basis of profits and gains.



Half a Cow—

Half a cow means half a profit—really a loss, because a poor producer costs as much to keep as a good milker. If you have a cow that is below par, chances are some vital organ is impaired and she needs treatment.

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These heifers are the property of the La Hacienda Ranch. For the sake of convenience they will be sold at the Geo. A. Smith Home Ranch, 2 miles south of Corcoran.

TERMS: A credit of 12 months will be given with approved security. Notes to bear 8 per cent interest. Five per cent discount for cash.

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SILVER BIRCH FARMS,

Box E, P., Newport, Wash.

Beef on Range and Alfalfa Ranch.

[Written for Pacific Rural Press.]

While it is the contention of some that the rich level lowlands of California are too valuable to make beef cattle raising a popular occupation there is good reason for the belief that such lands when tributary to good range lands will furnish the nucleus for many a fine herd of beef cattle in the future.

It is such a combination of conditions that made the feasibility of purebred Hereford breeding a certainty in the minds of E. A. Noyes and Son, on their properties known as the "Bar Ranches" in Sutter county.

Two very distinct kinds of land are found on these ranches; one a range of 1400 acres in the mountains known as the "Buttes," where alfalfa and bur clover pastures are abundant during the winter and spring months, and the other, rich lowland on which alfalfa, corn, and cereals yield heavily. It is on this latter ranch of 320 acres that Messrs. Noyes are for the present maintaining their herds of purebred Hereford cattle and Poland China swine, using the mountain land as winter range for a band of high grade beef cattle which are summered on 320 acres of overflow land that has been leased for a term of years and which is adjacent to their own valley ranch. Later the grades will be replaced by purebred Herefords, the theory being that the mountain land will produce sound, heavy bone and constitution; and that the lower land with its rich, succulent feed will be conducive to early maturing qualities.

While it is premature to write much about the Herefords on this ranch because of the newness of the venture, it is an interesting fact that the cost of maintenance is small, feed being about the only requirement, and this secured by the cattle in the stubble fields and on the 30 acres of alfalfa. The alfalfa could be cut twice and still produce a crop of seed without irrigation if it were not pastured.

At present the purebred herd is not large, Messrs. Noyes preferring to be conservative at the outset. But they are now determined to add to their eastern importations of last spring with the hope of eventually having 500 registered cattle on their two ranches.



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With hogs it has been different, for by purchasing eight registered Poland China sows from Bassett and Young, together with an outstanding boar from Bernstein, it has been comparatively easy for them to increase the size of their herd in a short time.

With hogs as with Herefords the intention has been to breed and raise heavy and sound-boned animals, able to carry almost any amount of fat that may be added in the fattening pens in later life, and with early maturing qualities.

To secure such stock good judgment in selecting animals with good bone, backs, and hams was used and to further strengthen these characteristics a sensible feeding system has been inaugurated.

Instead of confining their breeding stock in small dry pens they have had the run of alfalfa and barley stubble pasture, when the latter is available. At other times the alfalfa pasture is supplemented with barley, either soaked or dry, and at times some corn. They have not secured as good weights as they would have with more intensive methods; but they have bone, frame, and constitution which are desirable for breeding animals. That fat cannot only be added but easily maintained on such an animal is a well known theory and one thoroughly proved on this ranch with animals which have been confined to close quarters.

With the growth of the Poland China herd on the home ranch, another herd is being founded at the mountain ranch; and by this process all of the hogs sold for butchering purposes from the range land will some day be of pure breeding.

With more cattle and hogs on the headquarters ranch will come the need for more alfalfa, and this will be planted at an early date as well as a considerable acreage of white clover, if the latter proves as successful as a small patch this year indicates.

GROUND FEED FOR HOGS.

To the Editor: I have put in an alfalfa and grain grinder on my ranch in San Benito county to grind hay and barley for hogs. What proportion of each will give best results with growing hogs along with pumpkins?—A. B. T., Gilroy.

[Answered by Prof. J. I. Thompson, University Farm, Davis.]

The proportion of alfalfa meal to barley for hogs will depend considerably on the size and age of the animals to be fed. It would seem advisable to feed the pumpkins probably in the middle of the day, and feed as many as the hogs will clean up readily.

For growing pigs for market it does not seem advisable to feed more than 1 lb. of alfalfa meal to 6 of barley up to 100 lbs. weight. It is only when the price of barley is real high and alfalfa meal moderate in price that the amount of meal should be increased in proportion to the amount of barley when hogs are heavier than 100 lbs. If the price of grain continues high you might feed 1 lb. of meal to 5 of barley to take the pigs from 100 to 200 lbs.

Brood sows can be fed more meal in proportion to the grain; perhaps at times $\frac{1}{4}$ meal and $\frac{3}{4}$ barley.

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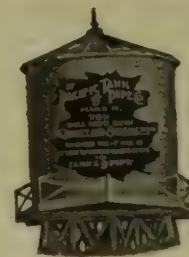
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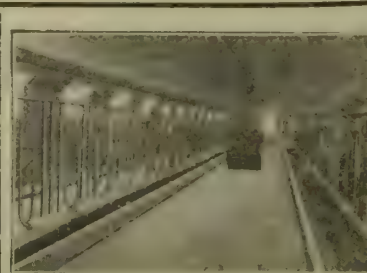
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R. F. D. 1,
REDWOOD CITY, CALIF.

Swine Raising on a Coast Dairy.

[Written for Pacific Rural Press.]

Horse beans, in the opinion of J. H. Russell of Cambria, San Luis Obispo county, are one of the most valuable hog feeds that can be grown in districts adjacent to the coast, not only as a growing but as a fattening food as well.

Mr. Russell has grown this variety of beans for his hogs for several years, having three acres in the past season. Early planting is desirable with him because of the heavy rains which make it impossible to get the soil into good condition later. December is the usual month for planting, frost not being a factor.

This year the beans were ready to start feeding about June 15, at which time grade Poland China shoats were fed a ration composed entirely of beans and skim milk, the former being hauled into the pens, vines and all, so that the pigs would

do their own harvesting. These pigs were sold locally weighing 125 pounds and then feeding was commenced with 45 head of weaned pigs which were to be carried on the beans till the supply was exhausted about September 1.

Mr. Russell is favorably situated for the raising of hogs in connection with his dairy inasmuch as he grows good alfalfa on rich bench land adjacent to a mountain stream from which he secures his water supply.

With this advantage over most farmers in the county he is able to carry his hogs through the summer months at a continuous growing rate, the alfalfa being supplemented with

skim milk and barley at all times of the year except when the hill pastures are green and the horse beans available.

As hot weather is not a factor the pigs can be farrowed at most any season, but January and July are the usual times as the pigs farrowed at the earlier date are able to take full advantage of the enlarged milk flow and spring pasture, for while year-round dairying is possible through the aid of the alfalfa in the summer months, advantage is taken of the heavy spring pasture by having most of the cows freshen at that time.

GRAIN FOR HOGS.

To the Editor: Please give me a good grain ration to feed with cooked

potatoes to fatten pigs.—J. Walter Foster, Petaluma.

[Answered by Prof. J. I. Thompson, University Farm, Davis.]

It takes 4 to 4½ lbs. of potatoes to equal a pound of barley in feeding value; so it should be first determined whether the potatoes are as cheap as barley at present prices. Or if milo maize can be secured it may show a feeding value fully equal to that of barley and perhaps as high as 10 per cent more. About 2 lbs. of grain per 4 to 4½ lbs. of potatoes should be fed; and the ration would be more valuable if whole alfalfa hay were fed in a rack. If alfalfa hay is not available, tankage should be used in a self-feeder. It is more economical to let the pigs waste the coarse stems of the alfalfa than to eat them.

PERUVIAN ALFALFA.

To the Editor: Replying to your inquiry, we have not as yet had many reports concerning the actual superiority of Peruvian alfalfa over the common Chilean variety ordinarily grown. Large areas of Peruvian alfalfa do not show the vivid green color so characteristic of the common variety, but have a grayish white appearance. This is due in part to the pubescence, or hairiness, which covers the plant, and to the broad veins that give the leaves a silvery gray look. The leaflets are long with wedge-shaped basis. Many plants are found which have four or five, and even six leaflets per leaf. The flowers are longer than in other varieties, and are a plum purple instead of a violet. The stems are taller and less branched and have fewer stalks arising from each crown. It grows more rapidly than the common alfalfa, and recovers more quickly from a cutting, which often means an additional cutting per season. On account of the fewer branches, however, this does not always mean that four cuttings of Peruvian alfalfa would be more in weight than the three cuttings of the common variety. In a mild climate it has a longer growing season on account of the temperature at which plant growth ceases. In Peruvian alfalfa this is 48 degrees F., against 57 degrees F. for the common alfalfa. In other words Peruvian alfalfa under such conditions of temperature will continue to grow while other varieties may go into a dormant condition. This is a disadvantage in a cold climate, as all plants are more readily killed by severe cold, unless they have prepared themselves for the cold by going into a dormant condition. Tender growing tissues are killed with real cold weather. This information is secured partly from a bulletin of the Bureau of Plant Industry from the United States Department of Agriculture, together with one-quarter acre plot which we have grown at the Experiment Station, Davis. We have received verbal reports from Fresno south to Los Angeles and San Diego where it has been grown in a small way, and they seem to be well pleased with it.

University of Cal. P. B. Kennedy.

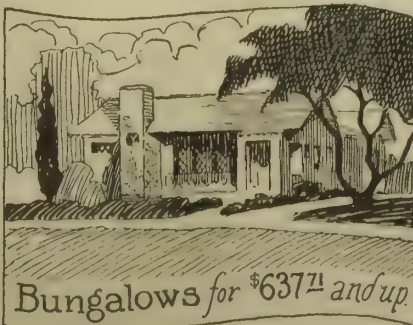
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Raising Poultry for Profit

CHICKENS, PRUNES, AND BEES.

[Written for Pacific Rural Press by Susan Swainsgood, Pomona.]

This paper is written by request, and as this is the time when the farmer thinks about what he is going to do next year it may help more than the one subscriber who made the request.

You can substitute any fruit trees for the prunes I am talking about, so far as I know, though I do know prunes require very good land to make them fill up with sugar.

In 1895 my husband planted two rows of young prune trees, where had been two rows of Bartlett pears. When these prunes commenced to bear, the prunes were very little larger than grapes; and as most people know, young prune trees generally bear good-sized fruit. I got an expert to prune them, as my husband was not living then, and also to prune the whole orchard. For about three years we had very small prunes on all the trees; yet every winter there was a good cover crop of alfalfa, bur clover, and other greens.

About that time I was going heavily into chickens to see if I could not pay off the mortgage I had been paying interest on for several years, and I noticed that wherever I had spread the droppings from the hen-houses the trees took on a dark green color to the foliage that was different from the other trees. Also my boy about that time got interested in bees; and the next year we put the hen droppings and bees where these young trees were that bore such remarkably small prunes. That year the prunes were the largest and best, and we had the largest crop on those trees of any part of the orchard. The next year we experimented more. My boy was as much interested as myself; and the facts were more than confirmed, for wherever the bees worked on trees in blossom time the fruit stuck, and where the trees were not near enough for the bees to work, a great many blossoms failed to get fertilized and fell off, either in the first stages or later. And where the ground was not enriched with hen droppings the prunes were lacking both in size and sugar, consequently in weight. At times I had as high as a thousand chickens; and my boy had quite a number of hives of bees; but there was a something about bees and me that did not agree; we did not mix well, and it got to be a question as to who or which had to be run off those premises. I have been blinded in both eyes for a week at once; yet I never fought back, and I will say that bees are the only antagonists I ever met in what is called a "Christian spirit." All my life I have tried to hit back when a brick was thrown at me, but I always gave in to the bees, maybe because they were so small—maybe? Anyway, since the bees and chickens left that orchard, it has never produced the old-time crops for which it was noted in the late nineties, and up to six years ago.

I will be willing to gamble that

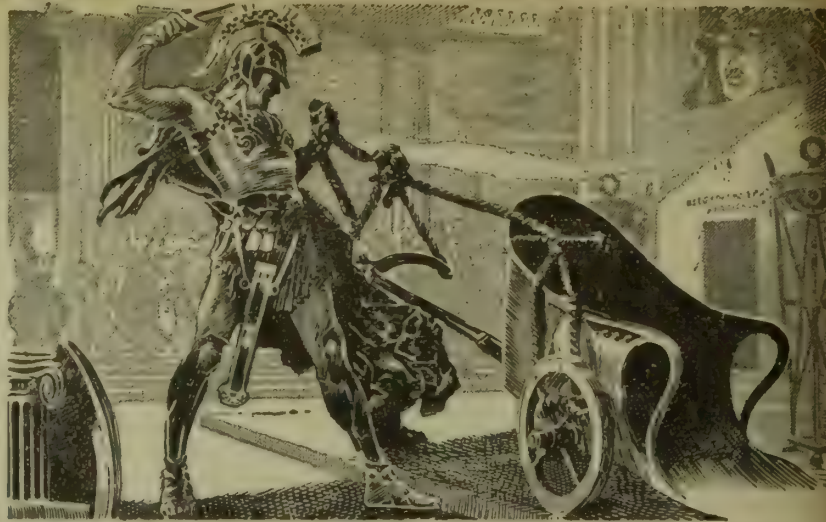
if two or three good colony houses full of chickens are set between the rows of trees in any orchard and two or three hives of bees located near in the spring time to fertilize the fruit blossoms, an orchard that is run down can be brought up to a 100 efficiency in one year. The bees fertilize the blossoms and the chickens fertilize the ground, and put back the elements that the fruit takes from it. But if there happens to be a member in the family that the bees get after, it is not safe to keep them near buildings. My chickens called me all over the ten acres and the bees made my work a danger instead of a pleasure.

PRACTICAL POULTRY POINTERS.

To the Editor: We had several cases of chicken pox among our Golden Antlers when we first bought this place. As we were feeding sprouted oats, we dusted the sprouting boxes (lug boxes) well with sulphur to prevent the oats from getting musty, and the sick hens got well. At that time we were not aware that the sulphur had anything to do with it, but we now believe it did. We have never had another case of it since. We always use sulphur to keep our sprouting boxes sweet after washing them out. We have noticed that lice could not be found on the fowls as long as we used sulphur, but did not connect their disappearance with the sulphur until the chicken fleas fled also. Now we cannot find a louse, a mite, or a flea, in any of our poultry houses. As an extra precaution against mites we give the perches a heavy coating of crude oil once every two years.

Sand Under Perches.—Under the perches we put 6 or 8 inches of dry sand, kept in place by a 12-inch board on edge. The fowls use the sand as a dusting place. The droppings are easily raked off the dry sand every week. As the fowls keep the sand stirred up, the droppings soon dry up, therefore the flies will not breed in them. Before adopting this plan of using sand under the perches some of them were troubled with diarrhoea. When we found the moist droppings alive with maggots in the hot weather and the fowls picking them out from between the cracks in the boards, we tore the whole lot down, and now use a dry earth floor, covered with 6 inches of river sand, and have no more diarrhoea. Rats and mice are banished with sweetened bread and strychnine.

Green Feed.—The poultry yards (2 acres) are planted to fruit trees, with kale of the broad-leaved variety between the trees on one-half, over which the fowls range at will. On the other half we plant beets in alternate years, so they always have fresh, clean ground each year. The manure from the houses is hauled onto the beet crop and cultivated under. This makes a heavy crop of beets one year and an equally heavy crop of kale the following year. By scattering grain in the kale they keep up a dust mulch and eat every particle of green stuff as it appears



Doing "the Impossible"

The Gordian knot is the ages-old symbol of the seemingly impossible. Alexander the Great gave it a place in legendary history when, unable to untie it, he cut it in twain with his sword.

This famous incident of antiquity has its modern counterpart in the real work of the men whose vision and unrestricted initiative brought forth the great Bell System.

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Man's words have been given wings and carried wherever his will directs. Electrical handicaps have been overcome one by one.

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This record of the Bell System for past achievements is an earnest of future accomplishment. New problems are being met with the same indomitable spirit, which guarantees a more comprehensive as well as a more perfect service.



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above the ground, besides helping themselves to all the kale they need. This is quite a large saving of labor.
San Jose. Sam'l Haigh.

QUESTIONS ANSWERED.

Chickens' Legs Weak, Necks Extended.—My chickens 6 months old, White Leghorns, have weak legs, necks extended nearly to the ground, eyes very dull, and they are droopy but still eat. I feed mixed scratch feed mornings, mash at noon and wheat at night; they have free range. —Subscriber.

Your chickens are finding something on the range that is poisoning them—dear gophers, squirrels, mice or some kind of dead animal food. The symptoms are those of "limber-neck," and undoubtedly the chickens are eating maggots. As long as you turn them out, your chances for curing them are small, but if you could shut them up a day or two and give the place an overhauling while you treat the chickens, it can be done. Put equal parts oil of turpentine (not spirits) with olive oil, add as much sweet milk as both, and make all into pills with good ground ginger and white flour to hold them together. Give the pullets a couple of good-sized pills made into long rolls about half an inch. About twice treating will cure if not too far gone. I don't understand why you have not lost some, but perhaps you have, and the pullets may be feeding on the dead carcasses. Better have a good look.

Turkeys Walk on Joints.—There is a disease among my turkeys that prevents them from walking. When they do walk, however, they go on their joints. They eat and look well but the disease has always proved fatal. —Inquirer.

There are two diseases whose symptoms appear so much alike that it is hard to diagnose without examination. I am inclined to think that it is tuberculosis of the joints, from the fact that it has proven fatal. The other disease is rheumatism. While that is bad, it rarely proves fatal except when the bird is left out in rain and cold. Make a test by killing one, or if one dies, open the joints. If there are any little yellow lumps and if liquid runs from the joints you had better get rid of them. You could send one to the University poultry farm at Davis and have them tell you what it is.

Has Good Duck Ground.—I have a slough in which there is water three inches to two feet deep containing an endless amount of vegetable and animal growth. Would it not be a fine place for ducks? If so, what breed would be the best? Would they sleep and nest in a house if fed in it regularly?—W. A. Mc.

It would be an extra fine place for ducks. Make the house just a good shed with wire front, low roof and always keep them in until they have laid in a morning. If you don't, they will lay in the water and you will never get the eggs. Ducks lay early in the morning, as a rule. Pekin ducks every time for profit.

Carbolic Nest Eggs.—One of our readers has kindly sent a suggestion from an Australian guest, which I am pleased to give:

We blow an egg in the ordinary way, mix plaster of Paris with water till as thick as paint, add a

Widen the Orbit of Your World

As a prominent Iowa farmer said at a recent convention: "It's a bigger world and a better one since I learned the values in Firestone Tires. If the knotted binder breaks, I get to town and back in time to cut the field by sundown. All because there's never a delay in the going with Firestone."

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few drops of carbolic acid and pour in the egg shell, set aside to dry and use for nest eggs. Lice will not go near it on account of the carbolic.

Poultry Breeders' Directory.

ROOFDEN RANCH CHICKS.—January will soon be here. Book your orders now for early delivery. Barred Rocks, R. I. Reds, Black Minorcas, Brown and White Leghorns. Quality chicks from first-class breeding stock. Hatched right and shipped right—at right prices. By the dozen or thousands. We can fill it if you book in time. Circular for the asking. Roofden Poultry Ranch and Hatchery, Campbell.

BARRED PLYMOUTH ROCKS—COCKERELS.—Cockerels—Cockerels—Yes, we have them; also Hens and Pullets—all bred from our Champion Winners at California's leading shows. Also hatching eggs. If it's Barred Rocks you want, get in touch with me right away. Have bred them exclusively for nineteen years. Send for Catalog. Chas. H. Voden. Box 396, Los Gatos, Calif.

WANTED.—A number of hot water incubators, Jubilee preferred, 200 egg capacity or over. 220-egg type, Hoganized, S. C. White Orpingtons and Sicilian Buttercups, cockerels, hatching eggs and chicks. All information gladly furnished. M. S. Woodhams, San Mateo, Cal.

INCUBATOR CHICKS.—Thoroughbred White Plymouth Rock, \$25.00 per hundred; White Leghorn, \$12.50 per hundred. Highest class of stock bred to standard and to lay. Awarded all first prizes at California State Fair 1916. Mahato Farm, P. O. Box 597 Sacramento, Cal.

CROLEY'S DRY MIXED INFANT CHICK Feeds for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by Geo. H. Croley Co., Inc., Poultry Supplies, San Francisco.

DANISH S. C. W. LEGHORNS.—If you want to increase the size or vigor of your stock or the size and number of your eggs, use one of our cockerels. River Bend Farm, St. Helena, Cal.

THE SANTA CLARA VALLEY HATCHERY solicits your orders for Fall and Spring delivery in 8 breeds of baby chicks. Order early and get the best. Jos. A. Bihn, Lincoln Ave., San Jose, Cal.

BABY CHICKS NOW READY.—Hatches every week. R. I. Reds, Barred Rocks, White Leghorns hatching now. Brown Leghorns and Black Minorcas later. Place Spring orders now, and be sure of getting them when you want them. Send for circular and price list. Campbell Poultry Ranch, Campbell, Calif.

HATCHING EGGS from our "Bred-to-Lay" S. C. White Leghorns. Season opens Dec. 1st. The early hatch lays the early winter egg. Booking now. R. H. Dickinson, Dept. IV, Los Gatos, Cal.

EASTMAN'S BREED TO LAY Barred Plymouth Rocks, Chicks, Eggs, Cockerels. Fairmead Poultry Farm, Fairmead, Cal.

WHITE WYANDOTTES.—Blue-ribbon winners. Eggs \$2 to \$5. Chicks, pullets, cockerels. R. W. Stawetaki, Route 2, San Jose, Cal.

HIGH GRADE ANCONAS.—Fancy and utility. Settings, \$3.50. Fertility guaranteed. J. R. Bell, Livermore, Cal.

DAY-OLD CHICKS.—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

CHICKENS, DUCKS, GESE, GUINEAS, Pea Fowl, Pigeons, Wm. A. French, 545 W. Park St., Stockton, Cal.

WHITE WYANDOTTES.—Fine large cockerels \$3.50. L. Havens Chowchilla, Cal.

TURKEYS, DUCKS AND GESE.

BOURBON RED TURKEYS and Eggs for hatching. My birds won all the honors in the Alameda County Poultry Exhibition in Oakland, 1914, and just as fine this year. A. H. Balmer, Alhambra Valley, Martinez, Cal.

THOROUGHbred WHITE HOLLAND and Bourbon Red Turkeys. Toms \$5; Hens \$2.50. Old White Holland Toms, \$7.50. Pearl Guineas, \$1 each. E. A. McKinley, E. D., Ukiah, Cal.

HART'S BRONZE TURKEYS AND EGGS.—Large reduction in price of stock. Order now for fall delivery. Free Circulars. Albert M. Hart, Clements, Cal.

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Secrets of Success with Chickens
Common Sense Chicken Talks
Pointers to Amateurs
How to Read Poultry Diseases
GLOBE MILLS, LOS ANGELES, CAL.

SAN FRANCISCO

San Francisco, Nov. 22, 1916.

WHEAT.

The Eastern market shows a little less strength at the moment, but the local situation is very strong, with difficulty in getting shipments from producing districts. Sonora is sharply higher, and there is no club of either local or northern varieties offered. Bluestem is quoted up to \$3, and everything is very closely held.

[First-hand prices on strictly first-class grain, San Francisco.]
 Sonora wheat\$2.75@2.80
 Northern clubNone offered
 Calif. club, cti.None offered
 Northern Bluestem2.85@3.00
 Northern RedNone offered

BARLEY.

No shipping barley is coming out at the moment, and choice feed has advanced sharply. Sales are light, but holders refuse to make any concessions. Shipping, cti.\$2.20@2.25
 Choice feed, cti.2.20@2.15

OATS.

Red seed is about cleaned up, and white oats are higher. Red feed appears to be still in fair supply, and move well at the old range.

Red feed\$1.80@1.85
 White2.15@2.20
 Black seed3.00@3.25

CORN.

No Eastern corn is offered on the spot, as the price at shipping points is not regarded favorably by local handlers. Egyptian is in strong demand, and even inferior lots are very firmly held, though only choice grain can be moved readily at the figures quoted.

[First-hand prices on strictly first-class grain, San Francisco.]
 Eastern Yellow, cti.None here
 California2.50
 Milo MaizeNominal
 Egyptian, new2.25@2.35

BEANS.

The white beans are now pretty well out of growers' hands, and activity in that line is subsiding somewhat, but the trade is taking renewed interest in the colored varieties, and buyers show considerable anxiety to cover their requirements in pinks and red kidneys. Growers are holding firmly, however, and the movement has forced prices up for good offerings of both kinds, the growers still holding a large proportion of the crop. Limas also show a further advance, and are moving off steadily.

(On wharf, San Francisco.)
 Bayos, per cti.\$5.75@5.90
 Blackeyes5.00@5.10
 Cranberry beans6.50@6.60
 Horse beans3.25@3.50
 Small Whites (south) new crop7.00@10.50
 Large Whites, new crop8.10@9.50
 Pinks6.00@6.25
 Limas (south)6.65@6.85
 Red Kidney9.00@10.30
 Mexican Reds6.00@6.25
 Tepary beans4.25@4.50

SEEDS.

Prices stand about as before, with less interest on the part of buyers, in the lines quoted, than for some time past.

[Wholesale Prices, S. F.]

Alfalfa, per lb. (guaranteed) .13@19 c
 Oregon Vetch4½@5 c
 Melilotus Indica7½ c
 Melilotus Alba23 c
 Bur clover, re-cleaned12½ c

HAY.

Arrivals are still decreasing, reflecting an even worse car shortage than was experienced in the season. There is hardly enough arriving to take care of actual requirements, with the result that prices locally are firmly held, with dealers frequently getting a premium for immediate delivery, while consumers are drawing as much as possible on their reserve stocks, buying as little as possible. Alfalfa is in fair supply, comprising a large part of the arrivals. There is not much export trade, but the demand is strong in many parts of the country, where the car shortage is also affecting deliveries.

[Wholesale prices per ton, carload lots, San Francisco.]

Wheat, No. 1\$14.50@16.50
 No. 212.00@14.00
 Tame oats12.50@15.50
 Wild oats12.00@14.00
 Barley12.00@14.50
 Alfalfa10.00@14.50
 Stock hay9.50@12.00
 Straw, per bale50@70

FEEDSTUFFS.

Bran is now held at \$29 to \$30, and middlings at \$38 to \$40. Cracked corn is extremely scarce.

POTATOES, ONIONS, VEGETABLES.

String and lima beans are higher, owing to frost. Onions have receded a little since last week, but remain very strong, and there is a more active demand for garlic, with some Eastern inquiries. Delta potatoes are coming in well, but are stronger as to price.

(Wholesale prices, San Francisco.)
 Celery, Alameda, bunch10c
 Cucumbers, lug50@75c
 String beans10@12½
 Lima Beans8@9 c
 Summer Squash, lugs50@75c
 Eggplant, lugs50@60c
 Peas, lb6@8 c
 Tomatoes, lugs30@50c
 Rhubarb, lugs75@1.00
 Potatoes, cti, Delta2.00@2.35
 Salinas2.65@2.75
 Sweet Potatoes, per cti1.75@2.00
 Onions3.00@3.25
 Garlic, new crop, per lb3@5c

POULTRY.

While the turkey demand is stronger, dressed stock is arriving freely and has prevented any advance. Dealers expect

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
 Prices Quoted as Paid to Producers.

a wide range of prices Thanksgiving, with fancy stock scarce and high, but large offerings of poor, unfinished turkeys, which will cause low prices for the less attractive offerings. This is due to the high cost of feed, which is causing some pressure to sell among growers. The same influence is bringing in large supplies of poor chickens, having a retarding influence on the market. Young roosters, squabs and ducks, however, are doing rather better, and Belgian hares show a wider range, with small stock higher.

Turkeys, dressed, large, lb25@29c
 Turkeys, live, lb, young, large,21@24c
 Old, large20@22c
 Broilers, 18 lbs. to doz. and less, lb.26@28c
 do, over 18 lbs. to doz.21@22c
 Fryers20@22c
 Hens, extra, per lb., colored20c
 Small leghorn15@17c
 Smooth Young Roosters, per lb. (3 lbs. and over)20@21c
 Squabs, per lb38@42c
 Geese, per lb14@15c
 Ducks15@16c
 Old14@15c
 Belgian Hares12@14c

BUTTER.

A sudden urgent demand for shipment to New York, notwithstanding the comparatively high prices here, has forced the market up to new high levels. This demand has been felt for several days, and is apparently likely to continue for some time, being a reflection of the shipments to Europe earlier in the year. The lower grades are now responding to the advance.

Thurs. Fri. Sat. Mon. Tu. Wed.
 Extra34½ 37 35½ 37 37½ 37
 Prime 1st34 34 34½ 35 36 36
 Firsts33½ 33½ 34 34 35 35

EGGS.

Prices have advanced rather sharply since last report, with diminishing production and a strong demand, both locally and at outside points. Some large shipments of storage eggs have gone north, leaving little here, which tends to stiffen the market.

Thurs. Fri. Sat. Mon. Tu. Wed.
 Extras52½ 54 53½ 54 54 52
 Sel. Pul.41½ 41½ 41½ 42 43 43

CHEESE.

Cheese as well as butter is being shipped East from the Coast States, something which has seldom if ever been done before, and the market is firmer in consequence, both flats and Y. A.'s being higher.

(S. F. Dairy Exchange prices.)
 Y. A. s, fancy19 c
 Fancy Calif. Flats, per lb.17½ c
 Monterey Cheese16@17 c

DECIDUOUS FRUITS.

Huckleberries and strawberries are both higher, with diminishing supplies. Christmas apples are beginning to move, being held at \$2 to \$2.25 per box. Other California apples are about as before, except that Newtowns are stronger, with considerable inquiry for shipment to England; and several cars have gone out, notwithstanding the difficulty of getting shipping space. Sales have been made at 85c, f. o. b. Watsonville; and the price on the street is higher. Winter Nellis pears are much higher, with few left.

Casabas are higher, with lighter offerings and a very fair demand.

[Wholesale prices, San Francisco.]
 Huckleberries, lb., fancy12@15c
 Strawberries, chest\$6.00@9.00
 Cranberries, Cape Cod, bbl.12.00@12.50
 Apples:

Christmas apples, box\$2.00@2.25
 Bellflower, box1.00@1.10
 Jonathans85@1.05
 Newtown95@1.10
 Pears, Winter Nellis2.25@2.75
 Persimmons, box, dbl. layer75@1.00
 Pomegranates, lug75@1.00
 Quinces, lug40@50
 Casabas, crate75@1.00

DRIED FRUITS.

Advances continue to appear in various lines, with most varieties well out of growers' hands. Another advance is noted in apples, which are getting quite scarce and are in demand both locally and for export. Ordinary pears are slow and steady, but fancy stock in Lake county is bringing as high as 11½¢ in the orchard. Peaches also have been marked up again. Apricots are about cleaned up, the few scattered lots remaining being held at high prices. The tonnage of prunes left in the country is running very light, and the trade is rapidly absorbing all offerings, having advanced the offered price to meet the views of most growers. The strength of the market has been increased by a demand from Europe for direct shipment, resulting in the repurchase of contracts by local handlers from buyers in the East, at advanced prices.

[Net to growers, bulk basis, f. o. b. shipping point.]

Apples, new crop7½@8 c
 Apricots, per lb. 191615 c
 Figs, white, 1916None offered
 Plums, blk5 @5½ c
 Calimyrnas, 1916None offered
 Prunes, 4-size basis, 19166½@7 c
 Pears6½@7 c
 Lake County pears11½ c
 Peaches6½@7½ c

HONEY.

Comb honey has been arriving freely, and shows less strength, but is very steady as to value. Offerings of extracted are very light, and there is a good local demand for both fancy and lower grades, with prices firmly held. Low-grade stock for manufacturing finds most demand.

Water white, comb13@14c
 Light Amber10@12c
 Amber8@9c
 Water white, extracted8@9c
 Light-amber6@7 c
 Dark4½@5c

HOPS.

Situation shows little change, buyers keeping out of the market for the most part, while growers look for better values and are not forcing sales. Sacramento10@11c
 Mendocino11@12c

HIDES.

The demand for hides continues in excess of the supply, and prices have again advanced sharply on everything in the list.
 Wet salted:
 Steers23½@26 c
 Cows23½@26 c
 Light hides, 25 to 48 lbs.23½@26 c
 Kip26 @30 c

Special Livestock Market Report.

Los Angeles, Nov. 21.

CATTLE: The market holds up fairly well. California and Arizona continue to furnish this market with a fair number of very good hay fed cattle. Killers were all in the market and made fair purchases, but did more or less picking around, and prices while not quotably lower were inclined to weakness.

Quotations f. o. b. Los Angeles:
 Beef steers, prime 1000 to 1100 lbs.\$7.00@7.75
 Stockers and feeders5.50@6.00
 Prime cows and heifers6.25@6.50
 Good cows and heifers6.00@6.25

HOGS: There were more hogs in the past week. California increased its supply and there were several shipments in from Idaho. While there were increased numbers in, they were not very well finished, showing the effects of the high price of feed. Killers were all in the market and wanted hogs and in sympathy with high markets East values ruled steady with a week ago.

Per cwt. f. o. b. Los Angeles:
 Heavy, averaging 250@300 lbs.\$8.50@9.00
 Mixed, 200@2509.25@9.50
 Light, 175@2009.25@9.50

SHEEP: While there is no change to note in this market from a week ago its tone was firm. A fair number of very good sheep and lambs were in from Arizona and Utah and a few from Idaho. Killers were all in the market and wanted supplies and bid up well for everything, and the market was firm without being quotably higher.

Per head f. o. b. Los Angeles:
 Prime wethers\$7.00@7.25
 Prime ewes6.50@6.75
 Yearlings6.50@7.00
 Lambs6.50@7.00
CALVES: Not many coming in and

market steady and firm. Selling at \$8.50 to \$9.50 per cwt.

San Francisco, Nov. 22.

The cattle market continues strong, especially for steers. Quotations are same as last week, but an advance may be looked for within the next few weeks.

Hogs are a little higher. They are coming in rather freely, sufficient to supply demand. Proportion of light-weights is rather large. The sheep market is steady. Lambs very scarce.

The wool market continues strong Southern fall wool a cent higher. [Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F. Hog prices subject to seller standing one-half of all hogs condemned by government inspectors.]

Steers, No. 17 @7½ c
 No. 26½@6¾ c
 Cows and Heifers5½@6¼ c
 No. 25½@5¾ c
 Bulls and Stags4 @4½ c
 Calves, light8 @8½ c
 Medium7 @7½ c
 Heavy6½@7 c

HOGS, grain-fed:
 150 to 300 lbs.9½ c
 300 to 375 lbs.9 c
SHEEP: Prime Wethers7½ c
 Spring Lambs, f. o. b. country points\$5.50@6.00
WOOL: Red Bluff, year's25@27c
 Mountain, fall16@20c
 Sacramento Valley, year's19@25c
 Mendocino, years32@33c
 Mendocino, fall19@21c
 Southern, year's18@21c
 Southern, 7 months'13@16c
 Southern, fall11@12½ c
 Imperial Valley, year's17@19c
 Imperial Valley, 7 mos.14@15c
 Nevada22@24c
 Fall wool10@20c

Calf and veal33 @39 c
 Dry Hides33½@35 c
 Dry Kip37½@38 c
 Dry Veal and Calf40 @45 c
 Pelts, long wool2.00@2.20
 Short wool1.75@1.90
 Horse hides, wet, large, ea.6.00@6.25
 dry, large3.50@3.75

HORSES.

Little if any new stock has been shipped into the local market this week, as last weeks offering proved more than the market could digest readily, and there are still a good many horses offered, with only limited demand. Military buyers, however, are still busy in the country, and keep everything suitable for their use pretty well cleaned up.

Drafters, 1700 lbs and up . . . 250
 Drafters, 1550 to 1650 lbs . . . 150@200
 Chunks, 1550 to 1600 lbs . . . 150@175
 Wagon horses 1050 to 1350 lbs 110@150
 Green Mountain range horses.
 950 to 1200 lbs.20@75

GROCERIES.

Flour is now quoted here at \$9 to \$9.40 per bbl., and sugar at \$7.70 per 100 lbs., granulated basis. Lard and salad oil are higher, and salt meats are very firm. Corn meal and a number of breakfast foods are advancing.

LOS ANGELES.

Los Angeles, Nov. 21, 1916.

BUTTER.

There was a decidedly firmer tone to this market the past week all along the line. Quite a falling off in the receipts and the government report November 1 showed that there were in 142 cold storage warehouses 13,424,000 pounds of butter less than the same time last year. Under this showing the market here advanced 3c for the week and San Francisco 2½c. Chicago is up 3½c and New York 2½c. Light production and a very good export movement by the way of Canada must be charged with this upward movement, as the home consumption is said to be no better, if as good, than a year ago at this time. The market is 8c higher than this time last year. Receipts for the week ending Tuesday were 215,200 pounds against 248,130 pounds the same time last year, a shortage of 32,930 pounds.

We quote fresh extra creamery .38c
 Prime first36c
 First34c

Wed. Thu. Fri. Sat. Mon. Tu.
 191635 37 37 37 38
 191528 28 28 30 30

EGGS.

This market as well as that for butter exhibited a decidedly stronger tone the past week. While the cold storage stocks are as good as a year ago and the current receipts holding up very well. The government report of November 1st showed that there was a shortage of 1,392,238 cases in 142 cold storage warehouses compared with a year ago. Here the market advanced 1c up to Monday and San Francisco 3c. Chicago is 2c higher and New York is 8c higher. Tuesday brought no change. On call there was no trading. Fresh ranch case count was bid for at 50c, but there were no sellers. Receipts by rail for the week were 703 cases and estimated receipts by truck 600 cases, total 1303 cases. The same time last year the receipts by rail were 492 cases and estimated receipts by truck 600 cases, total 1092 cases.

We quote fresh ranch case count .50c
 Pullets42c

Wed. Thu. Fri. Sat. Mon. Tu.
 191649 49 50 50 50 50
 191546 46 46 44 44 44

POULTRY.

Receipts the past week were very good and all light stuff, such as broilers and fryers were slow sale. Heavy hens continue to sell very well, but light ones are slow. Turkeys are coming in more freely, but in anticipation of the Thanksgiving demand brought a little more money. The eastern markets are very high, and a good many Texas turkeys that previous years have come to this market have been diverted East. Ducks steady and in fair demand and geese are selling fairly well.

Broilers, 1½ to 2 lbs.22@23c
 Fryers, 2½ to 3 lbs.20@22c
 Hens, over 4 lbs.18@19c
 Hens under 4 lbs.14@15c
 Ducks15@16c
 Geese14@15c
 Roosters, 3 lbs. up (soft bones)12c
 Turkeys, heavy, 12 lbs. and up.23@24c
 Turkeys, light21@22c
 Squabs, live, per doz.\$1.50@3.00
 Dressed3.75@4.85

HAY.

There was a little more doing in this market the past week. Stocks have been pretty well reduced and there was more buying than for several weeks. But as the receipts were better the market made no quotable improvement. Indeed the general tone of the market is hardly so strong. Receipts 203 cars.

[F. o. b. Los Angeles.]
 Barley hay\$16.00@18.00
 Oat18.00@20.50
 Alfalfa, Northern15.00@16.00
 Alfalfa, local17.00@18.00
 Straw7.50@8.50

COTTON.

Cotton is bringing fancy prices in the Imperial Valley: 1000 bales were sold last week at Calexico, including both long and short staple. The buyers were Liverpool and Japanese firms. The short staple brought 18.90c per pound and the long staple 25.50c to 25.75c per pound. Cotton seed sold for \$80 to \$40 per ton.

The market the past week showed

more life and there was an advance of 25c per cwt. all round. There was a noticeable improvement in the demand for everything, with limas and whites showing most life.

We quote from growers:

Limas	\$7.00 @ 7.25
Large white	9.50 @ 9.75
Small white	9.50 @ 10.25
Pinks	7.50 @ 7.75
Blackeyes	5.25 @ 5.75

WALNUTS.

The California Walnut Growers' Association reports the season closed and says it has been a very successful and

satisfactory one. There are no more No. 1 walnuts now to be had at Association prices. A half cent advance is being bid outsiders and but few are being bought at this advance. A good many culls are still coming in and they are bringing 5@6c per pound.

The Associated prices for this year and last are:

	1916	1915
No. 1	\$15.50	\$13.50
No. 2	12.50	10.60
Budded	19.00	17.00
Jumbos	17.50	16.50
Orchard run 3c per lb less.		

Special Citrus Market Report.

Los Angeles, Nov. 21.

Shipments of oranges from Southern California from November 1 to November 16 were 272 cars of oranges and 302 cars of lemons. The shipments for the same time last year were 372 cars of oranges and 170 cars of lemons. Shipments of oranges from Central California from November 1 to November 15 were, 96 cars of oranges and 60 cars of lemons. The same time last year the shipments were 21 cars of oranges and 25 cars of lemons. Shipments from Northern California from November 1 to November 15 were 53 cars of oranges and no lemons. The same time last year the shipments were 3 cars oranges and no cars of lemons.

There was a little better tone to the market the past week at all the eastern centers and demand fairly good for all desirable sizes. Prices show little change from a week ago. Locally the market was better. Some new navels were received every day from

Tulare county. The fruit was well colored for so early in the season and met with a fair demand. It generally tested 8 to 1. Valencias are still bringing 2 1/2 to 3 1/2c per pound in the groves and grapefruit 2@2 1/2c in the grove, which is lower. The receipts showing quite an increase. But at the prices there was a very fair demand. New navels selling very well at 2@2 1/2c in the grove. Lemons are still dull at 1 1/2@2c per pound in the grove.

New York, Nov. 20.—Twelve cars of Valencias and six cars lemons sold. Valencias averaged \$2.15@3.10. Lemons averaged \$2.40@3.50.

Boston, Nov. 20.—Ten cars sold. Market is unchanged on oranges, doing better on lemons. Valencias averaged \$2.75@3.65. Lemons averaged \$2.55@3.40.

Philadelphia, Nov. 20.—Two cars sold. Market is unchanged. There is a good demand for oranges and lemons at prevailing prices. Valencias averaged \$2.95@3.20. Lemons averaged \$3.55.

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.

Week Ending	San Francisco 1915	San Francisco 1916	Los Angeles 1915	Los Angeles 1916
Jan. 2...	28.60	28.00	28.80	28.80
" 9...	25.33	26.65	26.00	28.16
" 16...	27.50	27.83	26.83	28.10
" 23...	30.66	28.25	30.66	28.50
" 30...	28.66	36.33	28.00	36.66
Feb. 6...	26.88	30.25	26.80	32.33
" 13...	26.74	31.40	27.00	33.25
" 20...	29.00	32.00	27.16	32.00
" 27...	29.10	30.90	27.00	35.25
March 6...	27.00	24.08	25.25	24.16
" 13...	24.66	29.91	24.00	28.83
" 20...	23.00	28.33	22.50	27.16
" 27...	22.91	28.50	23.00	28.08
Apr. 3...	23.00	28.50	22.23	28.83
" 10...	23.08	29.31	32.00	28.00
" 17...	23.00	27.33	22.00	27.50
" 24...	23.00	25.25	22.00	25.00
May 1...	23.08	24.33	22.00	25.33
" 8...	23.00	24.10	23.08	25.00
" 15...	23.16	24.58	23.00	25.66
" 22...	23.75	25.00	23.25	25.00
" 29...	23.08	26.50	23.00	26.50
June 5...	23.90	25.50	23.00	27.00
" 12...	24.08	25.83	23.83	27.00
" 19...	25.16	24.50	26.00	25.91
" 26...	25.50	24.50	26.16	25.91
July 3...	25.83	24.60	26.16	26.00
" 10...	26.21	26.40	26.00	26.60
" 17...	26.58	25.83	26.00	26.00
" 24...	25.41	26.00	25.50	26.00
" 31...	27.00	26.00	26.00	25.91
August 7...	27.00	26.16	26.00	26.00
" 14...	27.00	26.50	26.00	26.00
" 21...	27.50	26.50	26.00	27.95
" 28...	28.00	27.25	26.00	28.50
Sept. 4...	28.00	30.00	26.00	30.50
" 11...	28.00	30.20	26.00	32.00
" 18...	27.00	30.41	26.00	31.09
" 25...	26.50	30.41	26.00	30.50
Oct. 2...	26.91	31.66	26.00	32.16
" 9...	26.91	32.91	26.00	32.83
" 16...	27.00	33.50	26.00	33.50
" 23...	27.00	32.75	26.00	33.00
" 30...	27.00	32.59	26.00	33.00
Nov. 6...	26.55	32.66	26.00	33.00
" 13...	28.11	32.80	26.33	33.00
" 20...	29.59	35.25	28.60	35.66

MARKETING TURKEYS.

If you will follow these instructions, they will help to sell your turkeys to the best possible advantage:

A poor, light turkey is worth more money on the ranch than on the market; therefore dress and ship only fat turkeys. Keep the light ones until they are fat and sell them on a later market.

Dressed to market turkeys under ten pounds and hen turkeys under eight pounds are not desirable. Turkeys are not wanted at any weight unless they are fat.

Dressing—Turkeys should always be dry picked, heads and feet on, undrawn for the San Francisco market. Be careful in dressing not to rub or break the skin; also, be sure that all birds are well-bled.

Packing—Be sure that birds are thoroughly chilled—or, in other words, that all animal heat is out of the body before packing. Clean blood off heads and wring heads in paper. Put paper between layers.

Shipping—Ship by express and be sure to mark each package with both your name and consignee, and send them the shipping receipt.

Publisher's Department.

A new advertisement in our columns this week is from the Armstrong Mfg. Co., who has designed and built an engine very much simplified, leaving out unnecessary parts.

In our poultry liners this week we print an ad. for the Roofden Poultry Ranch. Mr. Ellison now has 100 incubators with 540 egg capacity each, and is prepared for all orders he may receive.

Many subscribers to the Rural Press will be interested to learn that the old established firm of W. Davis & Sons have moved to 333 Market St., San Francisco, where they occupy a large 6-story building in manufacturing leather goods.

"California Pure-bred Livestock Breeders' Directory" is the title of a new book of 62 pages recently issued by the Wahlgreen Co., San Francisco, and which was compiled by D. O. Lively. The book furnishes an up-to-date list of purebred stockmen in California, and is well worth the price of 25c per copy.

Here is another case where we lose an ad. because we sold out the stock. Geo. Boock of Los Molinos writes us as follows:

"Please take out my ad. in your paper about Sudan grass seed and send me bill for same. Have sold it all on your first ad. Talk about selling like hot cakes—it went more like greased lightning this time."

This is catalogue time with the nursery trade. Already this office has received several and we know that they are gotten out for distribution among those who intend planting this season. If you expect to set out trees it will be well for you to send to your nurseryman for his latest catalogue. And by the way, we would suggest that you order your nursery stock early, as already there is a scarcity of stock in some lines, notably prunes, walnuts and almonds.

"Principles of Feeding Farm Animals," a new book by Sleetor Bull, of the College of Agriculture, University of Illinois, has just reached our desk. It is a book of 400 pages, cloth bound.

well illustrated, and published by the Macmillan Company, 66 Fifth Ave., New York, at \$1.75 per copy. The book covers in a technical way all the subjects connected with farm animals, their feeding, by-products, efficiency of rations and fertilizing values of feed stuffs. A set of feeding tables in the back of the book make it of great practical value to the breeder.

Classified Advertisements

MISCELLANEOUS.

REBUILT GAS ENGINES from 3 to 50 h.p. Thoroughly overhauled and guaranteed. We handle only high-grade engines. Write us your requirements. Motors. Gas Engines bought, sold and exchanged. Mechanical Installation Company, 181-89 Second St., San Francisco.

EVERY SIZE WROUGHT IRON WATER Pipe and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a Square Deal. Weissbaum Pipe Works, 160 Eleventh St., San Francisco.

SECOND HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHEETER PIPE WORKS, 306-K Howard St., San Francisco.

PRODUCER TO CONSUMER—Alfalfa meal, alfalfa hay, oat hay, honey, beans, Gyp corn, sorghum molasses, etc.—what do you need? O. L. Linn, Marketing Agent Stanislaus County Farmers' Union, Modesto, Cal.

APPLES DIRECT FROM PRODUCER—Fancy grade, bulk pack. Per box: Newtown Pippins, 85c; Missouri Pippins, \$1; No. 2 grade, 80c. Edward A. Hall, R. F. D. 1, Watsonville, Cal.

BUY ROASTED COFFEE WHOLESALE—Best, 10 pounds, \$3.00 delivered. Order with remittance. WM. J. SCHROTH CO., 112-B Market St., San Francisco.

STUDY TELEGRAPHY, Stenography, Book-keeping, Law, English. Board, room and tuition may be earned. Catalogue free. Mackay Business College, 909 Main, Los Angeles.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency, Savings and Loan Building, Stockton, California. Established fifty years.

"HOW TO LIVE ON LESS"—a guide to cheaper living. Wholesale catalogue free. Pacific Co-operative, A236 Commercial St., S. F.

TO REDUCE THE HIGH COST OF LIV. INC. send for our Wholesale to Consumer Catalog. SMITH'S CASH STORE, 106 Ca. St., San Francisco.

HONEY—Pure extracted honey in 5-gal. cans, \$4.00. L. Haynes, Chowchilla, Cal.

SEEDS, PLANTS AND TREES.

SCARIFIED SWEET CLOVER SEED—New bulletin—"Sweet Clover in the Northwest"—tells how sweet clover thrives under severe conditions, building up the soil and preparing it for alfalfa and other crops. Write for copy. Scarified seed makes difference between success and failure. Also have fine stock of non-irrigated, pure, alfalfa seed. Write for prices and samples. Ralph Waldo Elden, Box 22, Central Point, Ore.

CELERY SEED FOR SALE—Dwarf Golden Heart variety. Produced from seed purchased from C. C. Morse & Co. Strictly fresh and clean. Price, per pound, \$1.50. James Mills Orchards' Corporation, Hamilton, Cal.

WALNUT TREES—Franquette, Mayette and Mammoth on Black Root; also Grafting Wood and Black Seedling Trees. Lowest prices. Mammoth Walnut Nurseries, Watsonville, Cal.

MISSION OLIVE TREES—Raised from my own bearing trees. This is the only sure way to get what one wants. W. A. Hayne, Box 461, Marvsville.

QUALITY TREES—Seedlings, 5c. Prunes, 10c. Walnuts, 30c. Cash Nurseries & Seed Store, Sebastopol, Cal.

BERRY PLANTS—of all kinds. Large, strong and well rooted. Prices lowest. M. J. Moniz, Sebastopol, Cal.

WANTED.

WANTED—Young men and women to attend the Western Normal Courses—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A," Western Normal, 524 E Market St., Stockton, Cal.

AGENTS—Take orders for raincoats. Big commissions. Easy profits. Cooper made \$314 last month. We deliver and collect. Sample coat free. Comer Mfg. Co., 11 Cable St., Dayton, Ohio.

COUNTRY LANDS.

STANISLAUS FOOTHILL COUNTRY—After extensive search over California I purchased a year ago excellent 300 acres bench land bordering Stanislaus River, very attractive scenically on main highway S. F. to Yosemite. Soil and climate adapted to fruits, oranges, nuts and alfalfa—we are specializing on almonds and alfalfa. Tract watered by gravity ditch. Brother and self developing portion for own holding. Practically all balance sold to parties doing same. Will sell the three or four fine remaining tracts to desirable parties at very reasonable price and long time. Bank references. George S. Henry, C. E. Oakdale, Cal.

RANCH FOR LEASE for a term of years and stock for sale. 120 acres of Alfalfa. A-1 building, in the Modesto irrigation district. Two strings of A-1 grade Holstein cows, horses, hay, hogs and implements. Will take part cash and give long time on balance. \$6000 will handle this nicely. J. R. Coon, Route A, Box 220, Modesto, Cal.

40 ACRES choice level land. Improved. No alkali. Bargain price. Might trade. John Buck, Chowchilla.

Turkeys Wanted

Ship to a House of Known Financial Responsibility.

NEW GOVERNMENT LAND OPENINGS now. Different counties. States. Booklet. New Circular Free. Valuable, well located, overlooked bargains obtainable. Write Joseph Clark, Sacramento.

I HAVE 60 ACRES at Oakdale, Stanislaus county. Will give 30 acres to party that will plant prunes and almonds and care for five years. John Jay, Los Molinos, Cal.

FOR SALE—80 acres of well improved land. Fine for dairy or hog ranch. For particulars write Route 1, Box 34, Galt, Cal.



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Write now to Joseph Clark, Searcher

of Government and State Records, 1511

K St., Sacramento.

Write Us, and We Will Keep You Posted on the Market.

Western Meat Co. San Francisco

Mrs. Best's Letter.

My dear Friends: Quite early in the fall the white hat was the new, desirable article, but as the season progressed, the dark hats have been seen more and more, but by some whim of fashion, the white hat is back in popularity again.

You see them in soft, boyish felts for walking or driving, and also in beautiful white plush trimmed simply with an ornament or a wing for dressier wear. They are beautiful on women with fresh skins, but a little trying to anyone whose skin is browned or whose color has faded.

The full pleated skirt is back in favor again and many times it is trimmed with a broad band of contrasting color. One very nobby one was made of a large black and white check with a broad band of black at the bottom of the skirt. This was made of a soft velour cloth—in fact, nearly all suits and coats are in the soft weaves.

Broadcloth suits are having a great run of popularity; they are shown in a light weight satin finish cloth and also in a heavier weight almost like men's tailored goods. Many of them are fur trimmed and a few have velvet collars and cuffs. Skirts are rapidly growing longer, many of them being not more than four inches from the ground. And as is usually the case in the fall, suit coats are long, many of them three-quarter length.

There is a new sport suit on the market made of a heavy material woven like flannel that is wonderfully good looking. It comes in solid colors and is made with a medium long coat and large collar and is conservative enough to be suitable for many occasions.

Crepe-de-chine underwear is quite popular now. We have had it in pink and white, and now it is being shown in an orchid tint. It is not practical for every-day wear, but is lovely to own for dress-up occasions and makes a beautiful gift for a young lady.

The light-colored shoes continue to be worn and so do the light spats. If all the rumors we hear about advancing shoe prices are true, it would pay all of us to lay in a year's supply. For although they are high now, the prospects are that they will be much higher in the near future.

A great many women are wearing white stockings with dark high shoes, but it is not an attractive style, for with short skirts it makes the leg so noticeable.

Rosabella Best.

CARE OF BED LINEN.

If available, a closet is better for bed linen than a bureau or chiffonier. The closet should be filled with shelves and they should be of varying distance apart. The top shelves should be used for extra blankets and articles not in common use, and the middle shelves should be devoted to those articles that are in use every day.

Have a separate shelf for different articles, and the work of keeping the closet in order will be much reduced.

For articles that are in constant use, it will be found to equalize wear if each week the linen that has been washed is put at the bottom of the pile. This may take a little more time, but it pays.

THE HOME CIRCLE

WHOLE WHEAT BREAD.

Editor Home Circle: Would like to know how to use whole wheat flour in making light bread. I have been told to not make the dough too stiff, but am not successful.—Mrs. W. D. C., Laton.

Try this recipe: 1 pint milk, 1 teaspoon salt, 1 pint water, $\frac{1}{2}$ cup sugar, 1 compressed yeast cake. Scald the milk and add the water. When luke warm, add salt, sugar, yeast cake (dissolved in 2 tablespoons water) and sufficient whole wheat flour to make a batter that will drop from the spoon. Beat continuously for 5 minutes. Cover and let stand for 3 hours; then add sufficient whole wheat flour to make a dough. Knead at once into loaves, put in small greased pans, cover and stand in warm place for an hour. Bake in a moderately quick oven 45 minutes.

MINCE PIE.

One cup of chopped cooked meat, one cup of seeded chopped raisins, one cup of cleaned currants, $\frac{1}{4}$ cup chopped citron, one cup brown sugar, $\frac{1}{4}$ cup of molasses, three cups of chopped apple, one cup of meat liquor, one teaspoon each of salt and cinnamon, $\frac{1}{2}$ teaspoon each of mace and cloves, the grated rind and juice of one lemon and one orange and one cupful of boiled cider. If you cannot get this, use one cup of the rich syrup from pickled peaches. Mix thoroughly and cook until the apple looks clear.

HOUSEHOLD HINTS.

If the steel parts of the kitchen range have become dull, the best and most economical method of cleaning them is to rub them with very fine coal ashes, carefully freed from grit, which might scratch the steel.

Sweeten old lard or butter jars by filling them with very hot lime water.

A coat of varnish applied to oil cloth or linoleum will greatly prolong its usefulness.

For upholstered furniture use a new paint brush to clean crevices.

Iron can be kept from rusting by touching up with mutton suet.

USING BURLAP SACKS.

Nowadays when salt, sugar, wood—blocks—and many of the commercial stock and poultry foods are sold in burlap, one soon accumulates many of these valuable sacks which may be put in many and varied uses. Those that are in good condition I rip apart and wash carefully. This year I sewed enough together to make a splendid curtain for our screen sleeping porch. Our bedroom floor borders were badly splintered and in need of some sort of borders, for we used rugs. I dyed sacks to harmonize with the rugs, one a rich golden brown and the other a dark olive green. I cut the sacks so as to make a triangular piece for the corners of the rooms, and fitted the rest carefully together with neat seams. We were all delighted with the result.

Another exceedingly practical use is to sew enough together to make a protector for the mattresses. Fit them carefully and sew to the springs. They do not bunch up, so fitted and sewed allowing one to turn the mattress without hindrance and protect the mattress from dust and rust. I use them to cover the cushions the men use on the hard wagon and farming implement seats, also for porch and extra cushions for the automobile. Those that are too worn or torn to use I patch and the men use them about the ranch.

Fresno. Mrs. W. M. Bowen.

BOSTON BROWN BREAD.

One cup sour milk, 2 cups Graham flour, $\frac{1}{4}$ cup white flour, $\frac{1}{2}$ cup molasses, 2 tablespoons brown sugar, 1 teaspoon salt, 1 rounded teaspoon soda. Pour this mixture into large baking powder cans that have been well heated in the oven. Fill $\frac{3}{4}$ full, cover tightly and set cans in a kettle of cold water and bring to a boil. Then let simmer on back of stove or place in fireless cooker for several hours. When done, take off top and set in oven for a few minutes.

Camphor gum kept in the drawer where silverware is stored will prevent tarnishing.

Floral Department.

[By Geo. N. Tyler.]

Pelargoniums that were planted in August and September, and were potted into two or two and a half inch pots, are now ready for a shift into four-inch. Pot them firm and use a good fibrous loam, with a five-inch pot full of hydrated lime to a barrowload of soil. Also do not use manure for them, as it makes a soft, long-jointed growth, but use fine bonemeal for a fertilizer—a four-inch potful to a barrowful of soil. They should have full sun, and be kept on the dry side through the winter, for if kept too moist they are liable to damp off. The main secret of growing good pot pelargoniums is to keep them in a growing condition all the time. This applies especially to Easter greetings and the sports from same.

The severe cold weather and frosts that we have had, makes it the right time now to prune your roses and all deciduous shrubs. You can also transplant these now.

Roses.—If you are going to have any new roses in the spring, now is the time to buy and plant. Some of the new roses are fine—Mrs. Aaron Ward, Sunburst, Prince E. C. Ehrenberg, Jonkeer, J. L. Mock, Lady Hillington, Prima Donna Ophelia, Hoosier Beauty are all good summer bloomers, and should be in every garden. Irish Fireflame, an improvement on Irish Elegance, and Mrs. Geo. Eldger, the yellow Cecil Bruner, are also fine growers.

In buying your plants, get field-grown ones; they do far better than out of pots or cans. I advise those grown on their own roots. Grafted roses are all right, but you will get more and better flowers from own root plants.

Pansies should now be in their blooming beds, and should be given a mulch of half-rotted cow manure.

Dahlias should be cut off close to the ground, and lifted and stored away as described in my last article.

Bulbs.—It is not too late yet to plant bulbs. Be sure and plant the baby gladioli, convolvulus alba (white), Blushing Bride and peach blossom, a delicate pink. They are perfectly hardy and bloom in early spring. Plant about three inches deep. Freisias can still be planted.

If you have a plant in your greenhouse or conservatory that has been frozen, you can save it if you get at it before it has a chance to thaw. Spray it with cold water, which draws out the frost, and then cover it with a newspaper, and put in a shady, cool place for a day or two. If you stand pans of water among your plants it will have a tendency to draw the frost and prevent them from freezing.

JELLIED PRUNES.

Pick over, wash and soak one-third pound prunes in two cups cold water and cook in same water until soft; remove prunes, stone and cut in quarters. To prune water add enough boiling water to make two cups. Soak two and one-half tablespoons granulated gelatine in half cup cold water, dissolve in hot liquid, add one cup sugar, one-fourth cup lemon juice, then strain, add prunes, mould and chill. Stir twice while cooling to prevent prunes from settling.

Genuine Army Shoes for Farmers

Made from the strongest and very finest prime calfskin leather on earth—genuine Indian tan—Goodyear welt—heavy soles and bellows tongues—soft and velvety feeling to the feet. These shoes are made over the lasts and patterns designed by Edward Lyman Munson, A.M., M.D., of the Medical Corps of the United States Army, and approved and adopted by the War Department. This is the shoe on which we were awarded a contract for making 150,000 pairs for the Government. This is a real outdoor shoe for farmers, stock raisers, fruit growers, hunters, hikers, campers and general outdoor service; made for perfect comfort and long wear. Our name is stamped on every pair. Order No. 202 R Tan Army Shoe.

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Good Health.

[By H. E. Pastor, M. D.]

"Fat Is Fat"—But with a Difference.

Some interesting experiments have been conducted recently for the purpose of determining whether or not butterfat possesses any advantages over other fats as an article of diet. These experiments were undertaken in view of efforts made by promoters of other forms of fat as substitutes for table butter—for example, oleo-margarine, butterine, peanut butter, etc. It is claimed by those interested in these substitutes—and by some dietists and chemists as well—that there is no essential difference between the various forms of fat as to their food values. In other words

the claim is put forth that "fat is fat"; that the function of fat in the human economy is to generate heat and energy; and that butterfat has really no superiority in this respect over fats derived from other sources, except perhaps in greater digestibility. The experimenters included tallow, peanut oil, olive oil, cottonseed oil, and others, and the conclusion arrived at was this: While butterfat, in common with other fats, yielded heat and energy when taken into the animal economy, it also performed a service which the others did not; namely, it "promoted growth." The only other fats experimented with that yielded the same results were the fat of the yolk of egg (lecithin), and the fat cells of a pig's kidney. All of which would seem to indicate that the fats which induce animal growth are derived from living protoplasm, and that butterfat as an article of table diet is not adequately replaced by the commercial "substitutes," so-called.

A Mexican Menace.

The State Board of Health is interesting itself in another matter in behalf of the health of the body politic. The numerous Mexicans who have crossed over the border line into California, owing to the family disturbances in their own country, are said to show unpleasant evidences of the neglect of the fine-tooth comb, and that these "evidences" are active in spreading typhus fever. Twenty-five cases in this State are said to be attributable to this cause. Quarantine has been ordered against premises occupied by persons suspected of harboring these unwelcome parasites, whose monosyllabic name is taboo in polite society. Mexico is a country of marvelous resources.

No Appetite—What It Means.

Loss of appetite is nature's way of saying the system requires no food. This warning, however, is rarely heeded by the human kind. Animals, are more obedient to nature's danger signals. Observe a cat or a dog when it is ailing. It will crawl off to some out-of-the-way place where it will not be bothered. A horse, if it is ill, cannot be persuaded to eat. And the same is true of nearly all the lower order of animals. Don't force food on a sick person to whom food is repugnant. The salivary glands are deficient in secretion, or there is a deficiency of gastric juice or of bile, or torpor of the pancreas or of the intestinal glands. Give nature a chance to reassert herself.

Buttermilk for Erysipelas.

Buttermilk has been successfully tried as an application for erysipelas in all its stages. It is said to check the spread of the infection, allay the pain and abort the whole morbid process. As it is harmless, costs little or nothing, and is easy to apply, there can be no objection to giving it a trial. Such efficiency as it possesses is probably due to the lactic acid contained.

Bee Stings.

A favorite homely remedy for the sting of a bee is an onion poultice made with raw pulp or roasted onions. Epsom salt or common salt may be used to make a thick plaster.

10-rib Warmth



Turns
your
winter
into
June

BROTHER! Just get your fingertips *inside* a Mayo 10-rib garment and feel that fleeced inner surface.

"Velvety," say you. Right. Imagine how good it feels when the icicles hang from the house 10 inches to 1½ feet long.

But the velvety hug of Mayo Underwear is due to far more than its fleeced inner surface. Mayo has the same knitting that's found in dollar underwear—ten ribs per inch instead of 8.

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Does that close, snug, 10-rib knitting turn winter into June? It *does*! Will it turn *your* winter into June? It *will*! Get your Mayo underwear before winter gets you.

Men's Single Garments. Men's Union Suits
Boys' Union Suits

Those who prefer the old-style 8-rib garments will find Mayo 8-rib Underwear an excellent value.

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You find it hard to get hosiery that will stand the housewife's everyday wear. The heels, soles and toes wear full of holes; it ravel's quickly and loses its shape after the first washing. Here's the solution for the problem—buy

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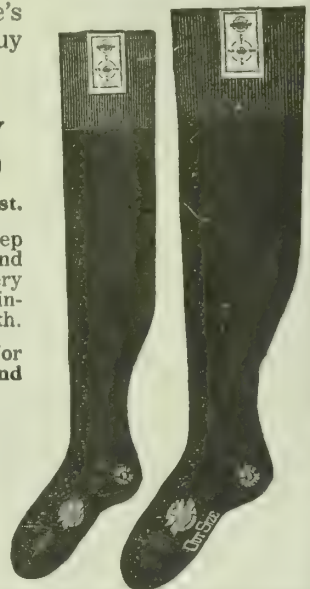
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Durable Durham Hosiery is made for everybody in the family. Price 10c, 15c and 25c. Every pair is fully guaranteed.

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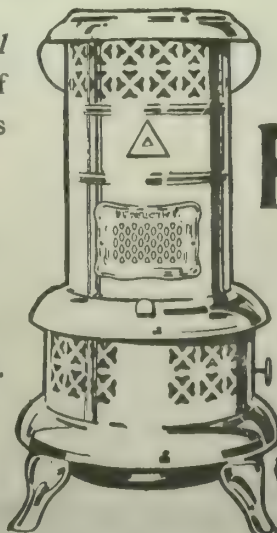
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THE PACIFIC RURAL PRESS

SAN FRANCISCO

DECEMBER 2, 1916.

LOS ANGELES

Sentimentality in Land Building.

[Written for Pacific Rural Press.]

SENTIMENT seems to be a poor foundation upon which to invest thousands of dollars in an agricultural undertaking; and yet it was undoubtedly sentiment which caused the four members of the Henderson Company to use the old Henderson homestead seven miles east of Galt as a nucleus for one of the largest pure-bred breeding establishments in the State. Before the members of this firm left home to engage in more profitable pursuits in the city, the 500 acres contained in the "home ranch" was no better or worse than thousands of acres of land in the immediate vicinity. Portions of it were slightly rolling in character; some was in the bottoms adjoining a small stream that ran through the place; but all of it was valued chiefly for its grain growing possibilities.

But many years of tenantry changed the character of the soil. Gradually the virgin fertility was carried off to grain dealers in ever-decreasing amounts and nothing was being done to replace it.

Livestock Medicine.—It was in this run-down condition that sentiment came to the rescue. It was an eye-sore to the children in its dilapidated condition when they conceived the idea of bringing it back to its early-day productivity by a system of livestock farming.

Tradition said that intensive livestock growing was out of the question because of lack of irrigation water; but sentiment determined the company to develop water from wells. There were disappointments in wells, but four of the holes that were bored proved productive and with electrically-driven pumps installed, these wells furnished solvent hopes for alfalfa.

The development work started two years ago. Sentiment has had many a hard bump since then; but through it all the main idea of growing feed has been kept in the forefront with the result that 160 acres of land is now in alfalfa, and corn for three silos has been

anything else, but had been cropped to the limit.

The irrigable land produces alfalfa and corn; the herd of registered Holsteins, besides producing valuable calves and lots of milk, yields an immense amount of manure; and this manure when applied to the higher grain land increases the yield of grain and adds humus to the worn-out soil. Duroc and Chester White hogs add to the economy of this system. With keen competition it behooved the owners to buy the best and breed better ones if possible. At first they confined their purchases to Cali-



Home Coming Scene on the Henderson Ranch.

fornia, learning in this way their first lessons in the purchasing of pure-bred stock. Next they journeyed East, where they selected a large number of registered Holsteins from some of the leading breeders. Included

in this lot were the bulls Supreme Glista Pietje, a son of Woodcrest Pietje Ormsby and out of the 32-pound cow Glista Eglantine; King Lillian Walker Segis, a son of King of the Black and Whites and whose 15 nearest dams averaged 29.26 pounds butter, and King Pontiac Segis Inka, a son of King of the Pontiacs, who has almost 200 A. R. O. daughters and is considered by many the premier sire of the breed.

Equipment.—Such cattle called for comfortable quarters if they were to make records in keeping with the times, so a set of modern buildings were erected; not gaudy or fanciful affairs, but convenient and sanitary structures.

Included in this scheme are two milking stables with a combined capacity of 120 cows. Well-drained concrete floors make these sanitary and plenty of window space provides good ventilation. Each building is equipped with a tight-floored attic where mill feeds can be stored. Two stave silos separate the milking barns and a third silo is located between one of the milking barns and the combination test and calf barn. Still another building was erected for the bull stalls, where both old and young bulls can secure protection from the weather. Hay feeding of cows and young stock is done in separate lots where feed sheds are provided. With good feed, cattle, and buildings it naturally follows that good records should be

made; and while it is a little premature to write about this work, although several very excellent records have already been made, Superintendent Jay Dutter has a program of test work outlined for the coming winter which should result in some creditable records. This is only a start, for every cow will be required to have an official stamp of approval to hold

(Continued on page 613.)



Dollars Have Followed Sentiment for Business Reasons.

grown the past year. All this tonnage fed to stock on the place will make fertility.

Manure for Grain Land.—On the higher rolling land, the problem is entirely different. Irrigation there is impracticable, so other means of returning fertility have had to be practiced. It was this land that most badly needed livestock; for it was better suited to grain growing than

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EDITORIALS

CAUSES FOR REJOICING.

THE great first cause of rejoicing, from our point of view, is that a good rain has fallen over all the upper part of the State, northward of the latitude of San Francisco and very acceptable showering for considerable distances southward of that line. There has not been depth enough in the precipitation to drown the dry-weather prophets, it is true, but enough, we trust, to render their prophetic soles damp and disagreeable, which is a proper recompense for their pessimism. For it was really a good rain, dropping nearly three-quarters of an inch at Eureka, San Francisco and Red Bluff and more than one-quarter over the central valley around Sacramento. And it was the right kind of a winter storm, too, for it was our end of a great northern disturbance which struck the coast in the regular winter way, and there is no reason why we should wait a month for more of it. At San Francisco we are now a little in advance of the normal to this date, so why worry? Over more than half the State it is enough to hold the new grass, to plump out the olives which have not gone too far with frost, to start new foul-growth for the land-cleaner and to prepare for early grain-sowing. It says, as clearly as weather can, smooth out your brow and get to work!

It is Thanksgiving week and we shall spring the legs of our editorial tripod a little wider than is our wont, to catch themes for comment beyond our chosen field of California agricultural technics—in fact, we shall not refuse California pyrotechnics if they happen to come our way.

WHAT WE GET WITH WILSON.

WE HAVE already sounded the joy-bells over the honorable publicity which comes to our State for our election of President Wilson. Some of our earnings along that line are of deep industrial significance—such as the establishment of a federal district land bank at Sacramento, which seems assured. Of course this is non-political and fully justified by geography and by our agricultural development, and yet one can never tell how the general fact of good will may illumine or obscure even such colossal facts as these. We are surely in the sun for everything which the government can justly do for us—and who is such a hog as to want more than that! But there are graces and favors which are not coldly calculated: there are smiles and kisses which one cannot command by the sharpness of his nose or by the fullness of his belt-line. They are just pure joy, without price or condition. Such, for instance, will be the glory of California at the inauguration in Washington, next March. For President Wilson has consented to have "I Love You, California," played by the United States marine band in the inaugural parade. The story is that F. G. Kaufman, superintendent of the exposition zoo at San Diego, a short time ago wrote to the President, saying: "Kindly have the band play 'I Love You, California' in the inaugural parade." On Friday last he received a letter thanking him

on behalf of the President for the kind suggestion and asserting that the selection certainly would be played on the day of the inauguration.

Mr. Kaufman's name surely has a hyphenated sound, though he may have been American for generations. If so, he will not be angry if we suggest that the quick accession of the President to his request may be taken as a sign that Mr. Wilson has no such anti-Teutonic prejudice as he is credited with. That, however, is less important, from our point of view, than the fact that a Teuton, more or less remote, should call out to the President of the United States: "I love you, California!" and the President should reply: "I surely do." Music by the band!

CALIFORNIA PEACE DRIVE.

AND now California, having re-seated the peaceful Mr. Wilson, launches a new offensive against the devil of war, which Mr. Wilson is to actuate in the name of the United States. The Californians who are leading in this beneficent project announced at the close of last week that the plan is to present to President Wilson a petition bearing the names of several million Americans urging him to take action looking toward the abridgment of the world war. The leaders assure us that their purpose has already been communicated to England, France, Germany, Austria and to nearly all neutral nations, and that very exceptional information has been received both from Germany and England that the time is rapidly approaching when negotiations may be substituted for armed conflict. They patriotically declare that California has two weeks the start of the rest of the country in pushing this project, and it is desired to send it along with at least half a million California signatures. They intimate that as California has re-made Wilson so she may make world peace through him. Perhaps if they happily settle world-strife they may have courage to tackle Mexico. However, this is the basis upon which the belligerents are expected to accept peace potions:

We, the undersigned citizens of the United States of America, declare our conviction that adequate guarantees against future wars—the avowed aim of both belligerents—can be secured by

1. Repudiation of military conquest as a means of territorial expansion;
2. Recognition of the right of each people to determine its own social, political and economic development;
3. World organization for the development of international co-operation and the settlement of international disputes.

If the warring nations will accept this rational basis for an everlasting peace it will surely be good for the world and good for California as a sponsor for the effort. It is interesting also from an agricultural point of view that Edward Berwick of Monterey, a California farmer, has been a leader in the undertaking. And the importance of our leadership will be widely conceded. It is telegraphed from a meeting of the national committee in New York that "warmest praise was accorded California for the initiative and energy already evidenced. Everyone declared that the splendid work of California would expedite the progress of the movement all over the country."

HANDS OFF OUR MILLIONAIRES!

THAT is our ultimatum to the sovereign States of Kentucky and New York. Before California gets the world's peace finished, she has a little scrapping to do on her own account before such joyful exercise is prohibited. It is this way: About a third of a century ago Kentucky and New York seized upon the persons and property of several California millionaires, carried both away to their respective States, held the persons enchained, by what sorcery we know not, and appropriated their residuary belongings to the adornment of those States with buildings, institutions and what not. Their California possessions, achieved in ways sometimes more or less devious, were sold and the proceeds, blown into blue grass and skyscrapers for the upbuilding of those States, were lost to California. And now comes our reprisal. A contest has arisen between California, New York and Kentucky as to which State shall have the nine millions of inheritance taxes ac-

cruing from the ninety million estate left by the Standard Oil millionaire, L. V. Harkness, who died near Hollister, in this State, eighteen months ago. Kentucky seems to have scored first in a decision by Judge Hudner of Hollister that Mr. Harkness was a citizen of Kentucky, but California and New York kept on and the matter is now in the California Supreme Court on a suit to reverse the decision of Judge Hudner, and it seems likely that California will make good. Since the action by which California accepted \$117,960 as her tax on the part of Mr. Harkness' estate existing in this State, it has been discovered that the decedent on four different occasions made affidavits in New York that, California being his home, the Empire State could not tax him. It is shown also that Mr. Harkness owned for nine years before his death a home in Pasadena, and he paid his last federal income tax of \$180,000 from Hollister, where his daughter, Mrs. A. King Macomber, has a landed estate and residence. It may be all right for distant States to get our millionaires away from us while they live and move and have their being, but when they make investments and live for years in California, and particularly when they are able to put to shame New York tax gatherers by singing: "I love you, California" with one hand on the holy book, we hereby notify all and several of such States that, in the line of their grabbing tithes from estates of Californians as they pass from one heaven to another, there will be strictly nothing doing!

JACK LONDON'S LEGACY.

BETTER though than millions from successful wealth-gatherers is the legacy which California receives in the memory of the late Jack London. It befell this distinguished Californian to be called hence in his prime, but two score years from his birth. As one remembers that he had to give about one score to become a man, it is little short of marvellous what he accomplished with the other. This young Californian, having no advantage of birth or fortune, having in fact during his second score to triumph over errors committed and misfortunes incurred in his first, came in this brief time to be universally recognized as one of the world's great writers—the most widely known and admired Californian of his day. There are many things for which California has to thank him. His love of rural life, which was in him a revelation from nature's heart, for he was city born and bred, and his exaltation of rural life, will long remain a forceful call to the country, which our State development and the quality of our citizenship demand should be loud and clear. His conception of the scope of farming life as determined by effort for the best things in agricultural science and practice will also long remain influential in California's upbuilding. He was at his death just at the beginning of his greatness for himself and his goodness for mankind, but he left a priceless legacy. Though their social philosophies were quite unlike, we count Jack London a partner of that other young man whom we lately lost, Jack Eshelman, who made an enduring inscription of the rights of the common man upon the laws and policies of the State. Both rose from similar strata by the same inherent force of honesty in thought and action and the love of it, though they saw differently the means and ends of human uplift, and both left the State better for their living in it. We have it not in mind to measure the service of either, but as we bid farewell to the self-made farmer of the Valley of the Moon we cannot forget that in his advice to college men, who asked his counsel about essentials to success in writing, he said, among other things, these:

Don't loaf and invite inspiration; light out after it with a club, and if you don't get it then you will get something that looks remarkably like it. And work! Spell it with capital letters. WORK, WORK all the time. Find out about this earth, this universe, this force and matter, and the spirit that glimmers up through force and matter. The three great things are: good health, work, and a philosophy of life. I may add, nay, must add, a fourth—sincerity. Without this the other three are without avail; with it you may cleave to the greatness and sit among the giants.

Be sincere and work! This legacy of Jack London's will gleam in the California morning sky while heaped-up millions vanish in the afterglow.

By
the Editor

QUERIES AND REPLIES

Inquirers Must
Give Full Name
and Address

From Pears to Pears.

To the Editor: I have uprooted four acres of a pear orchard, blowing the stumps out. I have a very heavy soil to handle. Would it be best to lime the holes before filling, or lime the soil used in setting the new trees? My pear orchard was 30 years old, but never bore more than two good crops in nine years, owing, I think, to the heavy character of the soil, which bakes badly and gets hard where it should be loose for the rootlets.—J. M. P., Healdsburg.

You are pretty courageous to plant pears again in a place which has only given you two good crops in nine years. You surely do believe in looking for your money where you lost it. There is something more than the weight of the soil involved. A pear tree should be young and vigorous at 30 years if it is not knocked out by something else than heavy soil. Our judgment would be that that piece of land has had pears enough for the present and we would plant on another piece. We would rip up that old land, plowing in a lot of manure as deeply as we could and sow rye and bur clover. Feed it down during the winter (when the surface is dry enough to carry stock without puddling). Take off the stock in March and let the green stuff grow up, to plow under in April (in your district) and then keep the land in a well-worked summer-fallow until you plow deeply again for next winter's planting. However, if you like your way better, put on about a ton of lime per acre, in the holes and out of them; let it get a lot of rain, plowing in a month or so, filling the holes and planting new trees between the old rows each way. Never put lime or anything else in the fine clean dirt with which you fill around the roots of young trees. Put your medicine on the top afterwards and cultivate it in. Keep on growing green stuff in the winter, after you have spread what manure you can spare, and plowing it all under early in the spring. Such land as you describe must need good farming as much as it needs medicine.

French Pear Stock.

To the Editor: I am sending you the butt and roots of a young Bartlett pear tree supposed to have been budded in the wild pear of France, commonly called "French root." Can you tell me what it is?—W., Walnut Grove.

What is known as "French stock" for pears consists of pear seedlings, grown and graded in France and largely used in this country because they can be had of uniform size and quality more cheaply than they can be grown in this country. They are not supposed to be from a "French wild pear," but from any cultivated pear which makes plenty of plump seeds, easily to be had in quantity.

The specimen dead tree which you send has probably such a root. The peculiar appearance of the rooting of the tree is due to the fact that it was planted from four to six inches too deep and has been trying to live by sending out a new system of roots near the ground surface. These come from the Bartlett above the budding point and were probably induced by the fact that the old root was rendered inactive by too deep planting. Without knowing more about the soil and moisture conditions under which it was growing, it is impossible to decide why the effort the tree has made to get on its own roots did not succeed.

The Time to Spray.

To the Editor: Is this the right time of the year to spray fruit trees? Would it not be better to spray after the heavy rains?—H., San Francisco.

The time to spray depends not at all upon the calendar and very little on the rains. As a rule you cannot wait for the rains to be over because of the likelihood that the trees will start growth and make some kinds of sprays destructive to the tree or to its blossoms, or that the pest be too far advanced in its work to head it off. On the other hand, some kinds of spraying can only be effectively done during the growing season. For these reasons, there can be no right time to spray all kinds of fruit trees for all kinds of pests. The grower has to know what pest he sprays for and

the best time to hit it. This will differ on different kinds of fruits and on different kinds of pests on the same fruit. You may be able to hit several pests with the same spray, but you cannot hit all the pests with one spray material nor at one date. Our "Second Thousand Answered Questions in Agriculture" gives full details of sprays and the times to use them for particular pests. Also, nearly every issue of this journal contains hints of treatments for some particular pest. The successful grower has to master all these details: learn to recognize symptoms and apply remedies like a wise doctor. There is no panacea for either pests or people.

How He Killed Bermuda Grass.

To the Editor: I have six acres on which I killed the Bermuda grass, and I have plowed five acres more of it about a month ago. I want to kill the grass this winter by plowing under deep. Will Bermuda come up if it is plowed under about five inches? I will state how I killed my Bermuda grass the first year. I plowed and sowed barley. Right after the barley was harvested, I plowed shallow, about 2½ inches, and let it dry out about three weeks. Then I plowed again a little deeper. I plowed four times with a J. D. Case sulky plow, 16 inches with a rolling cutter.—H. G. N., Dinuba.

If we had ever killed Bermuda in a year in one way we should be so glad that we would keep right on in the same way, and never ask for another. The reason you did so well was that you dried out the land with the barley, and then you smothered the Bermuda by cutting it to pieces and burying it when it needed light to strengthen itself. You cannot do that in the winter because the plant will not try to grow, but will keep life in the roots until the ground gets warm enough to start growth. The more you cut of the roots the more plants you will have. We do not know how deep you will have to cover the roots to kill them, but five inches will only be a good planting depth for them. We should put on barley now and then tackle the summer treatment of the land just as you did before.

Trees After Vines.

To the Editor: I have an old Zinfandel vineyard where I dug out the vines three years ago and put some Philips cling peach trees in the holes where the pines had stood. The trees do not do well. They shed their leaves in the summer and start to grow later in the fall around the crown. Of course the tops grew all summer. Is that on account of the grape roots in the ground? A few of the trees died. I dug them out and the roots seem to be all right.—E. P., Kingsburg.

Trees have followed vines so frequently in the course of California fruit growing without complaint of poison in the remains of the vines, that we are inclined to think you must find the troubles of the peaches in some other condition. Were the old vines thrifty, showing that the soil suited them? If not, the trees are probably up against the same trouble. Even if the vines were thrifty, we believe you must account for the behavior of the trees on the ground of irregular moisture supply, presence of alkali or some other condition inhospitable to peaches.

Getting Back to the Apple Box.

To the Editor: I notice your inquiry in the issue of Nov. 11: "Who invented the apple box?" In the early '50's a man named Bellinger, who lived near Jefferson, Marion county, Oregon, bought nearly all the apples raised in that part of the country, and hauled them overland to the mines in California. He paid as high as \$5 per bushel for the best apples, and tried to make a box that would hold a bushel of apples. Whether Mr. Bellinger was the first man who used the apple box or not, I do not know.—Geo. M. Frazer, Glen Frazer, Contra Costa.

This is a good start toward the beginning. Whose memory is just a little longer?

Time for Vine Pruning.

To the Editor: Which is the best time to prune grape vines? Is it too early now, or would it be better to wait?—F., Pleyto.

The best time to prune for the conservation of strength in the roots, for a vigorous growth of the following summer's top, is soon after the leaves have fallen. If the canes are bare it does not seem to make much difference in vigor later whether the pruning is done from now until some time in January. In frosty places it may be safer to prune later, say in March or April, because pruning then, even when the buds are swelling, delays new growth from the spurs which are retained and thus may bring them into spring frost with no new growth to be killed. For convenience in dangerous places it is a good plan to slash off the tops of the canes a foot or two from the stump for convenience in cleaning up and working the ground and then prune back to the proper point, say in April, as the outer buds are swelling.

Sawdust for Smudging.

To the Editor: I am wondering whether in smudging fruit trees, wood or sawdust is sometimes used, with the crude oil, at such points as the wood would be much cheaper than to haul in the crude oil. It occurs to me that sawdust would be more apt to smudge than wood, be easier to handle, though it might require an extension to the commonly used pots.—E. G., Berkeley.

Smudging to prevent frost is a very old horticultural art, though given new importance and practicality in California. Damp sawdust has been used from the beginning, and later a mixture of one part coal tar to two parts of sawdust was used to some extent. California experience has shown that nothing else available produces smoke with such quickness and volume as crude oil, and all recent effort, so far as we know, has been concentrated on appliances for burning it to best advantage and organization of growers to secure best results from its burning.

Re-Seeding Alfalfa.

To the Editor: We have some alfalfa to re-seed; will it be better to do it this or next month, or to do it in the spring? What month is best to sow or re-seed alfalfa? Is it advisable to disk the old stand, and then sow over the top again?—H., Angels.

Unless you have a place where alfalfa keeps growing in December and January, it is not wise to seed or reseed as late as this. Fall sowing should be early enough to allow the seedling to get several pairs of leaves before sharp frosts come. If you cannot do this, do not sow in the fall. Taking the State as a whole, the average date or month in which most alfalfa is sown is February, unless it is an unusually cold season. But this is too early in many places. March is better, or even April, on low, wet soils. Disk the old stand with disks set pretty straight, and sow—following with a light brush.

Exchanging Seed Grain.

To the Editor: Is it better to sow the seed grain that one raises, or is it better to exchange seed with some one in the neighborhood?—H., Angel's Camp.

There is no possible advantage to you in changing unless your neighbor has a better kind, or a plumper seed of the same kind. There is no benefit in merely changing. In fact, if you have a particularly good sample grown on your own soil it would be risky to change. The old idea of changing simply on the fact of difference in conditions is exploded. You would not gain anything in swapping breakfasts with your neighbor, unless he is a better provider and his wife is a better cook. If you get ham and eggs and coffee instead of flapjacks and mud, you will gain that much. It is the same way with seed grain.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., November 28, 1916.

STATIONS	Past Week	Rainfall Data		Temperature Data	
		Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka	1.84	5.27	9.10	56	38
Red Bluff .....	.98	4.61	5.30	60	32
Sacramento .....	.40	1.48	3.38	62	36
San Francisco .....	.76	3.58	3.85	60	44
San Jose .....	.04	2.03	3.00	62	32
Fresno .....	.01	1.89	1.95	66	36
Independence .....	.08	1.13	1.90	60	..
San Luis Obispo .....	.00	4.14	3.40	70	32
Los Angeles .....	.00	3.56	2.17	78	42
San Diego .....	.00	1.19	1.29	66	44

Dormant Deciduous Spraying.

[Written for Pacific Rural Press.]

"Don't spray unless you have something to spray for; but be sure you know what diseases and insects your trees are heir to, and then spray properly in time to prevent troubles becoming serious," is the advice of leading horticulturists.

There is no practical way of knowing whether certain diseases exist in your orchard, except by previous history. If they are there, you cannot know it by the usual examinations, until they have gone beyond control for the season. They will then do their damage in spite of you, provided the climate does not interfere.

A sick tree is worse than a sick man in your employ. You have to pay the tree as much in the form of fertilizer, pruning, rent for the land it occupies, etc., as if it were thrifty. You could replace your sick man with a well one and keep on making profit. A sick man may be doctored at once, but a sick tree does not become profitable for at least a year.

Our first exhortation, then, is to learn the appearance of impending diseases and insects, the specific

remedies, and the times to apply them. Then you will know what diseases you must treat while they are yet invisible. You will be able to identify the visible insects and diseases, and treat them at the proper time. So our second exhortation would be to inspect the orchard minutely with a magnifying glass, and frequently. For the spraying of the coming months until the buds begin to swell, there are only a few generally serious troubles, and fewer remedies.

San Jose Scale doesn't worry those who are prepared for it; but there is a pretty general infestation by this pest of practically all kinds of fruit trees all over the State, except in limited districts such as Santa Clara county, where Horticultural Commissioner Earl Morris says there is practically none. It kills tree branches and marks fruit with red rings. Lime-sulphur applied any time while trees are dormant is generally conceded to be the most effective control.

The Brown Apricot Scale is perhaps next most widely distributed on many kinds of deciduous fruit trees. Crude oil emulsion is most effective on these and the cheapest spray to use. Santa Clara has plenty of these scales, but many growers figure on natural parasites keeping them controlled. The result is often a bad infestation causing a lot of sticky, dirty fruit and trees that are weakened so that the tops die back and the prunes drop before maturity.

Moss and Lichens on the trees sap their strength some, but their great damage is due to the shelter they afford everything else that infests fruit trees.

Italian Pear Scale.—One of the commonest and most serious because most insidious scales in the Bay counties is the Italian pear scale which breeds and piles up many-deep under the moss. Crude oil emulsion is a satisfactory control if the moss and lichens are thoroughly soaked to their roots. For apple and pear trees, lime-sulphur is used largely; while crude oil is used on the others, and on the pears also of the Sacramento River district.

Oystershell Scale is general all over the State, but winter spraying with lime-sulphur or crude oil emulsion controls this along with other pests, so it is not much feared. If allowed to plaster small limbs, it often kills them. A serious infestation on pears was recently reported from Solano county.

Black Scales infest many kinds of trees, but are most troublesome on citrus and olive. In certain Coast districts, they are the worst insect on the apricot. Fumigation or distillate sprays seem most effective here. In Ventura county, the general practice is to use distillate and caustic soda mechanical mixtures with water. In Sacramento county, insects liberated by the State Insectary seem to have cleaned up a serious infestation in the Fair Oaks district; for last year it was bad, but the trees are now clean.

Most Aphids and Mites winter over in the form of eggs on the trees; and if these are generally killed, there can be only a light in-

festation in the early part of next season. Lime-sulphur, crude oil emulsion, and miscible distillates are used for these, the latter being considered most effective on account of their greater penetration. Among common serious aphids that can be controlled principally by such sprays applied in winter are those that infest walnuts, mealy plum-lice, green and rosy apple aphids, black cherry aphids, green peach aphids, and brown mites of almonds, prunes, etc. Careful inspection of buds and other rough places on the bark is necessary to find these or their eggs; and most of them are commercially uncontrollable if not killed before they have been at work many days in spring. Many of them curl leaves over themselves for protection from sprays.

Fungous Diseases.—Hardest to find, however, are the over-wintering spores of fungous diseases. Chief of these is the shothole which attacks many kinds of fruit, killing even fruit buds, spurs, and twigs; and is most dreaded on the peach where it is called "blight." Its damage next year can practically always be prevented by Bordeaux or lime-sulphur spraying before Dec. 15 and lime-sulphur spraying just before the buds open. Shothole on almonds and apricots is sometimes sufficiently controlled with one lime-sulphur spraying in spring when the buds are swelling. Such a spraying on peaches also controls worms, and the curl-leaf which alarms so many people when it is too late to avoid. But since the shothole works in wet weather, there is always danger that it will penetrate buds before the spring spraying, which cannot then save the buds. Apple scab winters over on trees and leaves so that early spring plowing and winter application of lime sulphur or application of Bordeaux as buds are swelling are desirable; and with certain varieties, very necessary, since as soon as one knows whether the weather will encourage it, there is no remedy.

Crude Oil Sprays.—Several forms of oil sprays are used. The commonest and cheapest are crude oils from which the gasoline and kerosene have been distilled. They have very little penetrating power and their killing is supposed to be due to clogging of their pores and suffocation by the varnish-like residue left when the moisture has evaporated from the emulsion. Natural crude oils contain varying percentages of gasoline and kerosene, though that from each well may be practically constant. Sprays made from them kill not only by penetration and the fumes from the lighter oils, but also by the suffocating varnish which continues to work after the water evaporates, and which resists weather more than a year.

Distillates penetrate quickly, forcefully, and dangerously unless certain precautions are taken. They evaporate quickly and do not leave the varnish residue. For this reason, they are almost entirely used on olive, citrus, and other evergreen trees. State Horticultural Commissioner G. H. Hecke tells us of olive trees whose leaves have turned yellow and dropped because of the varnish left by crude oils which plugged the leaf pores.

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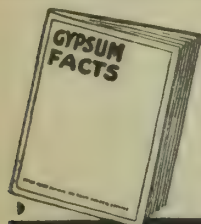
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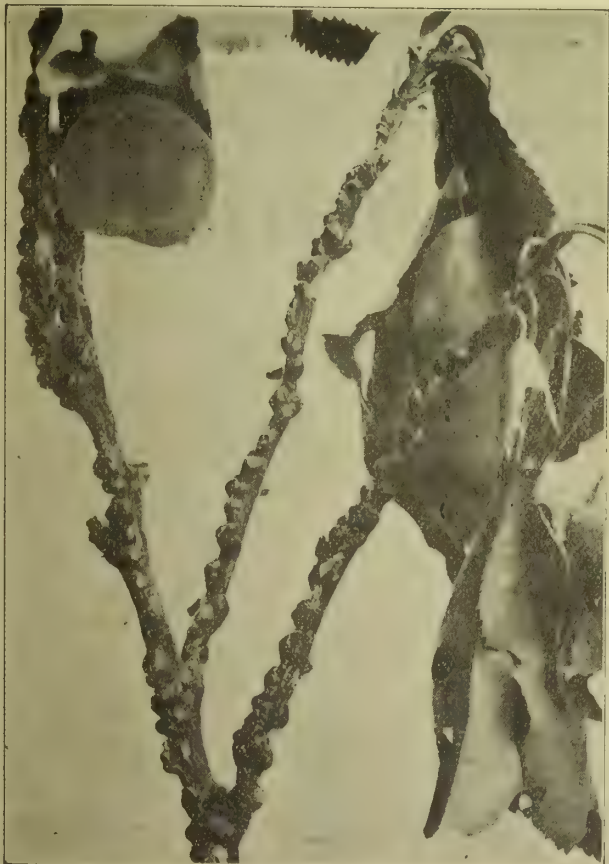
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more important than the amount of oil. Surely avoid all spraying with oil sprays and to a great extent with soaps when trees are suffering from lack of water," says Prof. C. W. Woodworth of the University of California. Moisture in the bark prevents penetration of the spray, but permits the insects to be killed. Prof. Woodworth has poured pure kerosene on rose leaves with no damage, when they were full of water and the dew was on. This is not recommended, however. The water in the tree or bush must have come principally from the soil; atmospheric humidity will have little effect, according to the Professor. If the wood cells are turgid, oil will not be absorbed; if they are shrinking, oil is likely to be drawn into the cells and kill them, according to Earl Morris.

Oil Sprays may be bought in three forms: emulsions ready prepared, miscible oils, and pure oil of the various kinds to be emulsified at home or applied in a mechanical and

But the emulsion which is made from miscible oils by addition of water, is in a more finely divided form, probably molecular; while in a regular emulsion the particles of oil surrounded by the emulsifier are larger.

Mechanical mixtures of oils are safe only when trees are well supplied with inside moisture, and when the oil is kept violently stirred all during application. If the agitator and pump are stopped for a short time, the oil separates and is likely to be too strong when spraying is resumed. Damage has resulted from separation of the oil and water in the hose which was not emptied back into the tank when spraying stopped. Horticultural Commissioner A. A. Brock of Ventura county has noted cases where oil accumulated around the bases of deciduous trees making a moist decay of the bark, which peels off. Mr. Morrison prefers emulsions at the additional cost for soap because more damage may occur due to slight



European Fruit Lecanium. Damages Many Fruits, but Especially Bad on Apricots and Prunes. Saps the Twigs and Covers Leaves and Fruits with Sticky Black Honeydew. (Photo by State Hort. Com.)

very unstable mixture unsafe if trees have been dried out by lack of fall irrigation or by dry winds.

Prepared emulsions are ready to dilute with water for the spray. So are miscible oils, which are distillates with the emulsifier dissolved in them much like sugar dissolves in water, but there is a minimum of water in miscible oils. They are hard to make because each oil must have its own proportion of emulsifier.

carelessness with mechanical mixtures, than the soap would cost for emulsions.

Lime-sulphur.—Though lime-sulphur may be made at home, the danger of wrong proportions, poor mixture, and sediment which clogs the nozzles makes it generally much more desirable to buy the commercial concentrated spray which is ready for dilution with water according to directions.

OLIVE PICKING SACK.

[Written for Pacific Rural Press.]

To use both hands picking olives, G. L. Camden of the Fair Oaks district of Sacramento county sewed to the lower edges of an old vest, canvas bag pockets holding about 15 pounds each. They hang at the right height for convenience in putting the olives in as each handful is picked. To empty them easily the bottom of one is closed with a pucker string, which seems more convenient than the hooks which hold the bottom of the other.

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Orchard Cover Crops and Irrigation.

To the Editor: On the editorial page of the Nov. 11 Pacific Rural Press you quote from University Bulletin No. 270 about cover crops at the University Farm. I am inclined to doubt the wisdom of circulating a bulletin of this kind, and of creating the impression that you do in your editorial. While the bulletin may be technically correct (which from my own experience I doubt), it is doing an immense amount of damage by simply disposing of the whole cover crop matter without any qualifications.

There are a great many, in fact the majority, of the fruit growers in the deciduous districts of California who have not yet realized the absolute necessity of growing a cover-crop in the orchard, and to all those who read your article or the bulletin No. 270 it is putting the seal of approval on not making every effort to restore humus and nitrogen to a soil worn out by years of grain growing, followed by another long term of fruit growing.

I have tried cover crops in my orchard for the past three years and can see a great change taking place in many ways, especially in the ease with which the soil can be worked as compared with its condition before cover crops were grown.

I am quite sure that the full benefit of the cover crop is not realized (in some instances) on account of having to plow it under in the spring before it has reached the proper stage of maturity. However I dislike very much to have the whole thing condemned because we are not able to get the maximum benefits.

I hope before long to be able to make some demonstrations that will convince the most skeptical, along the line of irrigating the cover crop in the spring and early summer and not plowing until the crop is in the right stage. I believe that the prune should be irrigated during its growing period in California just the same as it would in any other arid climate in the world.

There is no reason why a prune that is ripened with the proper amount of moisture in the ground and vitality in the tree should not dry better than one that is forced to ripen by a lack of those elements.

There is no place else that water for irrigation could be had, that it would not be used, and I can see no reason why California should be any exception. There are very few orchards of old prune trees that do not show distress about the time the fruit begins to ripen, and why this

should be allowed to famish year after year is more than I can understand. Geo. Hollenbeck. Gilroy.

[We are very glad that you read just enough of our editorial comments to cause you to light your fuse and not enough to show you that you might have saved the bomb. Such a punch as you give the subject will serve excellently to wake up other readers to more careful consideration. The discussion was of cover crops for grain and not at all for orchards or other uses which involve other economic considerations. In the editorial to which you allude this paragraph occurs:

Of course the reader must not conclude from these results that the soil does not need added nitrogen nor that rotation is irrational, but they must be provided for upon some other economic basis. There is also no arraignment of the value of cover crops when measured in other terms than those of a grain crop when the whole cost of cover-cropping is charged to it.

This, it seems to us, is clear enough warning that the fact that a grain crop will not return the cost of a cover crop (when the whole cost of it has to be charged to the grain) does not apply at all to cover crops for horticultural purposes. But we are glad that you stir up the subject just as you do. It will call new attention to the dozens of pages of demonstration and exhortation which we have printed during the last few months in favor of cover cropping when the use made of the land warrants it.

We agree fully with you about the quality of prunes and other deciduous fruits as dependent upon adequate moisture. You cannot get good fruit without that and if the soil does not naturally afford it it must come by irrigation. Your experiments to determine at what time and in what condition a cover crop should be turned under and the use of irrigation to secure that condition, will be very important.—Editor.]

Perfect Sidehill Irrigation.

[Written for Pacific Rural Press.]

A unique orchard of 1200 acres is planted on the red-brown loam hills between La Habra and Fullerton, Orange county, where only sheep found pasture in the early days. Practically no dirt was moved, no terracing done, yet the irrigation system on these sidehills, mesas, and "canyons" is under the most perfect control.

When the elder Bastanchury used some of his sheep money to educate his four sons, he little dreamed that their engineering ability would cover those hills with walnuts, Valencias and Eurekas, the very foundation of whose success lies in thorough control of water.

Over 150,000 feet of cement pipe-lines 6 to 14 inches in diameter cover the place, but none are run on contours. A 250,000 gallon steel tank crowns a hill above all the trees. It is supplied directly or indirectly by several electric pumping plants capable of watering 2000 acres. Being scattered about the ranch, the pumps are ordinarily used

directly for the nearest orchards, but any lull in irrigation permits them to refill the main and subsidiary reservoirs. One man does nothing but watch the pumps.

In laying out the pipe line, Gaston Bastanchury, president of the company, which includes three of the brothers, had and has direct charge of the engineering since the work and planting started 6 years ago. Pipe laying and planting were still going on when the place was visited in September, and some 800 acres more are to be developed. Planting is done any time between Feb. 15 and Dec. 15.

The ranch covers several hills or ridges, on the sloping sides of which are other minor ridges. These were not leveled or terraced, because of danger of washing the loose dirt in winter, and because trees planted on the scraped-off spots do not catch up with the rest, according to Mr. Bastanchury, who tried it out early in the game. Steepness of the hills gives a maximum of the very essen-

tial air and water drainage and allows percolation of water from the single furrow per row thus needed in irrigation.

Water from the reservoirs and pumping plants is gravitated or forced to all high points where standpipes are located. From these, lateral pipe lines are run directly down the crests of all side-hill ridges, so they may irrigate both directions from small standpipes located at the right distances for the tree rows. Zigzag furrows, contours, or other devices are used to control the water between each standpipe and the bottom of the ridge. Smaller streams are of course turned on for the steeper grades. Once adjusted, the water often runs all night without attention.

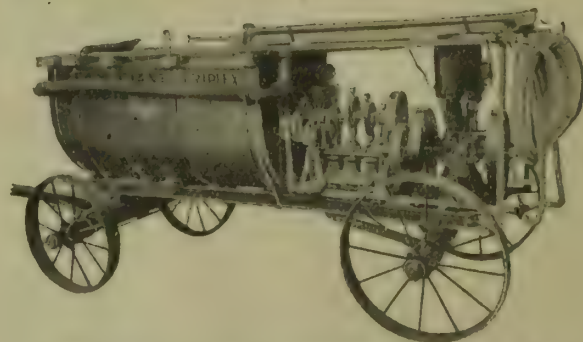
Amount of Water Controlled.—The amount of water to flow into each lateral pipe line depends on its length, grade, season of year, number of trees on its sidehill, and kind of soil. In laying out the system, the engineers figured this out to a fraction of a miner's inch, though of course seasonal variations must be determined currently.

Weirs.—The irrigators regulate the amount of water into each lateral by means of valves and a weir in the

standpipe at the head of each lateral. The weir is a cement partition across the center of the standpipe, high enough so the water runs evenly over it at a depth which can be measured with a rule. Water enters the standpipe on one side of the weir and runs into laterals from the other side. Standpipes in the laterals have closed tops so water cannot run out of the lower one any faster than its little gates permit, and it must run an even stream out of the upper ones. Gate valves in the higher standpipes must be opened wider than in lower standpipes where the pressure is much greater. The system has been used without a disappointment all this summer.

Tree Locating and Planting.—Having plowed the land, surveyed it, and located stakes and pipe-lines and standpipes at proper distances for irrigating every row and every tree, the planting crew of about 30 men gets busy. The stakes have been located on contours for most convenient irrigation from each standpipe through a furrow above the tree row. In determining steepness of the contour grade, the percolation character of the soil is the prime consideration in connection with the

Economical!



The BEAN is an economical sprayer. It will do more work, cover more ground, and spray more trees in a given time than any other sprayer of approximately the same size and horse-power. This holds true for all

BEAN Power Sprayers

The chief difference between the various Bean outfits is in size and capacity. BEAN economy is the result of —BEAN PATENTED PRESSURE REGULATOR, which saves one-third the gasoline and wear and tear on engine and pump. When spraying the overflow simply runs back into the tank under no pressure (not through a safety valve under full pressure), as in all other types of control. When not spraying the engine runs free. —BEAN PUMP WITHOUT STUFFING-BOX. This pump is made with molded cup-shaped plunger and on the upstroke when there is no pressure there is no friction. Power saved is money saved. —UNDERNEATH SUCTION, which enables pump to throw considerable more liquid with same power. —DIRECT CONNECTED ENGINE AND PUMP, which eliminates the loss of power that results from the use of a belt.

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amount of water that is to flow from each standpipe. The grade must be less steep for porous soils and large streams, also for tight soils where small streams are to be used; but need to be steeper for porous soils where small streams are to be used. Such a case would be a short side hill where water is to be run all night without attention. The stakes are set by means of a level-board 24 feet long.

With stakes set a furrow is run where the trees are to go, water is run through to put the soil in good condition to pack around the balled citrus roots without drying them out, the trees are planted within a few days, and irrigated to settle the dirt about them.

All trees are balled. The loss with naked roots proved too great.

One man with plenty of helpers does nothing but ride over the place, noting any trees that lack vigor, or need attention for any other reason, and seeing that such attention is given. One man does nothing but trap gophers, which, however, are getting scarce now.

OLD APRICOT ORCHARD RE-NEWED.

The old apricot orchard was getting in rather bad shape and wasn't bearing much. The trees had come to that stage where they would not send out new growth. The sap channels seemed to be clogged. They were pretty well covered with moss and fungus. Ordinary pruning did not induce enough new spur growth to develop good fruit buds. But the trunks and roots seemed healthy.

This was a block of Royals and Blenheims on the ranch owned by the Central Nurseries Co. in San Joaquin county. They now have a beautiful new bearing orchard on the same trunks. Three years ago, half of the old trees were cut back severely, leaving only two or three feet of the main limbs. Next year the other half was cut back. Stubs were left three to five inches in diameter, but were painted over the top. Since then, the weather has checked them so the paint is of no value in preventing entrance of decay fungi.

Some of the stubs extend as much as five inches above the sprouts and will doubtless be cut off soon; for they threaten the strength of the new growth when it shall have a heavy crop. They were cut off square. The new growth is not covering most of them very well, for much of it comes from buds some distance below the cuts. The stubs will probably be cut off slanting upward to the crotches formed by the sprouts, to enable new growth to cover them quickly.

Heavy Crop Set.—The new growth was thinned out this season in June, but not cut back at all. It had been covered with blossoms and set a heavy crop last spring, though the rains rotted the young fruit so there was only a quarter-crop.

The idea of cutting the trees back was suggested by a trip to Folsom vicinity, where is an old orchard renewed twice by this means. The owners are highly pleased with the project.

A San Joaquin winery bought approximately 40,000 tons of grapes from the Lodi section this season. The growers have averaged \$12 a ton for their grapes.

Roeding's Page

Apricots

ON TREES

AS A commercial proposition, California has practically a monopoly in apricot culture, as no other section of the Union produces the apricot in quantities at so small an expense and so little risk of failure in crops.

A PROFITABLE CROP

Now that the California Prune and Apricot Growers are forming an organization along the lines already proven so successful by the Raisin Association and the Peach Growers, there should be no question about future prices. In fact, the question of profit on apricots may well be considered settled. Prices for the dried fruit this year have been very high and a handsome return has been made to the grower. If the new organization can be effected, there is no doubt but what profitable returns can be obtained for the apricot growers each season.

DRYING AND CANNING

In appearance the apricot is perhaps the handsomest of all stone fruits and contains less acid. For canning, evaporating and drying purposes, as well as for use in the fresh state, the fruit can hardly be excelled. It seems particularly adapted to the Coast counties,

where the fruit attains the largest size and the highest flavor. In the interior valleys it has the distinct advantage in that it ripens its fruits fully a month earlier than in the cooler sections of the state.

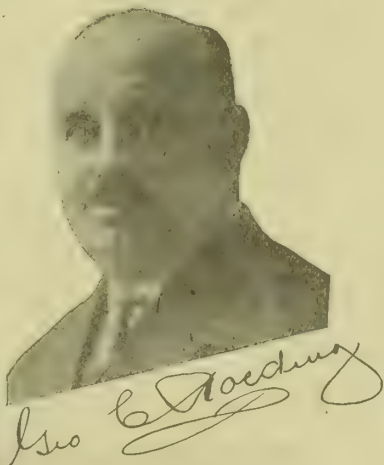
VARIETIES TO PLANT

Owing to the success with which the apricot can be budded on dif-

ferent stocks, it adapts itself to a wide range in the matter of soil, moisture and climate. Apricot trees are mostly budded on apricot and myrobalan plum roots. Apricots on almond should never be planted, as there is no affinity between the two stocks and the trees will break off at the bud even when several inches in diameter. The apricot is well adapted to a light, well-drained, warm, sandy soil, and it has the natural tendency to develop a sturdy, magnificent, fruitful tree. The Myrobalan root withstands a surplus of moisture, is rather free from sour sap, has a tendency to cause trees to be longer lived, adapts itself to moist and very heavy soils.

HOW TO PRUNE

In "Roeding's Practical Planters' Guide" will be found many details on planting and pruning that space will not permit of mentioning here. This booklet also contains information on peaches and other fruits, and we will be glad to send a copy to any grower or prospective grower, free, upon request if you mention this advertisement.



True Trees

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—True to Quality

—True to the Reputation of Character and Reliability Built up by 33 years of Fair Dealing

Apricot Trees

for Money Making

We have for this season a splendid stock of apricots in all the best varieties. Quotations will gladly be given on request.

OLIVES

It is a well known fact that these nurseries have for years excelled in the growing of olive trees. It will be to your interest to consult us fully before placing your order.

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Our big illustrated catalog for 1917 is nearly ready. If you wish a copy send us your name and address today.

Citrus Trees

Growers of citrus fruits have certainly harvested nice profits the past season and indications point to even greater profits in the future. The demand for California oranges and lemons is constantly increasing—but this applies particularly to the fancy packs.

Make sure that the fruit you send to market will be the finest that can be grown, and thereby assure yourself of topnotch profits. We have a splendid stock of oranges, lemons, pomelos, and other citrus fruits, and our trees are the best that can be grown.

Fancher Creek Nurseries

Geo. C. Roeding
President & Manager

425 Holland Bldg.
Fresno, Cal.

Mr. Etter's Work with Apples.

To the Editor: Making good my promise, I am sending you another bunch of my new varieties of apples grown from selected seed. I am not saying much about these varieties yet, because they are too new and untried. Still, it might be as well for those interested to prepare for many new varieties of new and striking characters. I see that the publication of my personal note to you, in your issue of October 7, has aroused an interest in this branch of my plant-breeding work. This work has been under way for many years in a preliminary way, and now all is ready to try out thousands of seedlings. I will not say just how many, because I do not know. But, if facts uncovered as the work progresses justify it, there is ample room and facilities to try out several hundred thousand varieties in the next twenty years. Results obtained so far more than justify my plans for the future, which are to make haste slowly, and sell guaranteed stock under a registered or copyright label.

If I had my way about it, I would say: I am "just stumbling along as usual," as I said last spring about my strawberry-breeding methods. But one of your subscribers who is making a big success of Ettersburg No. 80 strawberries received through the Pacific Rural Press, wrote me that I was careless; that if my No. 80 was a fair sample of my output, I had a better system than the professors. So I will be more careful this time.

When I had figured out the lines of desirable variation in the dahlia species, as a boy of eighteen, I dreamed of taking up the apple trail. The best horticulturist I knew in that day, an old gray-bearded man, after listening to my dream frankly told me to forget it. The idea of trying to do that which trained men, with all the recorded knowledge of the world on the subject, could not do, or they would have done it long ago!

But I could not forget it. As I remember, I kept thinking of it until I reached the conclusion that the apple varieties we have at this late day are a harum-scarum lot, to make the most of it, to represent possibly 4000 years of human endeavor. What is more and worse, as apple breeders, we are making little progress.

Improvements we need in the apple are: Strictly high-class canning varieties; varieties which are firm, crisp and solid, and which will hold that crispness and juiciness for weeks after they are picked. Those essentials, combined with brisk acidity and high sugar content, making a flavor of great volume, I already have.

I am satisfied I can produce varieties with these desirable features with a thousand and one variations.

We need varieties that have an "ossified" suture instead of an open one, so the fruit will not drop, but remain on the tree until picked.

We want varieties that are contented to set only one or two in a place instead of four or five. And we want varieties that are immune, or nearly so, to the scab fungus. All these desirable features are close in to where I am working now, and can be obtained.

I have surveyed my ground by fruiting out nearly 600 named varieties of American and European origin. There are just a very few good varieties among them, but there are some good characters among inferior varieties.

I have good climatic conditions to work under, abundant stock to top-work the seedlings on, and presumably about 40 years to work yet. Maybe I will get old and lazy before that, but I despise a man who is looking for an easy row.

Albert F. Etter.

Ettersburg, Humboldt county.

[Mr. Etter's seedlings which we have examined with much interest

and have kept on exhibition in our office since their arrival, certainly justify much more than he claims to have attained in his sketch of his preparatory work. They have very striking and novel characters, external and internal. In our judgment he has already attained things which generations of apple-growing have not developed. We are glad to put on record this early record of his work which will some day be looked upon as of great historic interest.—Eds.]

TRAINING YOUNG CHERRY TREES.

[Written for Pacific Rural Press.]

We recently saw a large orchard of cherry trees whose six-inch trunks two feet high were denuded of bark on the southwest side by sunburn. This will not happen to a thousand Chapman and Burbank cherry trees six years old trained from infancy by the hand of E. H. Goepfert of the Vacaville district. They are beautifully symmetrical, presenting a solid wall of foliage outside, rather open centers, but with enough growth inside to prevent sunburn.

No Sunburn.—Not a tree of the thousand shows a sign of sunburn, though no kind of artificial protectors have been used. This is due to low heading and encouragement of leaf growth from the ground up. The trees were headed five to 10 inches high. This also affords a better spread of the main limbs. Some were headed higher because always a strong bud securely fast to the tree should be left just below the cut and on the windward side where convenient. Workmen handling trees often loosen buds or break them off.

One tree we noticed had a bad crotch close to the ground, but this had been remedied by spring pinching; and we were assured that within two years more, the crotched trunk would be solidly grown over.

The Pinching is simply removal of the terminal bud not later than May. This causes the shoot to throw out two or three laterals not very close together. Pinching in July or August would cause a lot of weak shoots to come from the end and severely check the tree's growth. The May pinching was practiced in the first three years. Where over-vigorous shoots came, they were pinched late in summer to set them back even with the rest. This has to be done more especially on the lee side; for the tendency is always to

overbalance in that direction.

The winter pruning has consisted in cutting back half of the new growth and thinning to two shoots on each branch, regardless of vigor which was regulated by the summer pinching. In the fifth year the tendency was to throw more spurs and less wood, but all spurs were cut off last winter. The aim is to build the trees strong enough to hold the heavy load of fruit which they will have two years hence. This winter, having made six years' growth, the spurs will be left, but not many of them have the plump buds which portend fruit next season. These spurs, however, extend almost to the ground, and their bunches of leaves will do much to protect the bark. Two or three leaders on each branch

Coates French Prune Trees



We have the stock, first-class in every way, grown on new land far removed from any orchards. No root knot or any other disease.

PLEASE NOTE THAT

Our Coates French Prunes are making good. Orchards are in bearing, and the fruit comes true to type and size. Full line of all other stock, including ornamentals in great variety. Landscape gardeners should write for list.

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Leonard Coates Nursery Co.

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"Over 25 Years Experience back of every Tree, Vine, and Shrub that we sell."

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For over a quarter of a century we have studied and produced nursery stock, taking particular pains to secure only the very best qualities.

This means that you can place your confidence in us and order freely with the knowledge that what we send you will give entire satisfaction.

We have sold nursery stock to hundreds, and have never failed to supply stock that produced generously and stock that was free from disease and insect pests.

In our experience and in our service you can place implicit confidence, for we know that whatever we sell you will grow sturdy, and that you will receive the kind of crop that you anticipated—and in generous quantities.

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FRESNO, CALIF. P.O. BOX 615



will again be left this season and no effort will be made to keep the tree top down. The leaders will not be cut back.

Always in cutting back, an outside bud was left at the top, for the upright cherry growth is better spread out for enough sun to encourage inside growth. This, in addition to the branches which are left thick enough to protect their inner sides from sunburn when weight of fruit spreads them, protects the trees. Spreading in this case is also desirable because the trees are 30 feet apart. Twenty-five feet is plenty, however, according to Mr. Goepfert.

Sprouting from most of the trunks on the southwest side are shoots which not only shade the trees but will also produce fruit. In the winter pruning they are cut back to one bud or two. These are not hard to obtain in the early life of the tree but are almost unobtainable later on, so the importance of early training can scarcely be overemphasized.

ASPHALTUM FOR BIG PRUNING CUTS.

[Written for Pacific Rural Press.]

Grade D asphaltum used on big wounds made in pruning does not permit cracks to open and receive the spores of decay, in the experience of W. H. Lyons of San Joaquin county and A. G. Tucker of the Vacaville district.

"It is the best kind of dope, beats any kind of paint," says Mr. Tucker, whose applications of a year ago are still intact with new bark growing over the edges. "But too hard a grade of asphaltum may burn the bark as it did some scions for me. Too high a temperature is required to melt it."

Mr. Lyons had some in September which had stayed perfect two years; and it is the boast of his son F. F. that there is no rotten wood in the orchard. The asphaltum is applied hot, as soon as the pruning wound is dried off. Mr. Lyon aims to go over all cuts each fall with fresh applications.

In summer if the wood checks at all the asphaltum runs down into the cracks; but there is always enough left to keep the stub sealed.

COMMISSION MERCHANT LAW MUCH NEEDED.

To the Editor: Read this statement received by a member of the Coombsville Farm Center and tell your neighbors what you think. Here it is:

San Francisco, Cal.,
November 14, 1916.

Mr.
Napa, Cal.
August 14:
15 boxes pears—
3 at 40c\$1.20
4 at 30c1.20
8 lost.
Total receipts\$2.40
Charges:
Freight\$1.00
Cartage52
Commission24
Total\$1.76
Net proceeds 64c.

We wonder why it was necessary for this commission merchant to wait four months before sending our friend the 64c. He might just as well have reported 15 boxes lost in place of 8. The prices he reports are eye-openers. Just imagine, if you live in the city you can go to this man and buy a 50-pound box of good Napa Valley pears at 30 and 40c a box. The poor people of San Fran-

cisco must be delighted with his presence. We wonder where the boxes that were lost are now traveling.

But what about our Coombsville friend—he pruned, sprayed and cultivated his trees. He bought shipping boxes, picked the fruit carefully, packed it so that it might reach the consumer in the best possible condition, expecting to get paid for his labor.

After patiently waiting four long months he received sixty-four cents. Did this farmer get a square deal? If not, why not? H. J. Baade,
Napa County Farm Adviser.

A. . Morey, a dairyman of Orland, has purchased a valuable registered Jersey heifer from the famous Mossdale herd at Stockton.

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Write for new descriptive Catalog. Largest and most complete stock in California.

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DORMANT SOLUBLE OIL,
A high-grade miscible oil, containing no asphalt.

CRUDE OIL EMULSION,
Perfectly emulsified and a product that will stand up.

ORCHARD BRAND LIME SULPHUR,
Filtered and free from sediment.

ORCHARD BRAND BORDEAUX PASTE,
The best fall fungus spray.

Universal Brand sprays have given results where directions have been followed out and the work done properly. Each product has a particular purpose. The proper use of these sprays should enable you to control your insect and fungus troubles so as to permit the trees to produce large crops of good, clean, marketable fruit.

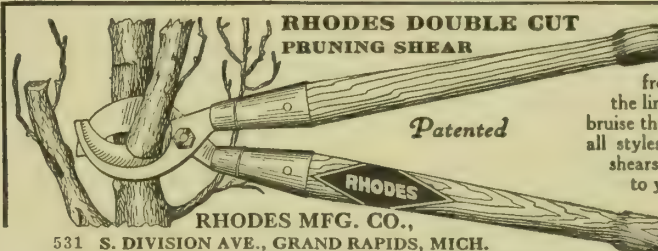


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WHEN USED ON YOUR LAND
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Apple, Apricot, Cherry, Fig, Nectarine, Medlar, Peach, Pear, Persimmon, Plum, Pomegranate, Prune, Quince, Almond, Chestnut, Pecan, Walnut, Olive, Avocado, Cherimolia, Feijoa, Guava, Loquat, Sapota, Orange, Lemon, Pomelo, Lime, Tangerine, Kumquat, etc.

If a large number of trees are wanted for acreage planting, write me stating about what you will require and I will make you an attractive price on same by personal letter.

Largest and most varied stock of Ornamentals, Roses, Vines, etc., in California.

FREE CATALOGUE.

Indian Corn, 90 Bushels Per Acre.

[Written for Pacific Rural Press.]

Corn seems to have been held back by tradition as much as anything else; and it has only been in recent years that the silo and the growing need for rotation crops have slightly overcome old-standing prejudices as to where it may be profitably grown.

To any close observer of California agriculture it must be apparent that corn can be successfully grown under a great variety of natural conditions.

During the present year the writer has seen corn growing under most widely differing conditions; from the short, damp-seasoned river bottoms of Humboldt county to the southern boundaries of the State; in the irrigated sections of the hot interior valley and on the high, dry lands of the coast region.

True, much of this corn was to be used for silage purposes, but it seems almost a certainty that where corn can be sufficiently matured for silage it can also be cured for grain, even in such unusual locations as Humboldt county where at least one man is working to that end by corn breeding and seed selection.

Mostly, corn has just grown in California, there having been no concentrated effort to improve yields or varieties by intelligent seed breeding and selection, fundamental factors in corn culture in the great corn growing States of the Middle West.

But with the wider field that corn is serving in the State at this time there is a growing disposition among farmers to follow the Middle Westerner's example and fit the right corn to the right land, rather than to haphazardly plant the seed most available at the time of planting.

It is toward that end that farmers should be working at this writing. If corn has been grown the past year and the variety is the one decided upon as most desirable, seed selection should be started in the field before husking, to get the best results.

Prof. John Nicholson of the University of Arizona details a plan for seed selection in the following manner:

"After the husks have turned yellow, go into the field and tie rags or strings on enough ears to more than plant next year's crop (it requires 12 to 15 ears per acre). In this way you can see the type of parent plant that produces the selected ears. You will want to select for early maturity; best form of ear, leafy stalks, not too coarse stalks, with ears the proper height from the ground, stalks with one or two good ears, no nubbins, ears with shanks of medium length and size, and ears that droop slightly. This last characteristic is to be preferred to upright ears on account of drooping ears shedding rainwater better, thus preventing moisture from running into the ear when the corn is fully mature. These marked ears should be gathered and stored in a suitable curing room, where the temperature is uniform and dry. By selecting more than would be required for planting, another culling can be made, selecting the best type of ear for grain; also, when the seed

is tested for germination next spring, ears showing poor vitality can be discarded, and still enough seed will be secured for the planting.

If you follow this system for several seasons, the yield and quality of your corn will be greatly increased."

Some idea of the results that may be achieved in California by intelligent seed selection and good cultivation is shown by the experience of M. Bassett of Kings county, a corn grower for 20 years, whose yields range between 80 and 100 bushels per acre.

During Mr. Bassett's early experience in corn growing, he planted White Dent, but believing that yellow Dent is a much stronger feed for hogs he changed to the latter and has been growing that variety ever since.

Good corn is considered in the same light as good livestock on this ranch; selection for quality and quantity tells in the next generation, and so it is that while husking the corn in November, seed for the following year's planting is chosen.

The basis for this selection is not the largest ear or the stalk producing an unusually large number of ears, but rather for a uniform stalk and ear, the former having straight rows of kernels and the rows extending from tip to butt in a uniform manner.

The kernels on both the tip and butt are broken off to insure seed of the best type. The first selection is made in the field in November, the seed from this selection being stored by itself till planting time when it is again sorted over and the best ears used for planting.

But corn growing is no lazy man's job. Mr. Bassett believes that more than seed selection is required if a good crop is to be harvested. Too much emphasis, he thinks, cannot be placed on seed bed preparation and cultivation.

Moisture being one of the important factors, deep plowing in the early winter is the rule, the land then being allowed to stand till well along in the spring when it is irrigated to insure plenty of moisture, and again plowed, this time 12 inches or more deep.

Planting is usual some time in May, after all danger of frost is past, an ordinary corn planter doing the work satisfactorily. If rain falls before the plants come through the ground, he harrows the crust that forms.

After the plants are above the ground, the cultivators work continuously till the height of the corn will no longer permit.

This cultivation has a lot to do with the ultimate yield, for it aids in conserving the moisture which has previously been stored in the deeply plowed soil. By this time also the pumpkin vines have spread out over the ground and made further cultivation an impossibility, for never a year passes that Mr. Bassett doesn't get a fine lot of hog feed from pumpkins grown in the corn field.

By the first of November the corn is ready to husk, the only pests which have bothered during the

growing season being the corn worm, which sometimes eats into the end of the ear. Blackbirds are about the surest eradicators of these unfriendly worms, the birds picking the worms out of the end of the ears, but doing no damage to the ear proper because of the protecting husk.

Still further improvement in yield and quality could be attained, Mr. Bassett believes; and by such selection with varieties already established in California, together with deep and thorough cultivation, he believes corn can and will be grown in most, if not all of the irrigated regions of the State.

Naturally a large part of the greatly increased 1916 acreage was for silage; but the silo owner usually plants more corn than is actually needed for the silo and the balance of the field is allowed to ripen.

These small patches of ripened corn are significant factors in the promotion of corn culture at this time. They act as an object lesson to the farmer on his own farm, prov-

ing to him in most instances that the reason we do not grow more corn is because we do not plant it.

CERTIFIED RICE SEED.

[Written for Pacific Rural Press.]

About 300 acres of certified rice seed have been grown this season in Yolo county by three ranchers, according to Horticultural Commissioner Wm. Gould. It was inspected several times for purity of variety and freedom from watergrass; and a more thorough inspection of each check was made after the water was taken off. There is very little watergrass in the county, and certified seed producers ought to be encouraged by better price to keep the weed from running out the rice culture as it has on thousands of acres in the older California rice districts. About 80 per cent of Yolo county rice is Waterbune, and 15 per cent Italian.

The six crop varieties favored by Merced Co. fruit growers are almonds, peaches, figs, olives, prunes, and apricots, in the order named.

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H. BOOKSIN, MGR.

Progressive Agriculture in Nevada.

[Written for Pacific Rural Press.]

Our traveling representative has recently returned from Nevada after a few months' trip through this State. Conditions there look very good notwithstanding the off year in weather conditions and the numerous frosts. Hay, grain and potato crops have been good in general and high prices received this year.

In the "Truckee Meadows" a considerable increase in small farms of 40 and 80 acres are in cultivation in the past two years. These farmers are doing well. The principal production is alfalfa, hay, and grain. This is also true in Washoe Valley where the farms are larger. Carson Valley is probably the richest community of the State as well as the oldest valley in cultivation. Alfalfa crops going five tons to the acre is a common sight and the wheat crops are exceptionally good this year. There is quite a little dairying, and the farmers have a co-operative creamery as well as a flour mill. Apples and pears are also grown in Carson Valley, but due to the heavy frosts the crop was very light this year. Smith Valley is a great country of turkey raising and is sometimes called Turkey Valley.

Mason Valley, 50 miles long, was producing thousands of tons of potatoes of the finest quality. Alfalfa, cattle and hogs are also in great evidence here. In the Fallon country, the government has built the great Lahontan dam for the Truckee-Carson Project. Here is found the largest agricultural community of Nevada. Hundreds of farmers in the past few years have taken up 40- and 80-acre tracts from the government which gives them 20 years to pay for the water rights. Thousands of acres are still to be had here with irrigation water rights. Lots of the poor homesteaders that settled on this land a few

years back are beginning to feel a wave of prosperity. They are growing alfalfa, grain, and potatoes; and this coming year many acres will be in sugar beets. Fallon has a sugar factory that cost more than one million dollars.

The government is about to put in a better drainage system, which is necessary. One great help to the settler in this project would be for the government to level the land before settlers go on it. Aside from this one cannot see how Fallon country can help going ahead. The same can be said of the Fernley country, where the same waters are used. Lovelock Valley, or what was formerly known as the Big Meadows, still has quite a few large ranches. Some of these are being cut up. The land here is very good and is principally used for hay, grain, and livestock pasture. The main drawback to Lovelock is that some years the water supply is short, as all the water is used from Humboldt river. There is some talk of bringing the waters of the Truckee river into this valley. Stock raising is going on in a very large way all over Elko county, where everyone seems prosperous.

One thing that was very noticeable is the interest taken by the farmers in raising purebred cattle and hogs; and in the near future Nevada will be heard from in this line. Fruit raising has been done in only a small way, although more will be planted. Almost every kind of vegetables are raised in Nevada and of fine quality. Celery is exceptionally good, and one does not want to eat better potatoes.

Farmers just starting in the State can receive help for the asking from the University of Nevada, which has done great work in both the agricultural and animal departments.

with this idea in mind that the entire herd of 68 head were entered in the Kern County Cow Testing Association when that organization was formed this year.

The object of this is to improve production by breeding to purebred Jersey bulls, and without individual tests it is impossible to select the most likely heifers, except by guesswork. Guesswork though is poor policy, as shown by the record of a cross-bred cow during the month July 20 to August 30.

It was known that this cow gave a good flow of milk, but from its color it was judged to be poor in quality. What then was the surprise to find that she was not only the best cow in the herd but in the entire association as well, producing just a trifle over 65 pounds of fat in the 30 days' time. Needless to say her heifer calves will be painstakingly kept in the future.

During that same time there were 10 cows in the 40-pounds-of-fat or better class of the association and none of them were under 30 pounds. Alfalfa forms the major part of the ration supplemented with beet plup and barley in the winter and Bermuda-infested alfalfa pasture during the summer months.

RENEWED ALFALFA BY PLOWING.

[Written for Pacific Rural Press.]

Some surprises have been pulled off when people have plowed up old alfalfa fields because they were unproductive. F. H. Brubaker of Tehama county tried to kill a piece of alfalfa by turning it upside down in winter. It simply threw out a lot of new roots which made it grow twice as fast and twice as tall on the loosened ground, and made bigger, thicker bunches. He tried to grow barley there for two or three years, but got enough alfalfa to make good crops every season. Even the roots on top of the ground started to grow, but would have been in the way of the mower so were hauled off. Disking never gave Mr. Brubaker much results on alfalfa because it didn't go deep enough.

This was on clay sediment soil in an irrigated orchard, and the same results might not come in the open. However, F. P. Stratton of the same locality comes from Idaho where they irrigate much alfalfa and consider the quickest way to renew worn-out fields is to plow it up deeply, sow barley, and soon there is a fine growth of alfalfa. This has been observed by many California farmers.

Producing Clean, High-testing Milk.

[Written for Pacific Rural Press.]

High-testing milk has not generally been sought after by producers of market milk for city delivery because as a general thing cows producing such milk do not give a large quantity.

This conditions, however, does not hold good in the vicinity adjacent to Bakersfield, and as a result a large proportion of the dairymen supplying milk to residents of that city keep a large number of Jersey cows in their herd.

D. H. Bitner maintains such a herd on his 200-acre ranch, the product selling for 18 cents a gallon because of its richness and the sanitary method in which it is handled, the bacteria count keeping close to 10,000 per c.c.

The conditions under which this quality of milk is produced are such as most any dairyman could afford to have, the barn having a well drained floor and hay mow overhead, the floor of the latter being made of tongue and grooved lumber which does not permit dust falling into the milking stable. And this is further provided against by having the stanchions face the outside wall where doors, hung from the bottom on hinges, are placed at regular in-

tervals.

Similar doors, hinged at the top, are directly above the lower set, but open out from the hay mow so that in feeding hay from the mow it is forked out through the top door, falling on the inclined bottom door and then into the manger. By this method all of the dust is on the outside rather than on the inside of the milking stable.

The milk room, while convenient and sanitary, has been built at a minimum cost, being equipped with a concrete wall about four feet high and a well-drained concrete floor. On the outside a wire enclosed stairway was built from which the milk is poured through the wall over a cooler, then passing into the bottling machine.

Above the concrete walls on the south, east and part of the west side a screened space was left for ventilation and sunlight, and a utensil rack along the south side provided a good sunning place for the cans and utensils. A small addition on the west side provides room for boiler, washing apparatus, bottle storage room, etc.

In cows as in sanitation the object is to have the best and it was

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Information Concerning Rye Grasses.

To the Editor: Will you kindly inform me about English rye grass? Is it a perennial; does it stay green all the year round; or does the frost kill it? I want to get some kind of grass that will make a dairy pasture that will grow all the time, but I don't want anything to do with Johnson grass.—R. V., Arbuckle.

[Answered by Prof. P. B. Kennedy, Univ. of California.]

There are two rye grasses commonly grown on the Pacific coast. One is the Italian rye grass, or Australian rye grass, *Lolium multiflorum*, or in the older books on grasses, *Lolium italicum*. This is the one more commonly used because it is a more rapid grower and will persist on a number of different kinds of soils. Its life period, however, is not as long as the other, being one to three years. On sandy lands which become dry in summer, it usually dies out the first year; on clay lands it may persist for a number of years, reseeding itself quite freely, thus making it appear as if it were a long-lived perennial.

The other is the English or perennial rye grass. This is usually

somewhat finer leaved and is more leafy at the base, does not grow quite so quickly and readily as the former, but in the same character of soils as above mentioned, will persist longer when once established. It is really a better pasture grass than the Italian rye grass, while the Italian rye grass is considered better for hay. The amount of growth received from either of them is dependent on the character of the soil and the amount of moisture supplied to it. Under irrigation, the rye grasses may be cut several times throughout the season. They will withstand some alkali. Flooding will not injure them so long as the water is not allowed to become too stagnant. I consider now the very best time to seed land to this grass.

Rye grass is quite nutritious, as much so as any of the grasses, and does not deteriorate so quickly as most if allowed to become quite mature. On rich land the hay and pasture seem to be more nutritious than when grown on poor land, even if the growth should appear the same.

Borrowing Money from Uncle Sam.

To the Editor: Has the "Rural Credit Bank" been established on the Pacific Coast? How should we go about it to get a loan?—J. L., Elk Grove.

To borrow money under the Federal Farm Loan System, enough farmers who want to borrow money will have to get together to borrow at least \$20,000. They must have property on which they can give first mortgages for loans of not more than 50 per cent of the value of the land and 25 per cent of the value of the buildings on it.

They must elect a President, Secretary, and a Board of Directors and apply to a Federal Loan Bank for a charter. The Federal Loan Bank is one of 12 which are established each in one of 12 districts in the United States. These are not yet established, and you cannot borrow money until they are.

At that time, your local Loan Committee will appraise your property and allow you to borrow up to the amount mentioned previously, at

an interest not to exceed 6 per cent and more than likely to be less than 5 per cent, repayable in yearly payments which will extinguish the entire debt with interest at the end of the period for which you borrowed the money. This period must be at least 5 years and may be 40. After the first 5 years, you can pay up the whole thing if you wish.

In the borrowing, you will have to subscribe for stock in your local association to equal 5 per cent on the loan you wish to get. Your local association will invest this in the Federal Bank. The Federal Bank must have \$750,000 capital. If this is not subscribed for by private people or local loan associations, the Government will subscribe whatever is necessary.

Groups of farmers all over the State are already organizing preparatory to applying for loans as soon as the banks shall have been established. We will soon have an article covering the situation.

HARD TO SELL SUNFLOWER SEED.

To the Editor: A small boy of nine has harvested his crop of sunflower seed (his first experiment in agriculture). He will have several grain bags full of seed and would like to know if there is any market for them and what they are worth.—J. H. Y., Meridian.

[Nobody seems to want sunflower seed in any quantity, and we have to advise that you try to sell it in your local stores if possible. If you will write to one of the wholesale grocers in Marysville, telling him that you are sending under separate cover a fair, representative sample of the lot, that he can have them at 2½¢, and how many pounds you have, the chances are that he will take it if he has any use for sunflower seed. If you ask him how much he will pay, your letter will probably go into the waste-basket. The average price of sunflower seed for a term of years in carlots in San Francisco is 2½¢ to 3½¢, according to Geo. H. Croley, but everybody

here seems entirely loaded up. The C. C. Morse Co. advise that clean seed should be worth \$2.00 per hundred pounds, but they do not need any.]

SWEET POTATO FOOD VALUE FOR STOCK.

To the Editor: What is the value of sweet potatoes as compared with corn or barley?—J. H. K., Arvin.

[Answered by J. I. Thompson, University Farm, Davis.]

Barley has a total feeding value of 79.4 pounds to the 100 pounds [after the fat is converted into carbohydrates] and out of this 79.4 pounds, nine pounds is protein. Sweet potatoes have a total of 25.8 pounds, of which only 0.9 pound is protein. You will see, therefore, that the sweet potatoes run relatively high in carbohydrate material since about one-fourth of their digestible contents is made up of it. When fed with alfalfa pasture or skim milk or tankage, they give reasonable satisfaction. A number of breeders in the northern San Joaquin valley have used them satisfactorily.

TALKS ON Nitrogenous Fertilization

Number 1

WE WANT to talk with you a little once in a while about nitrogenous fertilization. These talks will appear in future issues of this journal. We hope they will arouse your interest and perhaps afford you some valuable information.

The leading agricultural authorities and the successful growers of California have about come to the conclusion that nearly all soils and nearly all crops will profit by an application of a readily available nitrogenous fertilizer. Indeed, the question is not so much whether or not to do it, but rather what to use and how.

SULPHATE OF AMMONIA

There are half a dozen good reasons why Sulphate of Ammonia is the best form of nitrogen to use.

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It does not deteriorate by storage.

Its nitrogen is all soluble and all quickly available as plant food.

It does not leach out of the soil readily, and it is ready for use when the feeding roots want it.

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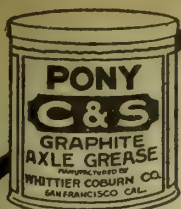
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SENTIMENTALITY IN LAND BUILDING.

(Continued from first page.)
stable room on this model ranch.

Cheese Factory.—With the en-
larged herd, there being 120 head of
cattle at present on the ranch, came
marketing problems; for it was early
seen that milk buyers did not pro-
pose to pay a fair price for the out-
put. As a result a modern cheese
factory, with a capacity for handling
5,000 pounds of milk daily, has been
erected and placed under the man-
agement of Chris Kolbeck, formerly
cheese-maker at the University Farm
at Davis. Cheddar cheese of the
highest quality is now made, closing
a leak which for a time seemed
serious.

The hog department has also
grown in proportions, both the Ches-
ter White and Duroc herds gaining
in numbers and strength, thus fur-
nishing a profitable outlet for whey
from the cheese factory and the
various cheap feeds of the ranch such
as stubble fields, cut-over alfalfa
fields, etc.

And so while there was a whole
lot of sentimentality about the place
originally, it is a hard-headed busi-
ness proposition now and every
move is made with the ultimate idea
of making money from the invest-
ment. This simply adds to the old
pride felt in the "home place" by
every member of the company.

SUDAN AND ALFALFA FOR HORSES.

To the Editor: If sudan and al-
falfa make practically a balanced ration,
how many pounds per day are
required by a horse of about 1200
pounds doing little or no work?—
E. M. S., Elsinore.

[Answered by Prof. J. I. Thompson,
University Farm, Davis.]

Sudan grass runs somewhat higher
in carbohydrates and lower in pro-
tein than alfalfa hay, so that the
two fed together would be reason-
ably satisfactory for a horse not at
work. Some grain would need to be
added, preferably barley and oats in
equal parts, if sufficient work was
done to cause the horse to lose con-
dition. Seventeen to 20 lbs. of hay
would be necessary for an average
1200-lb. horse at very light work,
but this amount could be decreased
to 12 pounds, with ½ pound of grain
for each 100 pounds weight of the
horse added, for medium work; for
your horse this would be 6 pounds of
grain to 12 of hay. For real heavy
work the grain should be increased
to 12 pounds per day, and the hay
reduced to 9 or 10 pounds.

PUBLIC SERVICE PATENTS.

Twenty-nine valuable inventions
and discoveries made by scientists
of the U. S. Dept. of Agriculture
have been dedicated to the public
during the last fiscal year, accord-
ing to the annual report of the So-
licitor. In accordance with the policy
of the Department, its workers, when
they discover valuable processes or
devices, obtain what is popularly
known as a "public-service" patent,
the chief purpose of which is to pre-
vent any one else from patenting the
invention. This insures to the pub-
lic the free use of these processes
and devices which have been devel-
oped at public expense in connection
with the investigational work of the
Department.

The rate on bean shipments out
of Ventura will be increased begin-
ning December 31.

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Agents, and you will endorse it, too, after using it—if not *Your Money Back*,
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Los Angeles.

General Agricultural Review.

FIELD CROPS.

The average rice yield of Butte county is thirty per cent below normal.

A Chinaman of the delta section sold 10,000 sacks of potatoes recently for seed purposes for \$2.75 per cental on the river bank.

A. C. Whittemore, manager of the Southern Pacific Co. warehouses, estimated that this year's crop of beans in Lompoc valley will amount to about 200,000 bags.

It is expected that a total of 40,000 sacks will be taken from the Paulsell rice fields near Oakdale, this year, some of which ran as high as 80 sacks to the acre.

Stockton reports show a shortage in the available supply of potatoes, which is estimated at 1,500,000 bags less than the normal amount required for California consumption.

Ventura's big bean crop was so large this year that farmers found it necessary to work nights. Threshing machines worked every night by electric light from nine to eleven o'clock.

Manteca is to have a million and a half dollar modern sugar refinery to be erected by the Spreckels Sugar Company, which this season shipped out a total of 512 cars, or 20,000 tons of sugar.

Sweet potato shipments are in full blast at Livingston. The car shortage has embarrassed operations somewhat, resulting in unfilled orders, and at times halting hauling from the fields.

High prices paid for grains and a natural shortage is inducing San Joaquin valley farmers to plant from 25 to 30 per cent more wheat this year than they did last year, according to reliable reports.

Simon Kohn, of El Rio, disposed of his entire lima bean holdings for a sum aggregating \$85,000. The beans represent holdings of three years, and comprise 17,000 bags at a net price of \$6.25 per 100 pounds.

It is thought that turning off the water before the grain had sufficiently ripened explains the falling off in weight of Glenn Co. rice. The average weight is 92 pounds to the sack, whereas in former years rice weighed 100 or more pounds.

The American Beet Sugar Company's plant at Chino turned out 321,817 100-pound sacks of granulated beet sugar this season, running 24 hours a day for 100 days. It is estimated the plant manufactured 3317 sacks of sugar every day. This production is valued at \$2,477,677.

Hop growers of the Sacramento Valley are not optimistic over the outlook. They claim that it costs 11 cents to produce hops, and many who are "up against it" are selling out at 10½ cents. The British embargo on American hops and the spread of the "dry" wave resulting from the late election are the two main factors of depression.

DECIDUOUS FRUITS.

Two-thirds of the Concord prune and apricot acreage signed up under Manager Hersman's plan of organization.

The prune growers of the Chico district intend to join in the statewide movement for organizing a marketing body.

Fritz Klope, banker and rancher of Calxico, says that his winter pears are paying him well. He has twenty acres of pears now in full bearing, and he says he is getting \$50.00 per ton for his pears at Calxico, and that the crop is paying him \$50.00 per acre.

Paradise fruit growers are earnestly discussing the advisability of adopting a system of uniform planting. It is believed that if the growers over a large area will concen-

trate on some one fruit, and the best variety of that fruit for their locality, a better article will be produced, and that the plantings will all mature about the same time, making possible the economy of carload shipments.

The apple crop of the United States this season amounts to 67,695,000 barrels, which is approximately 9,000,000 barrels less than last year, but nearly 2,000,000 in excess of the average. Of the total crop, 67.6 per cent, or 45,759,000 barrels are of the winter varieties, and of these, it is estimated that 52.5 per cent, or 24,011,000 barrels, will be marketed, compared with 25,478,000 barrels, which was 50.6 per cent, of last year's crop of winter apples. Of the 1915 crop about 65.7 per cent were winter apples.

CITRUS, NUTS, SEMI-TROPICAL.

The olive crop was not damaged by the late cold snap.

Riverside passed the 8-to-1 ordinance against the shipment of oranges below standard.

The first shipment of "Sunkist" oranges from Los Angeles county was made last week from Azusa.

Monrovia shipped four cars of early navel oranges last week to the Eastern and Canadian markets for the Christmas trade.

The entire olive crop of the Natomas Consolidated Co. has been contracted for five years by Libby, McNeil & Libby.

A new industry in Lindsay, the Ripe Olive Company, began canning Nov. 18 for the first time, when the output was 250 quart-size cans.

County Horticultural Commissioner C. F. Collins estimates the orange crop of Tulare Co. this year at 6,326 cars.

The five-day session of citrus growers, held at Riverside last week under the auspices of the University of California, was taken up with discussions on inspection of plants, orchard fertilization, and scale control.

It is announced from San Bernardino that the orange season in San Bernardino Valley opened December 1, and several carloads are expected to be shipped before the middle of the month. A normal crop is expected.

H. W. Seager, manager of the Redlands-Highland Fruit Exchange, who has just returned from New York, says market conditions East are good. Prices, he says, are high and he thinks they have the best year in sight for a long time.

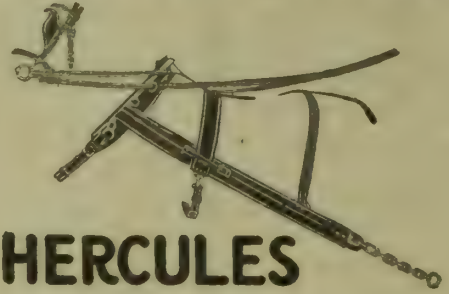
The State Superintendent of Weights and Measures announces that on and after July 1, 1917, all olive oil must be sold in tin containers, in accordance with the United States standard gallon liquid measure, and its regular subdivisions—half-gallon, quart, pint, half-pint and gill.

The total production of lemons in Italy this past season was 440,200 tons, two-thirds of which are exported, the remaining one-third being worked up into by-products, such as citrate of lime, essential oils, etc. In normal times the United States takes 30 per cent of Italy's lemon exports.

The commercial orange crop of the United States shows a probable increase of 2,635,000 boxes this year, according to the Department of Agriculture. California's production is 17,500,000 boxes, or 2,450,000 more than last year, and that of Florida 6,335,000 boxes, or an increase of 185,000.

Returns from the first citrus fruit shipped from Tulare county to the eastern market for both the Porterville and the Woodlake districts showed the fruit selling in New York for \$2.85 f. o. b. Porterville or Tulare county points. The high price

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GRAND CHAMPION SHOW,
P. P. L. E. 1915; Sacramento 1916.

California Hog Book

BY W. S. GUILFORD.
Price, \$2.00 per Copy, Postpaid.

is due in part to generally higher prices, and to the 8-to-1 test. The crop stands to net \$6,000,000.

Orange packing started last week at Lindsay. Heretofore it has always been the practice to sweat the fruit to hasten packing condition, but this will largely be eliminated this season, as the cool weather has served to ripen and sweeten the fruit on the trees earlier than common. Boxes will for the first time bear the label: "Not artificially colored; tree ripened."

A new bleach for walnuts was tried at Santa Ana recently with seemingly successful results. The excessive cost of chloride of lime heretofore used in the solution for bleaching caused efforts to be made to find a substitute. Chloride of lime has advanced from 4 cents a pound to 13½ cents. The formula of the new liquid reduces the cost to the equivalent of paying 2 cents a pound for chloride of lime.

It may interest the citrus grower to learn that the Chief of the Bureau of Plant Industry has invented a machine which successfully removes the oil-bearing portion of the rind of waste and cull oranges and other citrus fruits, thus making it possible to eliminate a large part of the expensive hand labor which has heretofore rendered the domestic production of sweet-orange oil commercially unprofitable. This machine has been patented and dedicated to the public.

There is a strong feeling against the 8-to-1 orange test in Southern California. Growers contend that the oranges of the foothill groves are peculiar in that their acid and sugar contents are both unusually high. A southern orange may have more sugar than a northern orange. It may also have more acid, so that the ratio is less than 8-to-1, though the orange is perfect of its type. It is also said the high acid content along with plenty of sugar makes the orange of the Monrovia-Duarte district such an excellent keeper and shipper.

GRAPES.

Tokay shipments from the northern part of San Joaquin Co. have aggregated about 2,400 cars for the season.

Pears on Japan Roots

Our mountain grown Pear trees on **Blight Resistant Roots** are unexcelled. Grade heavy with fibrous roots.

Ask about our **EXTRA SELECT GRADE.** Prices Are Right.

Walnuts—Our prices are low. Franquette, Mayette, San Jose Mayette, Eureka on California Black Roots.

FILBERTS—Ask about them. CATALOGUE FREE.

BARREN HILL NURSERY,
C. E. PARSONS, Prop. Calif.
Nevada City.

The Calif. Associated Raisin Co. has purchased 20 acres of land situated on the main line of the Santa Fe and the Sanger branch of the Southern Pacific. The purchase was made as a future site for a packing house and seedling plant in case the Pacific Coast Seeded Raisin Co.'s plant was not re-leased.

The returns on grape shipments this season have averaged about \$1,000 gross per car. This sum is distributed about as follows: Freight, \$300; refrigeration, \$85; shock, \$80; making a total expense of \$465 per car. The balance of \$535 a car is distributed at the point of production, approximately \$200 going to labor, \$70 for commission, and \$265 to the grower.

According to a statement made by the president of the Calif. Fruit Distributors, 500 cars of our grapes were placed with the Eastern wineries, and more could have been sold if the shippers had been able to deliver them. Most of the grapes were Zinfandels and Muscats, the cheaper varieties of wine grapes. The cold, rainy summer this year made still lower the generally low sugar content of Eastern grapes, which tended to increase the sales of California wine grapes on the Atlantic seaboard.

MISCELLANEOUS.

C. M. Bertch of Visalia is preparing to seed five hundred acres to wheat, barley, and corn.

The Stanislaus County Farm Bureau have resolved to inaugurate a month's campaign against the squirrel pest.

George McKee, a rancher of Oxnard, has disposed of his entire holdings, 12,000 sacks, at something over \$6.25 per cwt.

President Chas. S. Barrett of the Farmers' Union declares that this organization will ignore politics and stand by its friends wherever it finds them.

C. R. Lucas, the nurseryman of Reedley, reports numerous large orders on file. Mr. Lucas says the planting in the Reedley district will far exceed that of last year.

The Globe Cotton Seed Mill, with a capital of \$500,000, will soon start up in Los Angeles. The plant's principal product will be oilcake meal from cotton seed grown in the Imperial Valley.

The Director of the States Relations Service of the U. S. Department of Agriculture reports an unprecedented increase in the number of secondary schools giving agricultural courses, and estimates the number of students enrolled in such courses at more than 90,000.

Imperial Valley, under the auspices of the local farm bureau, will hold a great livestock fair in El Centro from Dec. 29 to Jan. 1, according to A. M. Nelson, secretary

of the Imperial Co. Farm Bureau. The fair will be restricted to live-stock exhibits, but will have in addition special attractions.

It is announced from Washington that a tract of 97,760 acres of government land lying in the Visalia Land Office district, will be thrown open to settlement on December 11. This includes 7000 acres in Tulare county, 3000 acres in Fresno county, and the remainder in Kern county.

Imports of gold into the United States during the fiscal year ending June 30, 1916, amounted to \$494,009,301 and the exports were \$90,249,548; while in the preceding fiscal year the imports were \$171,568,755 and the exports were \$146,224,148. Hence the net imports in 1915-16 were about \$404,000,000, and 1914-15, about \$25,000,000.

The filing of deeds on Nov. 14 in the County Recorder's office at Sacramento attested that the Calif. Fruit Cannery Association and the Griffin & Skelley Co., two of the biggest factors in the fruit-packing industry in Calif., have come into the control of the Calif. Packing Corporation in a deal involving \$2,500,000 in cash and the transfer of 55,000 shares of stock.

The possibilities of asparagus culture in the Turlock district are being brought to the attention of the farmers of that section as the result of investigations being made by the G. W. Hume Co. and the Turlock Merchants & Growers, Inc., and it is safe to predict that within the next two or three years Turlock will become as well known for the extent and quality of this product as for cantaloupes and watermelons.

Seventy-three high schools in California now have practical courses in agriculture. Forty-seven schools reported general farming courses; 28 animal husbandry; 23 courses in dairying; 30 courses in horticulture; 13 courses in market gardening; 15 courses in plant propagation; 15 courses in the study of soils; 13 special science courses; 9 farm management courses; 16 courses in farm mechanics; 1 course in viticulture.

C. E. Bartlett of Petaluma, who spent three years in Fallon, Nev., in the Truckee-Carson Government project, writes us a few words in commendation of that district. He says that: "While a small district comparatively, it has as good opportunities, or better, for a man with a little money and plenty of energy, as any place on this Coast. It is no get-rich-quick scheme, but takes work, and lots of it; but it offers a home and a good living to the right people."

PRUNE AND APRICOT GROWERS' MOVEMENT.

A banquet was given to the local business men and fruit growers of Santa Rosa, Nov. 24, at the Overton Hotel. The affair was promoted by S. W. Baker of the old Cured Fruit Exchange and the Santa Rosa Chamber of Commerce in behalf of the Prune and Apricot Growers, Inc. A strong delegation from San Jose was present, among whom were H. S. Hersman, H. G. Coykendall, O. A. Harlan, Dr. F. M. Coleman, W. G. Alexander, Joseph T. Brooks, Secretary San Jose Chamber of Commerce, and G. E. Merrill.

Half of the Ventura and Orange County bearing acreage have signed up.

The Hemet Cured Fruit Assn. will meet next Monday night to discuss organization. The directors have already expressed approval of the movement.

CURL LEAF SPRAY.

To the Editor: Which is the best time and best spray material for curl leaf on peach?—H. L., Wheatland.

Spray with lime-sulphur 1 to 9 just before the buds open in the spring. The sprays to apply now are for shothole fungus or peach blight, or for aphid eggs or scales.

Sunday Round Trips for One Fare

Between many points, at figures ranging from 50 cents to \$5.00



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Mechanical Power on the Farm.

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UNIVERSITY TRACTOR SCHOOL.

[Written for Pacific Rural Press.]

A tractor demonstration isn't in it when you want to learn the real inside workings of tractors, how to keep them out of trouble, how to get them out of trouble, and how to make them work for you.

A tractor demonstration would be the finest thing going for those purposes, were it not for the Tractor Short Course at University Farm, Davis, under management of Prof. J. B. Davidson Nov. 13-23.

A day there is worth two at any tractor demonstration we have seen in California. Each day there was a morning and an afternoon lecture by Prof. Davidson the first week and by the service men of various tractor companies during the second week. All told, about 100 students enrolled. Practically all were ranchers, and to judge by the awkwardness with which they handled the various machines, most of them had never tried it before. Some even confessed an ignorance of the general principles of gas engines.

Several ladies enrolled. One of them wanted to know why one of the tractors "strained the smoke." The rest of the bunch showed their ignorance by laughing.

The students were divided into classes. Each class was assigned to one tractor from the end of each lecture until noon or 5 o'clock. About 70 attended the lecture which we heard and will report later.

There were ten tractors when we

attended Nov. 21. Each of eight manufacturers was represented, and the drivers, usually service men of the companies, were designated "instructors." They took the plates off the crank cases, explained the inner workings of their machines, answered questions, and taught the students to run the machines.

The questions were intelligent all right. A list of them as long as your arm had been given the students in one of the early lectures, and recorded in the notebooks which most of the students carried.

The questions concerned carbureter adjustment, air heaters, dirt removers, service systems of manufacturers, removal of pistons, re-boring cylinders, valve grinding, valve timing, clutch systems and materials, how to remove clutches, transmission gears, bearings, speed, cost of replacing worn parts, kind and frequency of lubrication, accessibility of bearings, spark and gas control, gear and clutch levers, etc., etc.

Tractors represented and working on allotted portions of the fields were Sandusky, International Harvester, Yuba, Holt, Best, Samson, and Big Bull.

They all lined up Tuesday morning in the presence of at least 150 students and visitors, and again in the afternoon for a dash past the movie camera, once all abreast; next, one after another, in a long line pulling plows, cultivators, disks, a Schmeiser giant land leveler, etc.;

and all loaded with students on every accessible perch. These pictures will be shown throughout California.

LONG-DISTANCE PIPE FROM PUMP.

To the Editor: How large a cement pipe would be required to carry water to a reservoir $\frac{3}{4}$ of a mile on an 18 ft. grade, using a 4-inch centrifugal pump? Would cement pipe be strong enough to stand so great a head? Could wood pipe be used for the first several 100 feet where the pressure would be the greatest and cement pipe for the remaining distance? If so, what size would be required and how many feet of each should be used? —W. E. C., Colusa.

[Answered by E. P. McMurtry, Krogh Mfg. Co.]

A 4-inch centrifugal pump has a normal capacity of 400 gallons per minute. Assuming that this is the capacity that he desires, we would recommend that this 4000-foot pipe line be 8 inches in diameter, resulting in a friction head of 20 feet, which added to the elevation of 18 feet will give a total head of 38

feet, and require 7 horsepower to operate.

If 6-inch line is used, the friction head would be 60 feet, which, added to the elevation of 18 feet, would result in a total head of 78 feet, requiring 14 horsepower.

You will note that the above estimate does not take into consideration any suction head. If there is a suction head to be added to the 18 feet, it will increase the total horsepower in direct proportion to the increase in head.

We would not recommend that concrete pipe be used if 6-inch pipe is installed as the pressure due to friction is too high.

If the 8-inch line is installed, it can be made of concrete. If concrete pipe is adopted, however, it must be of the reinforced type properly made and containing the proper kind of sand and cement.

We would recommend that your client contract with some cement pipe manufacturer for this pipe, obtaining definite guarantees.

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When a machine is so built that it will coast down a 3% grade over plowed soil, you may be sure that the power you generate is used, for the most part, to haul the load.

You may be sure that transmission is perfect, that the resistance, due to the machine itself, is lessened by the ball bearing tread—the only one of its kind used in a tractor.

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This scientific test proved the principle to be right, and the workmanship perfect. Proved it to have the accuracy of a watch, with the power of twenty horses on the drawbar.

COASTING

THE Division of Agricultural Engineering of the College of Agriculture, University of California, at the University Farm at Davis, Professor J. B. Davidson in charge, made some tests (see picture) to determine the extent of friction in the ball tread of the Yuba Ball Tread Tractor.

The result was the astonishing discovery that the tractor actually coasted over soft ground, down a 3% grade. The maximum motor power of the Yuba is delivered at the drawbar—where it will accomplish useful work.

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Town.....	Grain..... Hay.....
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A pocket memo booklet giving speed and power tables will be sent FREE to all who mail this coupon.

TRACTOR DRY FARMING.

[Written for Pacific Rural Press.]

With 16 to 24 inches average of rain on the level bean fields of Ventura county, E. E. Dunning has irrigated only 6 or 7 times in the past 33 years, and has had only one year when he didn't make a good crop. That was 1898, with only three or four inches of rain. This is due to moisture retention by the finely pulverized soil. The pulverizing is made possible by repeated use of a tractor which in spring chisels and mashes the clods "fine as silk."

Plowing is done in the fall before the rains, 12 to 14 inches deep with the Yuba 18 and a 3-disk gang plow. This turns up big clods which are left rough all winter for the rains to soak in. If weeds start too soon, he pulls a 12-foot Cyclone cutting three or four inches deep.

On his soil, a 60 h.p. tractor proved too heavy. It packed down so hard in wet ground that cultivation tools would jump out of the ground when they hit the packed tracks afterward.

The balls in the Yuba track used to crack and chip, taking several hours to replace them. Of late, the company makes balls of steel instead of cast iron, and Mr. Dunning has experienced no trouble, the track and balls not being worn appreciably though he used it last year on his 70 acres for beans. At first some of the pipes choked up and it cost \$10 for an expert to come and fix it. Besides that, the total repairs for the year's work had not been over \$15.

DYNAMITE AND TRACTOR SUBSOILER FOR TREE PLANTING.

[Written for Pacific Rural Press.]

Orange trees in the orchard on one side of Dr. Bell's house in the Fair Oaks district are two years older than on the other side, but the older trees average only 1/2 as big. Not only is the size small and un-even, but the stand is not so good, and the leaves are not so healthy.

The difference, according to Prof. Elmore Chase, is due to the preparation of the ground before planting. In one case, the trees were set in spade holes; in the 10 acres on the other side of the house, a four-horse team pulled a moldboard six inches deep; then a subsoiler 20 inches deeper was pulled at intervals by a dozen horses, stopping to rest every four or five rods. The plowing and subsoiling cost \$14 an acre. Then two sticks of powder were exploded four feet deep at the proposed tree holes.

To avoid the cost of powder, another man mentioned by Mr. Chase is having a \$1500 Killefer subsoiler made, to loosen the soil three feet deep in a strip at least three feet wide. These strips are to be as far apart as the tree rows. The field will be treated similarly crosswise, and trees planted at the intersections. He expects it to require about 100 horsepower, to be furnished by three big tractors.

Despite the fact that the Southern Pacific Co. is receiving about 200 new box cars every day from the builders of 1,500 cars it is unable to come anywhere near meeting the enormous demand made upon it by Calif. shippers. It is thought the resulting interruption to the crop movement is only temporary.

POWER NOTES.

To keep the plow going on a turn, there needs to be plenty of power and grip on the ground.

A dust collector for air to the carburetor has recently appeared, which removes the dust dry by centrifugal force.

A blue cast to the exhaust is probably caused by lubricating oil according to Prof. J. B. Davidson of University Farm, and indicates that the mixture is not too rich.

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Before you buy any Engine—Read my Book, "How to Judge Engines." Tells how to distinguish a High Grade Engine by the difference in cylinders, pistons, valves, ignition, etc., with less cost for fuel, up-keep and repairs. Book Sent Free together with my LOW "Built by Experts" FACTORY PRICES and Easy Payment Plan. 90-day trial offer, etc. Address

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Please send me full information about the course checked above.

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Live Stock and Dairy Notes.

(Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.)

THE DAIRY.

Yolo county is being considered as desirable territory in which to establish a \$75,000 milk condensary.

Whole milk testing 4 per cent butterfat brings \$1.71 per hundred-weight to dairymen supplying the factory of the Carpenter Cheese Co. at Salida.

Dairymen of the Chowchilla district have organized a cream association. The members number about 80 per cent of all who are in the business in the district.

Dairymen in Sonoma, Marin and Napa counties have been heavy purchasers of all kinds of feed this fall, many of them being compelled to buy alfalfa hay for the first time.

Geo. W. Wilder of Colton has recently added twenty-six pure-bred Guernsey cows to his dairy herd. They were purchased in Ohio and represent the best strain of their breed.

The Petaluma Co-operative Creamery is now turning out about a ton of butter a day. This amount will be increased shortly as most of the cows in that district are just freshening.

Convinced that butter prices will continue to advance and possibly reach a maximum of 50 cents per pound for the consumer, dairymen of the State are reconciling themselves to paying high prices for concentrated feeds.

The Napa State Hospital has recently completed A. R. O. tests with two of their Holstein heifers, and according to Manager Owen Duffey, all of the registered cows owned by that institution will be tested as fast as they freshen.

Stanislaus dairymen will receive a visit this month from Dr. W. L. Williams of Cornell University, leading authority of the country on contagious diseases among dairy cattle. Dr. Williams comes to California to make a study of diseases of cattle.

M. H. Gardner, Superintendent of the Holstein-Friesian Association, writing from Delavan, Wis., Nov. 20, says: "The Holstein-Friesian cow Hester Aaltje Korndyke, 133222, has just produced 576.5 lbs. milk containing 34.332 lbs. fat in seven consecutive days.

The Napa-Petaluma Cow-Testing Association, the outgrowth of the Napa-Solano Association, has over 1400 cows entered at this time. Of this number the larger number are from Sonoma county herds. A flat rate of one dollar per cow per year is charged with 30 as the minimum sized herd accepted.

Six cows in the T. B. Purvine herd of registered Jerseys have recently completed Register of Merit records made under semi-official test rules. The largest one was made by Legacy of Byrondale, an aged cow who produced 534 pounds of fat. Fairy Boy's Ethel Louise, a two-year-old, has just completed a ten-month record with 315 pounds of fat. These records were made under dairy conditions, two milkings a day, on feeds grown in Petaluma district.

A big and important sale of purebred Holstein cattle is announced by Rhoades and Rhoades, the auctioneers, to take place at the Vista Holstein Farm, Rivera, Cal., December 12. At that time 70 head of high-class cattle from the Edgemont Holstein Farm, Burbank; Whittier Holstein School, Whittier; and Anita M. Baldwin's Anoakia Breeding Farm, Santa Anita, will make up the offerings. The cattle, it is said, will be fine individuals and showing the best of breeding.

The milking barn just being completed on Revada Farm, owned by B. Nixon, near Rutherford, Napa county, is without question one of the finest structures of its kind ever

built in the State. Cork brick floors, plastered and enameled sidewalls and ceiling, modern steel stanchions with individual drinking fountains are a few of the modern appliances which are being installed. The milk house is equally as modern, with refrigeration plant, sterilizing vat, etc. When completed certified milk will be sold in San Francisco from the imported Guernsey herd which Mr. Nixon has established during the past year.

The two-year-old heifer, Lottie Walker Spofford 3rd, 256340, daughter of the four-times 30-pound cow, Lottie Walker Spofford, and the King of the Black and Whites, owned by the Henderson Company, Sacramento, has just finished both a 7-day record and a 30-day record. She made the record under normal conditions, ran at pasture in the daytime with other cows, and was kept in the barn at night. Without special feeding she made 21.06 pounds in 7 days and 82.36 pounds in 30 days. Her best 7-day record was five weeks after calving. She made 453.2 pounds of milk in 7 days, and 1822 pounds of milk in 30 days.

BEEF CATTLE.

It is current report in Reno, Nev., that the Western Meat Co. of San Francisco is about to take over the holdings of the Nevada Packing Co. of Reno.

Three trainloads of cattle, most of them from Nevada, arrived last week for stockmen in the Oakdale section, who will fatten the steers for the coast markets.

D. O. Lively announces that he expects to hold an auction sale of registered Hereford cattle at his ranch near Mayfield on April 21 next. He will shortly make a trip to Denver to purchase sale cattle for this auction.

A report reaches us that O. Harris and Co. of Missouri have recently opened a branch in Southern California for the disposal of purebred Hereford cattle. A shipment has recently been made to their southern headquarters comprising several carloads.

Six hundred head of cattle turned in on uncut rice west of Colusa are doing so well that Herman Dunlap and son are bringing the rest of their cattle from the range in the western foothills and will pasture them on the plantations where the rice was not harvested in the Cheney slough project.

Both the International Livestock Show at Chicago and the Pacific International Livestock Show at Portland are attracting prominent California breeders this year, Chas. Hawkins, W. M. Carruthers and Prof. Gordon H. True being in attendance at the former and Wm. Bond and D. O. Lively at the latter.

E. F. Curtis, a well-known Napa boy, graduate of the Davis State Farm, has become an expert stockman, and is now managing a stock ranch near Suisun. He left recently for New Jersey, and will bring back a carload of Shorthorn cattle imported from England by a well known California importer.

David J. Stollery informs us that his letter calling for a meeting of Shorthorn breeders in San Francisco Dec. 11 has met with approval from practically all of the Shorthorn breeders in the State, word having been received from 20 or more that they would be in attendance, and several others having personally told him that they would attend.

Mr. A. W. Foster, owner of Hopland Stock Farm in Mendocino county, advises us that there is now under construction at that place modern beef cattle, dairy cattle and swine buildings which he expects to have completed by the first of the year. Mr. Foster has accumulated

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 24c per word.

SWINE.

Poland Chinas.

SMITH'S POLAND-CHINAS—Sows and gilts bred to Joker, First Prize Boar at the Wisconsin State Fair, 1915. These sows and gilts, sired by Iowa Wonder, who is a son of Wonder, the most celebrated Poland-China boar, living or dead. Litters from this mating are the best I have ever seen anywhere. Prices low quality considered. Will sell one or a carload. As a special inducement each purchaser will be given a year's subscription to the American Swineherd, the best swine paper published and a copy of the Handbook on the Sow; also a copy of the Pig Feeders' Manual. Geo. A. Smith, Corcoran, Cal.

MAKE BIG MONEY with our big-type Poland-Chinas. Smooth, easy feeders that make greatest weight in shortest time at lowest cost, topping the market at 225 lbs. in 6 months. 300 head, both sexes, all areas, reasonable prices. Some fine bred sows and gilts, and top-quality young boars. Best Eastern blood lines. Satisfaction guaranteed. Ranch in Tulare county, but address owner, B. H. Whitten, Route 5, Box 847, Los Angeles.

GRAND CHAMPION SUPERBA POLANDS—A few choice spring Superba boars ready for service. Sows bred to Superba for fall litters. Prices reasonably low. Roughs Greenfield, Arlington Station, Riverside, Cal.

REGISTERED POLAND-CHINA BOARS of serviceable age. A Wonder and Chief Picture breeding. Every animal guaranteed. Price \$25. Bar N. Ranch, E. A. Noyes & Son, Props., Sutter, Cal.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$5. Registered and crated, purchaser to return cars. E. A. Hall, Watsonville, Cal.

REGISTERED POLAND CHINAS—Young boars ready for service. Weanling pigs, both sexes. Prices attractive for quick sales. J. H. Cook, Paradise, Cal.

REGISTERED POLAND-CHINAS—Prolific, papulous, profitable porkers. Choice boars now ready for service, \$25 each. Weanlings, \$15. Dr. J. A. Crawshaw, Hanford, Cal.

LAKEVIEW STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Linn, Linview, Route A, Modesto, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trowhit, Box 82A, Hanford, Cal.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

POLAND CHINA HOGS FOR SALE—Registration papers furnished free. C. A. Cooley, Durham, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 27A, Davis, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for Fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

ONE OR A CARLOAD—Foundation herds of any size. Select them from our large herd at any time. They are all grown from pig-hood to maturity under the natural conditions of woodland and pasture range, with shade, pure water, and everything to make a hog clean, healthy, and strong. Visit us or write to Butte City Ranch, Home of Good Berkshires, Box P Butte City, Cal.

RANCHO RUBIUS DUROCS—About closed out. A few extra good sows, choice July gilts and weanling pigs, both sexes. Your last chance for high-class stock at common prices. Remember breeding stock will be scarce next year. Elmer Lamb, Ceres, Cal.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Roush, Santa Rosa, Cal.

WINONA BERKSHIRES—Four June 2nd, 1916, show daughters of Laurel Champion, out of Berrington Belle 31st, a blue ribbon sister of Improver B. Winona Ranch, R. 1, A-Box 105, Grantsburg, Wis.

REGISTERED BERKSHIRES—For sale bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

BARGAINS IN BERKSHIRES—Write today for our Special List of high-class boars and open gilts. Both the offerings and prices will please you. Silver Birch Farms, Box P. F. Newport, Wash.

CHOICE REGISTERED BERKSHIRES—Exceptionally fine pigs, \$15 each. Unrelated trues, \$40. Boars, sows, and gilts at reasonable prices. W. H. Waugh, Riverside, Cal.

SPECIAL—Six good service boars and a few sows in pig to Premier Leader due to farrow in October. Geo. M. York & Son, Berkshire breeders, Modesto, Cal.

REGISTERED BERKSHIRES of prize-winning blood. Write for description and photos. Imperial Stock Farm, Morgan Hill, Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Perris, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

BERKSHIRES—Carruthers Farms, Mayfield, Cal. Second annual sale, August 1, 1917.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Weanling pigs, \$10 each. G. A. Casey, R. 7, San Jose.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

CHAS. GOODMAN—Breeder of high-class Berkshire Swine. Williams, Cal.

Duroc-Jerseys.

DUROC JERSEYS—My hogs won highest honors at State Fair, taking first prize herd, first prize sow, second prize boar. Were the largest of their age exhibited. Stock all areas for sale. Prices reasonable. Breeding and satisfaction guaranteed. Haden Smith, Route 1, Box 84D Woodland.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

REGISTERED DUROCS—Service boars and open gilts from High Model, Defender and Crimson Wonder stock. River Bend Farm, St. Helena, Cal.

DUROC JERSEYS—Herd boars. B. N. Colonel and Tulare Boy. Sweetest stock winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs \$10. H. B. Boudier & Son, Napa.

HEAVY BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Odell, Denair, Cal.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class pure-bred hogs, both sexes, any age.

REGISTERED DUROC JERSEY MALES—Three months old, \$10. H. J. Schell, Alwater, Cal.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROC-JERSEY SWINE—D. L. Hendry, Lemoore, Cal.

REGISTERED DUROC JERSEY SWINE—Frederick M. Johnson, Napa, Cal.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

Yorkshires.

LARGE YORKSHIRES—Choice spring boars, gilts, and weaned pigs from Champion sow P. P. I. B., or from breeding of champion boar and sow, Sacramento, 1916. If you see them grow you will like them. Riverina Farms, Paradise Road, Modesto, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

Other Breeds.

BILLIKEN HERD OF IMPROVED CHESTERS—Prize winners at the State Fair. The Farmer's Utility breed. Size combined with quality; producers of big uniform litters of growthy pigs. 15 bred gilts due to farrow in Jan.; boars and sows of spring farrows; first class and extra well developed; best blood lines obtainable; prices reasonable and every one cholera immune. Write for special prices and circulars. C. B. Cunningham Mills, Cal.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millard, Yolo, Cal.

FOR SALE—Purebred registered Hampshire; any age; either sex. Registration free. H. E. Richardson, R. F. D. No. 1, Chico, Cal.

REGISTERED IMPROVED CHESTER Whites—Grizzly Bear Ranch, East Auburn, Cal.

DAIRY CATTLE.

Holsteins.

REGISTERED HOLSTEINS—Herd sire King Korndyke Hengerveld Ormsby 7th, 86623. His full sister, as Junior 3-year-old, made 32.04 lbs. butter in 7 days. The record of his sire's dam averaged 30.93. George Kounias, Modesto, Cal.

REGISTERED HOLSTEIN BULL CALVES—Sired by Lorena Korndyke Alcatraz, whose dam made 29.75 pounds butter fat in seven days as a four-year-old. J. M. Campbell, Escalon, Cal.

FOR SALE—Purebred Holstein Bull—"El Sur Capitán"—under 3. Three-quarters black. Healthy. Good-tempered. Sure stock-getter. Price \$150. H. P. Rosenberg, Box 640, Mill Valley.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

REGISTERED BULLS by King Korndyke (patent) and out of A. R. O. cows. A splendid selection old enough for service. Write or call. J. H. Harlan, Woodland, Cal.

TULARE GUERNSEY AND HOLSTEIN
Farm is offering young bulls of both breeds.
Excellent breeding. Prices reasonable. W. J.
Higdon, Tulare, Cal.

A NICE YOUNG SON from El Prado Wayne
Colantha and from a 24.26 lb. dam. J. W.
Benoit, Breeder of Registered Holsteins, Route
C, Modesto, Cal.

THE McCloud River Lumber Co., Mc-
Cloud, Cal.—Highclass thoroughbred Holstein
bulls for sale. Write for prices and pedigrees.

THE HENDERSON CO.—Breeders and im-
porters. Registered Holsteins. Sacramento
Bank Bldg., Sacramento.

BREEDERS OF REGISTERED HOLSTEIN
cattle and Berkshire pigs. Whittier State
School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. Morris
& Sons, Corp., Importers and Breeders. Wood-
land, Cal.

CREAM CUP HERD—Registered Holsteins.
Pontiac bull calves. M. Holdridge, Modesto,
Cal.

BREEDERS OF REGISTERED HOLSTEIN
CATTLE—McAlister & Sons, Chico, Cal.

SUNNYSIDE HERD—Registered Holsteins.
Cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

CHOICE HOLSTEIN bulls for sale. No fe-
males. Millbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN BULLS for sale
Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale.
L. Morse, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from
A. R. O. dams. B. F. Anderson, Modesto, Cal.

REGISTERED HOLSTEIN BULLS, \$50 to
\$150. Glorietta Stock Farm, Woodland, Cal.

HOLSTEIN COWS for sale with records
Or Stelson, Napa, Cal.

REGISTERED HOLSTEIN CATTLE—E. E.
Freeman, Route B, Modesto, Cal.

A. R. O. HERD OF HOLSTEINS—Alex
Whaley, Tulare, Calif.

Jerseys.

JERSEY BULLS AND BULL CALVES—
Sons and grandsons of 2 and 3 lbs. cows. None
better. Cheap for quality. N. H. Locke,
Lockeford, Cal.

REGISTERED JERSEYS—Herd established
1868. Young bulls from best cows. Rancho
Doa Rios, R. 2, Modesto.

VENADERA HERD OF JERSEYS is now
offering the heifer calves from register of
merit cows with official yearly record. Guy
H. Miller, Route 1, Modesto, Cal.

JERSEY BULLS—Serviceable age. Sons of
Gertie's Lad, who has two daughters that
made over 800 lbs. butter as two-year-olds.
A. A. Jenkins, Tulare.

BREEDER OF REGISTERED JERSEY CAT-
tle—Duroc Swine. Young stock for sale.
W. J. Hackett, Ceres, Cal.

JERSEY BULLS AND HEIFERS from Reg-
ister of Merit Cows for sale. C. G. McFar-
land, R. 2, Tulare.

YOUNG REGISTERED JERSEY BULL
CALVES at reasonable prices. O. J. Ames,
Oakdale.

REGISTERED JERSEYS—Young bulls and
bull calves. F. R. Purvine, Petaluma, Cal.

JERSEY BULLS from Register of Merit
cows. C. D. Hayworth, Modesto, Cal.

Other Breeds.

GUERNSEY BULL CALVES from Grand
Champion Bull. Also Hampshire Swine, both
sexes from Grand Champion 700-lb. boar and
Grand and Junior Champion Sow. Bella Vista
Herd, J. W. Henderson, 1st National Bank
Bldg., Berkeley, Cal.

EDGEWOOD FARM GUERNSEYS—First
in the show ring and in official records. Few
animals of either sex for sale. Edgewood
Farm, Santee, Cal.

BREEDERS OF REGISTERED SHORT-
Horns—Milk strain. Choice young stock for
sale. John Lynch Ranch, Box 321, Petaluma,
Cal.

INNISFAIR DAIRY SHORTHORNS—Reg-
istered young bulls for sale. Alexander &
Kellogg, Suisun, Cal.

AYRSHIRES—Registered; all ages. E. B.
McFarland, 412 Claus Spreckels Bldg., San
Francisco.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—
Breeders and Importers of Shropshire, Ram-
bouletts and American Merinos, both sexes.
Also Red Polled cattle. Take electric car at
Petaluma or Santa Rosa for Live Oak Ranch.

KAUPKE BROS., WOODLAND, CAL.—
Breeders and Importers of Hampshire sheep.

BISHOP BROS., SAN RAMON, CAL.—
Breeders and Importers of Shropshires.

CHAS. KIMBLE—Breeder and Importer of
Rambouletts. Hanford, Cal.

HORSES AND MULES.

STOCKTON PERCHERONS again winners
at Sacramento. Get next brother farmer.
H. G. Learned, Producer, Stockton.

REGISTERED SHIRES—Black Hawk Stock
Farm. Importers and Breeders. Easton & Ward.
Proprietors, Burlingame, Cal.

BEEF CATTLE.

WANTED—25 good Durham or Shorthorn
bulls, either yearlings or two-year-olds. Must
be registered. Also, 100 two-year-old steers;
50 yearling steers. Shorthorns preferred or
Durham range cattle. Address Frank H. Pro-
ctor, Union Savings Bank Building, Oakland,
Cal.

SCOTCH AND SCOTCH-TOPPED SHORT-
horns—We have the largest herd of straight
Scotch cows in California. Foundation stock
of both sexes for sale; also a choice lot of
range bulls. Barco Ranch, Hollister, Cal.

REGISTERED YEARLING SHORTHORN
Bulls—Heavy-boned, thick-meated Scotch
and Scotch-topped breeding. Ormondale Co.,
Route 1, Redwood City, Cal.

FAIR OAKS RANCH WILLITS, Cal.—Young
registered Shorthorn bulls for sale. Sired
by Landseer 379318, grandson of Imported
Villager 295884.

REGISTERED AND UNREGISTERED
Shorthorn Bulls and Percheron Horses for
sale. Paicines Ranch Co., 320 Sharon Bldg.,
San Francisco.

a choice lot of Shorthorn and Hol-
stein cattle as well as a select herd
of Berkshire hogs and the comple-
tion of these buildings will make this
one of the show places of the State.

SWINE AND SWINEMEN.

The aggregate output of hogs from
the Oakdale section this year has
exceeded \$75,000.

Twenty thousand dollars' worth of
hogs have been shipped out of Han-
ford in three days recently for the
San Francisco market. Still more
would have been sent had cars been
available.

W. W. Everett of the River Bend
Farm at St. Helena reports that he
has sold a large number of Durocs
of both sexes, since the State Fair
but that he has a choice lot of pigs
recently farrowed.

D. O. Lively of San Francisco con-
templates a trip through the Middle
Western States early next year in
search of foundation animals for his
purebred Duroc herd which he ex-
pects to establish at Mayfield.

H. P. Slocum and Son of Glenn
county have recently imported from
Nebraska what is said to be an ex-
ceedingly fine lot of registered Duroc
Jerseys. A portion of these were
for other breeders in the State.

W. M. Carruthers leaves tomorrow
for the East to attend the Interna-
tional Stock Show at Chicago. He
reports good sales of purebred hogs
during the past few weeks, having
sent to buyers over sixty head.

H. E. Boudier of Napa county re-
ports recent sales of seven head of
registered Duroc hogs to parties in
Napa county. The boar, Royal
Colonel, purchased by him from
Haden Smith, is proving to be a good
breeder and Mr. Boudier is expect-
ing great things from his get.

H. R. N. Boyd of St. Helena, Cal.,
is starting in the registered Duroc-
Jersey field. He has purchased his
foundation stock from River Bend
Farm, and, with abundant pasture,
combined with a thorough knowledge
of the hog business, is certain of suc-
cess in the future.

A new farrowing house with a
capacity of 12 brood sows has just
been completed by Homer Hewins
at his Napa county ranch. The
building is well lighted and ven-
tilated by windows on the south side
and will provide good winter pro-
tection for Mr. Hewins' increasing
herd of registered Berkshires.

J. E. Thorpe of Stockton reports
seven winners in the guessing con-
test held at the fairs the past season
on the weight of his Duroc-Jersey
sow, "Long Wonder's Queenie."

CROLEY'S CALF FEED with skim milk
will raise fine dairy heifers cheaply. Geo. H.
Croley Co., Inc., 631-637 Brannan St., San
Francisco.

HOPLAND STOCK FARM—Registered
Shorthorns. Prices on application. Hop-
land, Cal.

SIMON NEWMAN CO., Breeders of Regis-
tered Herefords. Newman, Cal.

REGISTERED HEREFORDS—H. H. Gable
Diamond G Ranch, Escondido, Cal.

GEORGE WATTESON—Breeder registered
Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, May-
field, Cal.

MISCELLANEOUS.

SAN FRANCISCO LIVE-STOCK EXPORT
Co., Eugene B. Croley, Manager, solicits for-
eign orders for purebred registered and merit
breeding animals and fowls. California has
great diversity of climatic and other condi-
tions that enable us to select animals that
have been raised under conditions similar to
those of the location for which they are in-
tended. We should be informed regarding
these conditions and be allowed ample time
to make selections. Nearly all disappoint-
ments in buying afar are the result of insuf-
ficient information as to conditions or to lack
of time for proper selection. Our plan and
terms for "raising animals to order" to fit
into peculiar foreign conditions is worth in-
vestigating. References: Dun or Bradstreets,
or San Francisco banks. Office 219 Under-
wood Building, 525 Market St. San Francisco.

CROLEY'S BALANCED PIG FEED for
growing youngsters; also cheaper hog feeds for
big hogs. Geo. H. Croley Co., Inc., 531-637
Brannan St., San Francisco.

HUMBOLDT STOCK RANCHES—Cattle cor-
respondence solicited. C. E. Robertson, 105
Montgomery St., San Francisco.

D. O. LIVELY, 216 Hobart Building, San
Francisco, buys and sells livestock—any kind
—any quantity.

DUROCS AND GUERNSEY BULL CALVES
Bred to 900-lb. boar. Ed. E. Johnson,
Turlock, Cal.

whose correct weight was 763
pounds. V. B. Garden of Selma,
eventually captured the prize as he
won from the other six in a draw.

A. B. Humphrey, Berkshire
breeder of San Joaquin county, ad-
vises us that he contemplates turn-
ing off about 500 head of purebred
Berkshires a year for pork in the
future. With that end in view he is
fattening a carload of choice Berk-
shires at the present time and is
constructing a modern fattening
barn. It is Mr. Humphrey's conten-
tion that there is more money in
fattening purebred hogs than there
is in grades and with this system he
will be able to make profitable dis-
posal of animals undesirable for sale
for breeding purposes, thus insuring
breeders the pick of the tops at all
times.

SHEEP.

Twelve thousand head of sheep,
the first of 36,000 to be brought in

A price of 30 cents per pound for
wool to Callaghan & Owens, sheep
growers of Livermore, broke records
for the highest price ever received
here in recent years.

It is said that more than 500,000
sheep are now on the annual winter
drive south from Flagstaff, Arizona,
to the plains north of Phoenix for
shearing and lambing.

Twelve thousand head of sheep,
the first of 36,000 to be brought in
from the ranges, arrived recently in
Visalia, and will be quartered in the
new feed sheds, holding 5000 at a
time, at the Visalia sugar factory,
where the Western Meat Company of
San Francisco is to undertake this
big feeding experiment.

CATTLEMEN'S RESOLUTIONS.

About fifty range cattle men from
various parts of the State assembled
in this city on Saturday last at the
annual meeting of the California
Cattlemen's Protective Association,
which was active and interesting
throughout. Henry Lynch of Mon-
terey county presided.

Resolutions were adopted as fol-
lows:

Favoring the holding of a live-
stock show in San Francisco in 1917:
the establishment of a U. S. Quar-
antine Station near San Francisco;
the requirement of watering facili-
ties, kept in order, in railway stock
corrals; legislation to make chattel
mortgages on livestock negotiable.

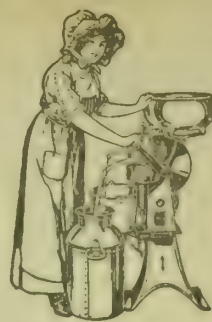
O. B. Fuller carried through an
amendment to constitution of the
association giving the directors the
power to assess all members 2c per
head of stock assessed to them to
finance the work of the society. In
accordance with such an amendment
members were speedily signed up
for a total of nearly \$3000.

The association revived its demand
for legislation like the "hide and
brand" bill, which the governor dis-
approved after the last session of
the legislature, to provide that all
cattle shipped must have hides and
brands registered by inspectors. It
is designed in great part to do away
with cattle rustling. An amendment
was suggested which permits the
farmer or butcher in remote sec-
tions of the State to kill cattle by
obtaining the signatures of two wit-
nesses to a certificate of inspection,
if upon twenty-four hours' notice
an inspector is not available. This
amendment, it was stated, would do
away with the objection raised by
Governor Johnson.

A special committee was appointed
to reorganize the association on the
basis of affiliation with local protec-
tive associations in different parts
of the State.

A resolution was adopted express-
ing deep regret that H. A. Jastro of
Kern county was detained by illness
from attending the meeting.

Officers were re-elected as follows:
President, H. W. Lynch; first vice-
president, Fred H. Blxby; second
vice-president (to be filled); third
vice-president, T. A. Trescony, and
treasurer, Ed de L. Cebrian. The
personnel of the executive committee
and the directors will be the same
as last year.



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you are wasting cream every day
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You can't afford to wait until next
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listed, described and priced in our new list just
off the press. Write for it today. Some great
bargains in high class stock from the West's
greatest Berkshire breeding establishment.

SILVER BIRCH FARMS,

Box R. P., Newport, Wash.

Livestock Facts and Fancies---X.

[By the Editor.]

We shall now break away for a time from the attractive line of preaching, that reforms in our present conditions of livestock marketing in this State must come through co-operative action of growers to understand and to change these conditions wisely and efficiently. We shall proceed to seek demonstration that the secret of success is to grow better animals, although conceding that marketing conditions do seem to prevent the grower from attaining success in fullest measure—which is the thing which is up to him for correction. As our associates are filling our columns continuously with demonstrations of what Californians are achieving in growing stock with more or less of purebred capacity and quality, as contrasting with scrub characters, we shall not intrude upon their occupancy of the local field. We shall select instances of the profitable superiority of purebred and high grade animals in the experience of growers at more distant points. The contention will be, though it need not be cited in each case, that, subject to local conditions which may need correction and will, we hope, soon get it, the growing of better animals is fundamental in profit-making here as well as in the distant localities indicated—is, in fact, fundamental everywhere.

First, just a word about the horse. It is clear enough that only horses which are best fitted to specific purposes are likely to live in the future. An all-around horse is as pointless as a pork barrel and is sure to be smashed when it rolls in front of a motor. A modern horse must have points and must get as close to a purebred, embodying these points in its generation of breeding for specific purposes, as possible. The animal which is just a horse has as small chance of yielding profit to its grower as its progenitors have of climbing out of the asphaltum beds where they have been found. This claim cannot be argued for lack of space; the reader must open his eyes and demonstrate it for himself. It is claimed that though this country has sold some 500,000 for war purposes, there are now more horses in the United States than ever before. And yet the pounding to pieces of "skates" on city pavements is closing the demand for common horses. It is reported from Chicago that in the period from 1911 to 1916 the number of licensed horse-drawn vehicles dropped from 58,000 to 49,000, and the number of motor vehicles increased from 11,000 to 43,000. This shows that the horse has not lost so much but that the motor has gained more, and we take it to mean that the "old plug" finds fewer holes to enter. It does not mean that good horses will lose as much as motors gain, for the country is growing and changing all the time. Kentucky is still raising some fine horses, which sell as high as \$1000 each, but the business has declined greatly. The five-gaited breed, selling from \$500 to \$5000, and the expert racing breed will very likely be revived. All over the country there is an increased interest in purebred horses which indicates a revival of horses

instead of their permanent retirement.

"Feeding" beef cattle for market is a very close business indeed. It looks as though it would be the influence of the purebred which would save it. Here is the experience of John Trumbull and son of Marshall county, Ill., who purchased 150 beef calves from farmers last fall and fed them out during the winter. Mr. Trumbull picked up these calves in the fall off of their dams on pasture. They were purchased from men who have rough land pasture that cannot be cultivated. He says the cows that raised these calves are mostly Reds of a good beef type headed with a purebred bull. Some of the cows are milked for a few months, and some of them are high grades with the color of purebreds. He paid an average of \$37 a head for the 150 calves. Some of the better ones cost him over \$40, these prices being at weaning time. He says he can afford to pay more for these calves than range calves because they still have the milk fat on them, and there is no freight to pay. He likes to buy them that way, too, because he can see the sires and dams, which he says goes a long way in picking out good feeders. It is evidently the purebred quality which helps the growers of these weanlings to get such a price and also makes it profitable for Mr. Trumbull to pay it.

How does the purebred do it? Well, take the word of the Missouri Experiment Station for that, as follows:

The purebred sire means: 1, uniformity; 2, individual superiority; 3, early maturity; 4, more marketable stock; 5, more money for your feed; 6, credit to the owner; 7, bigger profits.

The scrub sire means: 1, lack of uniformity; 2, mongrels and misfits; 3, late maturity; 4, poor market demand; 5, less money for your feed; 6, discredit to the owner; 7, loss and dissatisfaction.

These are some of the facts which explain why stock producers who are producing the good stock are the ones who stay in business when so many others drop out.

Consider these points well. Those who doubt the value of purebreds are quite apt to cry out against "fancy points" as valueless, and sometimes they are right. But these are not fancy points—they are the real issues in profitable stock growing.

GOATS TOO FAT TO BREED.

To the Editor: Two goats, one Angora, the other Toggenberg, have failed to get with kid. They are in good health. The Angora is extremely stout and 19 months old. The other is 21 months. They failed to catch in November, 1915, and again May 1, 1916. What months are best to breed goats?—A. D. G., Soquel.

[Breed them at any time you desire. It looks as if you had them too fat; and it will be best to reduce them in flesh before breeding again.]

Fred Mendonsa has rented from Will Gray 160 acres of uncut rice in the Cheney slough project, Colusa, and will pasture 2,000 sheep on it.

Southern California Breeders

December Sale

Tuesday, December 12, 1916

at the Rio Vista Holstein Farm

RIVERA, CALIFORNIA

70 Head of High Class Registered Holsteins 70
Tuberculin Tested

The cattle included in this sale are of exceptional individuality and are bred in fashionable lines. Every animal has been inspected and there is not an animal in this sale but what measures up to the highest standard.

The females that are bred are in calf to high-class sires, including the coming young sire

KING SEGIS PONTIAC JANNEK,

whose two nearest dams average over 33 lbs. of butter in 7 days. He is a son of the great KING SEGIS PONTIAC. This classy youngster is now at the head of Mr. Jas. J. Jeffries' herd and his future is particularly bright.

There are just a few bulls in this sale but they are real herd headers. They are sired by great sires and from high record dams.

CONTRIBUTORS:

EDGEMONT HOLSTEIN FARM, Burbank, Calif.

WHITTIER STATE SCHOOL, Whittier, Calif.

MRS. ANITA M. BALDWIN, Santa Anita, Calif.

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We will arrive about November 8 with the best shipment of Registered, Tuberculin-Tested

Scotch Topped Shorthorn Bulls

we have ever brought out from the East. We have visited the numerous herds in Nebraska, Iowa, and Missouri, and selected only large, growthy, heavy-boned bulls, ranging in age from 15 months up and in splendid condition.

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KIMBLE RAMBOUILLETS.

These sheep are purebred, large and smooth, with heavy fleeces of fine, long, staple, white wool. Yearling rams and ewes. Individuals or carload lots.

Prices reasonable. Correspondence solicited.
CHAS. A. KIMBLE, HANFORD, CAL., Breeder and Importer.

Dairy Herd Improvement Proved.

[Written for Pacific Rural Press.]

Three thousand two hundred and twenty-seven dollars a year is the additional income C. S. Rasmussen of Humboldt county receives on his herd of 132 cows as a result of herd testing for butterfat and the use of good registered Guernsey bulls for six years.

Seven years ago when Mr. Rasmussen took possession of his present ranch, comprising some 240 acres, he bred both Holsteins and Jerseys, but later decided upon Guernseys with the result that he not only purchased registered Guernsey bulls but a small foundation herd of registered Guernsey cows as well.

At the outset he entered his entire herd in the local cow-testing association, gradually culling out the older cows and those with poor yearly averages of butterfat, replacing them with younger females of his own breeding and out of the highest producing cows in the herd.

The result of this system is best explained by the annual reports of the Ferndale Cow Testing Association, which show the following averages for the years 1909 to 1914, inclusive:

Year	Cows tested.	Average lbs. fat.
1909	123	227.4
1910	121	279.7
1911	123	301.6
1912	113	313.1
1913	130	275.1
1914	132	308.9

It will be noticed that in 1913 the average decreased, but this was caused by flood conditions on the ranch and not by breeding or culling.

Clover and rye grass pasture, hay and root crops have been the feeds used exclusively, the cows being bred to freshen every 12 months, thus allowing them a 10-month lactation period and two months rest before freshening again.

Both the purebreds and the grades are run on a purely commercial basis, no attempt being made to get a high record on any one cow, but rather to keep them all on a high uniform average production of fat. Notwithstanding that, one of the registered cows, Gypson's Isabella, made 500 pounds of fat or the equivalent of 600 pounds of butter as a two-year-old.

Another factor which tends to keep down the herd's annual fat production is the addition of 25 to 30 heifers to the herd each year, making a total of 55 to 60 two- and three-year-old heifers in the herd at all times.

In the course of time this condition will be overcome, and as the purebreds increase in numbers, they will be cared for separately and put on official test, thus making a better average annual production for the entire herd.

Among the herd sires with which Mr. Rasmussen has accomplished his surprising results, some of which are still in use, are the bulls Imp. Raymond's Pearl King, sired by Imp. Raymond of the Preel IV. and out of Princess May of Hunguets IV., a prize winner in 1910 and 1912, having an official Island record of 585 pounds of fat. Two daughters of this bull sold at Florham Farm auction sale in 1915 for \$2,000 each, and Mr. Rasmussen has several

daughters of this bull in his herd at this time.

Among the younger bulls which are in service are Isabella's May King of the Pacific, a grandson of Imp. King of the May and out of Gypson's Isabella, with a record of 500.89 pounds of fat under dairy conditions as above stated. Pacific Glenwood Yekra, a grandson of Glenwood Boy of Haddon, who sired Dairymaid of Pinehurst who has a yearly record of 910 pounds of fat, is another of the young bulls now in service, and Isabella Pacific Glenwood is another one. This latter one was sired by Glenwood of Rosendale, a fine individual out of Countess Fantine, 502 pounds fat at two and a half years of age.

With his practical knowledge of herd improvement, as shown by results in the past seven years; and with climatic conditions favoring the growth of a large variety of rich succulent feeds, Mr. Rasmussen should be able to make some very creditable official tests in the future.

RAISING HEIFER CALVES.

[Written for Pacific Rural Press.]

In visiting dairymen in all parts of the State, it is evident that too much importance cannot be attached to the practice of everyone raising his own heifer calves.

Sometimes an entire community is visited where market conditions have not seemed to favor this practice; but usually at least one herd in all such districts is outstanding in quality both as to production and type.

Such is the case with the herd of John Foletta of Monterey county, where the custom for years was to make cheese, buying cows instead of raising them in the majority of cases but never seeming to have a definite object in view when they did breed for heifers; as bulls were selected indiscriminately.

For over 15 years, Mr. Foletta has been using purebred and registered Holstein bulls, sometimes paying what seemed an exorbitant price, but always with the view of improving his herd.

As a result of his work he now has what is conceded to be the finest herd of dairy cattle in the Salinas valley; and even though his product is sold to a milk condensary, he continues to breed and raise heifers.

Raising the Calves.—This is done by feeding whole milk for about two weeks after the calf is born; after which the whole milk is reduced and a handful of linseed oil cake meal added to each calf's ration. Water is also added to dilute the mixture, which is fed till the calf is 3½ to 4½ months old, the latter for calves born during the winter months.

By that time it has received a good start and is well able to care for itself on pasture till it freshens at two years of age.

Needless to say his breeding to good bulls has given him a larger herd production; and it has also made his females highly prized and priced among neighboring dairymen.

The melting point of southern-made butter is higher where cattle are fed cottonseed products.

Edgemoor Farm Guernseys



Imp. Itchen May King, 25174.

Pretty Productive Profitable

A Few Animals of Either Sex For Sale

SANTEE, CALIF.

H. F. SCRIBNER, Supt.

W. H. DUPEE, Pres.

Breed for Butterfat



Beryl Clothilde Hengerveld,
Champion in Butter-fat Contest,
Sacramento, 5-day record, 21.11
pounds, test 4.7 per cent.

My young herd bull, **DUTCHLAND SIR PIETERTJE CREAMELLE**, has high-test breeding, and is transmitting this breeding to his sons and daughters. Your tested daughters have records averaging 21 pounds, all testing better than 4%. One of these, **Clothilde Pontiac Creamelle**, is California Champion 2-year-old, with a record of 22.52 pounds at 2 years 1 month; test 4.72%.

Have a few fine young bulls that will soon be ready for service.

WRITE OR CALL AND SEE THEM.

F. STENZEL

Breeder of High-Test Holsteins.

SAN LORENZO,

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King Lancaster, sired by King Edward, grand champion bull State Fairs, 1909-10-11.

Shorthorn Bulls for Sale, sired by such noted bulls as King Lancaster, Knights Perfection, Greenwood Knight and Greenwood King. Nearly all offsprings of the famous King Edward.

These Bulls are conceded to be the best offering ever made from the Hillcrest Stock Farm. For Particulars Apply—

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HOPLAND STOCK FARM REGISTERED SHORTHORN BULLS

REGISTERED BERKSHIRES (Boars, Bred Sows and Gilts)
HERD BOAR, ROYAL POINTER 2nd, 197092, First Prize
Senior Yearling, P. P. I. E.
3 REGISTERED HOLSTEIN BULLS from High-Testing Cows.
SAN FRANCISCO OFFICE. 1210 FLOOD BLDG.

Three Years With a Silo and Silage.

[Written for Pacific Rural Press.]

In August, 1913, the writer visited the ranch of R. F. Guerin in Tulare county and found under way of construction a silo, also a farmer with enthusiasm for the silo, but an enthusiasm founded on the experience of others rather than on his own.

When we again visited Mr. Guerin this summer we found a man with a much broader vision of the benefits of silo than was the case three years ago.

Erected primarily for the purpose of affording his purebred Holstein herd a better balanced ration in connection with alfalfa we found it had filled that requirement to a nicety. Naturally it has saved hay, but of equal importance it has increased the milk flow perceptibly.

But above all that, it has made possible a better system of farming which has resulted in more feed being grown to the acre. This is accomplished by the plowing up of old alfalfa, badly infested with Bermuda grass, and using the land for grain and silage till such time as the ground is again in the proper physical condition for alfalfa planting.

After plowing up the sod in the fall the land is planted to barley,

usually in January or February—earlier plantings grow too rank and lodge before harvesting time.

By the latter part of June the grain is ready to harvest, the yield this year averaging 25 sacks to the acre. As soon as the grain is threshed the land is irrigated and plowed and then planted to corn, usually somewhere near the fourth of July. In the four seasons that he has grown corn Mr. Guerin has found that corn must be planted either as early in the spring as the weather will permit or else some time between the first and fifteenth of July. That also seems to be the experience of others in the same district.

After planting, the corn is cultivated till it reaches a height of six or eight inches, when it is irrigated, and another irrigation is applied when it begins to silk out. By culture the average yield of silage per acre has been around 15 tons to the acre, which, with the 25-sack crop of barley that has preceded it, makes the land handled in this way extremely profitable. So much so, in fact, that Mr. Guerin believes there should be a silo on every alfalfa ranch where dairy cattle are kept.

Work and Cows a Good Combination.

[Written for Pacific Rural Press.]

Plenty of hard work and dairy cows will help a fellow lift himself up by his boot-straps better than anything else R. F. Guerin of Tulare county knows of, for that is virtually what he has done since he came to California a number of years ago.

The first years were mostly hard work, for he started with small capital and had to get along with a poor bunch of cows. But even poor cows work while you sleep and little by little he was able to improve their breeding.

Finally he began growing alfalfa seed; and with the money from that, he bought purebred Holstein calves from one of the prominent Holstein breeders of that time.

To the average farmer's mind in those days this was a rank piece of

foolishness, but to Mr. Guerin it looked like good business, not solely on account of the possibilities of selling breeding stock because that end of the purebred business lacked development in those days, but because he wanted cows that would produce the maximum amount of butterfat.

Now after some 10 years' experience as a breeder Mr. Guerin looks at the business in the same light as he did when he started. It is to the purebred Holsteins that he gives most of the credit for the 180 acres of land that he now owns and farms; and while he has realized additional money for his young stock because of their registration, the cream check has been the big factor in all of his financial reward.

MENDOCINO COUNTY HOGS.

[Written for Pacific Rural Press.]

In Potter Valley, Mendocino county, hogs were shipped out by the hundreds last week. Not because they were shy of feed, as it is in some instances, but because the prices were right and the animals were finished and ready for marketing. They were some of the finest hogs I have ever seen.

As I was about to leave this Valley, I met Gowan Bros. one morning when they were loading up their truck with pigs to go to the Ukiah market. The boys told me that they usually hauled five at a time on their truck, but were unable to get on the fifth one that morning, so they had to take four and let it go at that.

These four pigs were about six months old, and when we got to town I found out what the four pigs weighed. They weighed 921 pounds, or nearly 231 pounds each. Some

pigs! How can it be done?

I will tell you in a few words how the Gowan Bros. did it: When in the dairy business at Shelter Cove, Humboldt county, they learned that skim milk was not only a great feed for small pigs, but also good for fattening them. They believe that all the grain fed to hogs should be properly ground. They found that ground barley mixed with skim milk from the dairy, if mixed and allowed to stand in barrels about 36 hours before commencing to feed, gives best results. Even corn ought to be soaked before feeding.

They raised about 50 head this year, and a butcher could hardly see the difference between them, so equal were they in size. The hogs were a cross between Poland-Chinas and Hampshires, and were sold in Ukiah for 7½¢ per pound.

Note: Unpasteurized skim milk is held responsible for the large percentage of tubercular hogs coming from the dairy districts.

THE RAREST OF HIS RACE

Uniformity

Production

Color

Manteca, King of the Black and Whites, 187787, is one of the most grandly bred bulls of the breed. His sire is King of the Black and Whites, a son of Marion Walker Pietertje, a 31.63 pound cow and grandson of both Aabby Hartog Clothilde, and Mary Walker Pietertje, each with a record of over 31 pounds. His first 7 dams are over 30 pound cows, 4 of which have each produced 30-pound cows, that in turn have produced 30-pound cows each with a 30-day record of 125 pounds or more.

The dam of our young bull is Belle Segis Colantha, daughter of Belle Segis, a 31.60-pound cow, the 2d best daughter of King Segis. The dam made a record as a 2-year-old, of 17.84 pounds with first calf, and she is just good enough so that I will refund \$400 of the purchase price of the bull if she does not make 30 pounds or over next spring.

The first 13 dams in his pedigree average over 30 pounds. Where can you find better breeding than this?

This bull is a fine individual, more white than black.

PRICE \$1250.

Write for prices and pedigrees to

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SACRAMENTO



Labor Saving
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Feed Carriers
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Shorthorn Bulls You'll Like

That's the Only Kind we have in our Offering for this season, for above all things we want you to be satisfied.

Our herd of Registered Shorthorns has been selected at considerable expense with the idea of raising heavy-boned, thick-meated and growthy bulls.

THE KIND THE TRADE DEMANDS

Come and See Our Herd, 7-miles from Palo Alto on the Woodside Road, or Write Us for Pedigrees and Prices.

Shorthorn Cattle
Duroc Jersey
Swine

ORMONDALE CO.

R. F. D., No. 1,
Redwood City
California

Nothing adds to the cost of hay more than handling and for that reason R. F. Guerin of Tulare county stacks all of his hay for winter feeding in the field.

This field is also used for pasture and to regulate the amount of hay eaten by the cattle a fence is strung around the stack. During the winter the hay is fed from the stack instead of hauling it in to the milking barn which would necessitate a lot of additional work at no saving in hay.

POLAND CHINAS

We have 20 head of good gilts and 2 two-year-old sows for sale. Either sired by or bred to I. B. A. Wonder, Reserve Champion at the P. P. I. E. Also a few extra good young boars ready for service sired by I. B. A. Wonder.

Also a fine lot of Fall pigs.

We please you or refund your money.

W.A. YOUNG, Lodi, Cal.

Why Do Little Pigs Die?

To the Editor: When anything ails a little scrub black pig, I can bring it to the house and after proper treatment of a few days, put it back in the pen in fine condition. Since I have been breeding a registered Yorkshire boar on common sows, if, at farrowing, any of these white ones are not just as lively as they should be and I take them home for treatment, as I did the scrubs, they die every time. I have stopped trying with them. What is the matter? I give them cow's milk, warm from a bottle, but they scour on it, while the scrubs do not, and any scour treatment that I give is of no avail. Are young Yorkshire pigs not robust? Should cow's milk be diluted for baby pigs? I tried that too, but nothing would bring them on. The black ones thrive on whole milk.—A. L. W., Barstow.

[Answered by C. F. Tubbs, Calistoga.]

Purebred swine are able to assimilate a great deal more nutriment than scrubs—that is, a given amount of feed will go further with purebreds than with scrubs—hence the reason for the former making faster and cheaper gains.

A young pig's stomach is very susceptible and easily disarranged, and if fed too much whole milk will assimilate too much protein therefrom, become scoured, and probably develop acute indigestion, from which it dies. An experiment along these lines was made at the Iowa Experiment Station not long ago, in which purebred weanling pigs were fed whole milk until they died, the reason being—too much protein and lack of carbohydrates to make a balanced ration.

Skimmed milk is much better, and can be fed without fear of disastrous results, although a certain amount of whole milk would do no harm.

I have never tried taking a young pig away from a sow, shortly after it has been farrowed, as the teat which it has been suckling will dry up almost immediately, and hence it will not receive sufficient nourishment after it has been put back. I think it better to leave a pig alone, and it will usually come out all right if there is nothing materially wrong with it.

One of the main characteristics of the Yorkshire breed is the lively, healthy litters they produce, and the strength of the pigs from the day they are born.

I had a good deal of experience raising scrubs before establishing a Yorkshire herd, but none of them could compare with Yorkshires in this respect, consequently I have never had occasion to try doctoring a Yorkshire pig in the manner described by Mr. Waterman.

If the young pigs are not as strong as they should be, it would appear that the sow has not had proper care during pregnancy, lack of mineral matter, or something of the sort. Perhaps she was fed too soon after farrowing. Purebreds require more care than scrubs, but they are so much more profitable to raise that any extra care or labor expended will come back many fold in the returns.

[Answered by A. D. McCarthy, Riverina Farms, Modesto.]

We have 50 purebred Yorkshire brood sows on our place that farrow an average of ten pigs and raise bet-

ter than an average of eight. It is impossible for me to answer the Waterman letter intelligently for the reason that I don't know how the sows are handled or fed. A Yorkshire sow regularly farrowing 9 to 14 pigs, if the entire litter is to be raised, would probably require different treatment before farrowing than a scrub sow farrowing 4 or 5 pigs and probably raising 3. If both the scrub sow and the Yorkshire sow are fed properly, the Yorkshire sow will not require any more feed than the scrub sow in order to grow out the pigs properly before farrowing and furnish sufficient milk to keep them in a strong, healthy condition; but it is probable if the two sows were turned out to rough it that the ten pigs of the Yorkshire might not be as strong as the four pigs of the scrub. The Yorkshire is generally admitted to be one of the most hardy of all breeds. We have never had any trouble and never heard of anyone else having trouble with weak pigs from Yorkshire sows. We occasionally do have a weak one and we don't waste much time with them. If they are chilled or anything of that kind we take them in, feed warm milk and if they show signs of vigor, we put them back with the sow. If they don't come around quickly, we put them out of their misery.

Our experience has been that in raising both Yorkshires and other breeds, the Yorkshire will thrive on whatever is good for any hog.

CHEAP SCALDING WATER FOR THE DAIRY.

[Written for Pacific Rural Press.]

A simple but efficient sterilizing vat and fire box is in use on the ranch rented by Healion Brothers in Monterey county.

In making it a heavy piece of sheet iron was used for the fire box and kettle support, being round in shape, riveted at the ends, and about three feet high, with an opening near the bottom for firing purposes.

The large iron kettle fits snugly into the top of this iron frame and the entire outfit sets on the concrete floor of the milk house, having a stove-pipe connection to carry off the smoke. A board cover lies on top of the kettle to keep the steam from escaping. When necessary the entire outfit can be taken apart with little trouble or moved to another place on the cement floor. With it there is no danger of fire and it is easy to keep in clean and sanitary condition.

Following is the list of cows in the Yolo, Solano, and Colusa counties cow-testing association that produced over 50 pounds of fat for the month of October: C. Garrett, Williams (D), 79.95; O. P. Gilliam, Dixon (H), 67.73; J. Watson, Dixon (H), 62.82; J. Watson, Dixon (H), 60.10; W. W. McNair, Dixon (J), 59.13; J. Watson, Dixon (H), 58.25; G. B. Isham, Woodland (H), 54.34; Hughes Bros., Woodland (D), 53.45; H. and O. Wildenkorf, Woodland (H), 52.96; W. H. Martin, Woodland (H), 51.60; O. P. Gilliam, Dixon (H), 51.47; F. Beebe, Woodland (J), 51.00; W. W. McNair, Dixon (J), 50.97; W. Gould, Woodland (H), 50.94.

The Alpha Automatic Power Spray Outfit

Fitted with 2 in. or 2½ in. Automatic Duplex or Triplex Pump.

Equipped with the New Mechanical Automatic Pressure Governor



THE TWO ESSENTIALS in a power sprayer are a thoroughly dependable engine of ample horse power and a positive and reliable pressure regulator that will insure uniform pressure and safety; also eliminate unnecessary wear.

THE AVERAGE SPRAY RIG IS EQUIPPED with a cheap engine and a makeshift pressure relief valve or diaphragm, which is exposed to the corrosive action of the spray material, which soon puts it out of commission.

THE ALPHA AUTOMATIC PRESSURE GOVERNOR with which the Alpha Spray Outfit is equipped is a simple arrangement of a combined lever and spring on each plunger connecting rod, which, when the pressure reaches a pre-determined limit, automatically discontinues the operation of the pump without interrupting the driving power, again permitting it to resume operation when the pressure falls below the point at which it has been set.

THE POWER PLANT DEPENDING on the size rig is either a 2½ H. P., or a 3½ H. P. Alpha Engine, equipped with a "built in," gear-driven, positively timed magneto, requiring no batteries or coil, and is easily started on the magneto without cranking.

CAN YOU AFFORD to own a spray outfit that will balk? When you get ready to spray you have no time to tinker with a defective engine, pump, or relief valve, but want an outfit that is capable of a continued high pressure maintenance, and one that is thoroughly dependable in every particular.

THE ALPHA AUTOMATIC SPRAY OUTFIT will meet your most exacting demands. The entire frame work is made of channel and angle iron, fitted with a wrought steel bed-plate on which the engine and pump are mounted, direct connected with machine-cut steel gears.

BUILT IN ALL SIZES from a 2-inch pump and a 100-gallon tank to a 2½ by 3-inch pump and a 200-gallon tank. (Either duplex or triplex.) Brass fitted throughout.

IT WILL PAY YOU to investigate thoroughly the merits of the Alpha Combination Power Sprayer before buying.

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These heifers are the property of the La Hacienda Ranch. For the sake of convenience they will be sold at the Geo. A. Smith Home Ranch, 2 miles south of Corcoran.

TERMS: A credit of 12 months will be given with approved security. Notes to bear 8 per cent interest. Five per cent discount for cash.

IN ADDITION TO THE ABOVE GEO. A. SMITH WILL SELL:

10 Registered Holstein Bulls, ready for service, from great milk and butter producing ancestry.

10 Registered Poland China Sows, and 10 Registered Poland China Gilts, sired by Iowa Wonder and bred to Joker, First Prize boar at the Wisconsin State Fair.

10 Registered Poland China boars ready for service.

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Western Meat Company

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Regular Milk Flow.

[Written for Pacific Rural Press.]

Three silos with a total capacity of 645 tons play an important part in the feeding operations on the Peacock Dairy in Kern county, where 145 dairy cows are milked, and where it is necessary to secure about the same milk flow each week in the year in order to fill a whole-milk contract.

Here silage is so well thought of that it is used as a feed in connection with alfalfa hay and brewers' grain during the major portion of the year, being substituted when the supply is exhausted by dried beet pulp.

This year 90 acres of land were planted to corn, Red Cob and Yellow dent being the seed used, but the former being preferred because it produces more fodder.

The custom is to grow a crop of barley hay on the land before the corn is planted, this calling for corn planting about the last of June. Before planting, the land is plowed and then irrigated, the dry plowing being practiced because it tends to retard the growth of Bermuda, which is a serious pest in the locality.



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Grade up with a Jersey Bull! He is half the herd, and the breed determines half the profits. Breed him to your grade cows and bring the herd average near the Jersey average—489 pounds of butter fat per year. Your calves will be beauties. They'll mature quickly into gentle, hardy, vigorous and persistent milkers, long-lived and adapted to any climate. Let us tell you more about them. Send for our book, "The Story of The Jersey." It's free and it's a dandy. Write for it now.

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Thorough cultivation is given the fields as long as practicable and when it is no longer possible to drive through the field, another irrigation is applied for the purpose of pushing the later growth along faster through the additional moisture supply. By this system of culture the usual yield is 15 tons to the acre.

Not the least of the advantages of a silo on this ranch is the fact that it keeps the milk flow up as well as pasturing, without the resultant loss from bloat, loss of feed, and damage to alfalfa plants that follows pasturing. Sometimes pasturing is practiced on old stands in the fall, after the last cutting, but never on young alfalfa.

BEET PULP AND ALFALFA.

To the Editor: If grade Holstein cows, fed alfalfa hay and a little pasture, give one pound butterfat per cow per day, will it pay to feed 5 pounds dried beet pulp per day per head when it costs 1 1/2 cents per pound?—R. D. K., Richfield.

This question was answered in the issue before it was asked. We would add that alfalfa hay alone is not an economical feed for cows because its excess of protein over the required ratio of protein to carbohydrates is wasted, while it could be used for additional production if combined with a carbohydrate food to balance its excess protein. If your cow is not far past freshening, a noticeable gain in milk and butterfat would probably follow addition of beet pulp to the ration. If she is far along, the beet pulp will put her in good condition for heavier production after her next calving.

Veterinary Queries.

TELLING COW'S AGE.

To the Editor: A cow has four rings around the horns. How old is she? Can you tell a cow's age by her teeth?—M. F., Groveland.

[Rings around the horns are not absolute proof of age. The teeth are positive proof. At four she will have six permanent incisors; and at five all eight of the incisors will be permanent.]

PERSISTENT DIARRHOEA.

To the Editor: A cow has had diarrhoea all summer but eats well and is in fair condition. Was feeding alfalfa meal and coconut cake, but stopped that and now give her dry pasture and alfalfa hay. Is not any better. Has access to salt. Will chew any piece of leather she can get. She is in calf and milking well. Does not cough or have any difficulty breathing. Is 15 years old.—A. C. S., Hayward.

[Age is against this animal. Give her four 30-grain tablets of sulphocarbolates twice a day.]

SWELLING ON HOCK.

To the Editor: A 16-months colt has a bad swelling on the side of the hock, but from no apparent injury. It is gradually growing larger, is soft, and does not seem to bother the colt.—H. E. J., Woodland.

[Apply tincture of iodine to this swelling with a tooth brush and rub in well for five days; then skip four days and repeat this process for an indefinite period until a cure has been attained.]

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Our supply of these young sires is always limited, but we have a few now which we are offering at very reasonable prices.

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Raising Poultry for Profit

PULLETS SPOILED IN THE RAISING.

[Written for Pacific Rural Press by Mrs. Susan Swayngood, Pomona.]

Some interesting facts may be reached from the egg-laying contests, when they are carried on by people who know and are willing to tell the truth concerning them.

In Petaluma Poultry Journal for Nov. 15, we learn that Mr. Hogan, of the Hogan system renown, was called to Pullman, Washington, to select the layers for the contest now going on. Mrs. Helen Dow Whitaker, director of the Washington experiment station, gives a few sidelights on the manner of judging the pullets. Mr. Hogan was handling a pullet which should produce 115 eggs in present condition and 220 eggs in good condition. Said she to him, "There is a chance for us to make a good showing in the contest." "No," said Mr. Hogan, emphatically; "there is where you make a mistake. This bird is immature; she has a slight cold; she has other indications of low vitality. With such a handicap, in spite of all you can do, she will mature so slowly that she won't get down to laying until January. She has then only nine months instead of twelve to make her record in. Further, she has not the vigor to digest enough food to lay heavily during those nine months." "Then," I asked, "why do you score her 220-egg type?" Because," said he, "that is her type—the capacity, the build is there, but she couldn't lay 200 eggs."

The reason is this: the pullet had been hatched late, from stock that was probably overworked as breeders, or overfed, to make them produce more eggs; then, in addition to being hatched late, from weak parentage, the weather had not been ideal, and she had caught a slight cold, perhaps in chickhood, that was never quite cured, and she had not been fed just right all along the journey.

People that raise good, well-boned, vigorous, healthy pullets, that are fit to hold their own in an egg contest, are as few and far between as the great stars in drama. I am not afraid to say that ninety-nine pullets out of every hundred are spoiled in the raising. People do not need to keep thousands of hens to make a comfortable living, if they adjust the business so that some pullets are coming in to lay when others are resting, and they raise the pullets in the right way. Mrs. Whitaker states that there are 1116 hens in the contest. During the first 17 days 2073 eggs are laid, and they were sold for \$79.46. Still further in her account, which I have received from a Washington friend, she says, "Twelve hundred hens, well selected, can be made, in a year, to yield a profit of 10 per cent on the capital invested, and a monthly salary of \$100 or over, depending on the skill of the caretaker."

To get her figures she estimates the lay of the 1200 hens at 150 each, or egg sales totaling \$4500 for the year. At the end of the year the birds would be worth 30 cents each, or \$360, for table purposes only. Mrs. Whitaker places the cost of

feed for each hen at \$1.80 cents, the total cost for the year reaching the sum of \$2160. Adding the cost of hens, or raising pullets at \$1 each, would bring the total cost up to \$3,360. Interest at 10 per cent on cost of housing the birds was figured at \$240 for the year, and salary of the owner, or caretaker, at \$100 a month, adding \$1200, giving a grand total expenditure of \$4800.

There are one or two things that might play havoc with that \$100 a month and 10 per cent. Mrs. Whitaker forgot that some of the flock would most likely turn up their toes; perhaps they might be ungrateful enough to do so before laying any or all of the portion of eggs allotted out to them as their part in the rounding up of the grand total of figures. Second, I read that paper to a man who has lived in several parts of Washington, and he says: "Somebody ought to go and steal that egg-laying contest before it gets into trouble. He says you can't sell eggs for cash at any price in Washington; every farmer keeps a few hens, and the farmers' wives trade the eggs for groceries or whatever they want, getting about 10 cents a dozen as an average price in summer and more in winter, but that 'real' money is seldom passed in a farming community for eggs in Washington."

In California I know that we can not raise good pullets for \$1 apiece, but feed is sure to be cheaper in Washington. And it is quite possible, too, that marketing conditions have improved since my friend lived in Washington; time was when we, too, traded eggs for groceries, but we have several big markets in this State, while Washington has not any big centers that are not surrounded by thousands of acres of land, fit only for farming and livestock. Our fruit industry cuts off very many people from raising poultry, because they cannot raise any feed for them. So, taking things altogether, we may say this is the ideal State for poultry raising from every point of view. We have the climate, the cash markets, big centers that demand quantities of eggs and poultry at fair prices.

QUESTIONS ANSWERED.

Hen's Necks Drag.—A few of our chickens have something the matter with their neck this week. They drag it on the ground, and run their head in the ground, and are not able to stand up. I hold their throat so that they can't swallow, and pour some coal oil in, and let it run out, then grease the neck with oil and lard, and they seem to get all right in a few hours. Kindly tell me what it is.—Mrs. G. E. S.

Your hens have been eating maggots that lodged in the throat. It would not hurt to let some of the coal oil go down the throat. Your treatment is as good as any, but you should find the source from which the hens are getting the maggots, or some may die.

Tobacco vs. Worms.—How much tobacco shall I use for worms for grown hens and young chickens; and how often shall I give it to them to keep worms down in general.—R. P. F.

Soak the tobacco in hot water un-

til it is strong, about like black tea. There is no particular amount. I would just mix about a quarter pound to 100 hens, and mix in mash so, all will get it. About once a month for keeping them clear.

Chickens' Feet Draw Up.—What is the cause of chickens losing the use of their legs. The feet draw up and seem to be in a paralyzed condition. Have good henhouse, feed wheat mornings and nights, ground wheat and barley at noon, and plenty of fresh water.—G. W. M.

Your chickens have rheumatism; the cause is not so easy to discover. It may be from inherited weakness, from cold, damp ground, or from a lack of some such element, as iron in the drinking water.

If the attack is recent, put the birds on a good bed of straw, and let them have all the sunshine possible. Sometimes a change of climate will both cause it and cure it. I bought a very valuable bird once from another State, and two days after he arrived I found him stretched out on his side with his toes all drawn up. I removed him to a sunny place that was protected from north winds and rain; and in a week he was all right, and never had another attack. If you will shelter the birds, and give them a little iodide of potassium in the drinking water, you will be doing about all that is possible. Give fifteen grains of the potassium in one quart of drinking water and see that they drink it. Also, if you can manage to add some alfalfa, green or dried, to your noon mash, it will be a great help. While your feed is generous, it is rather one-sided.

How Many Males?—Please tell me if all geese hiss, or is it just the ganders. Also will two geese lay fertile eggs from one gander? Also how many roosters with thirty-six hens—Black Minorcas?

No the geese do not hiss—just the gander, and he stretches his neck out when he hisses, as a rule. Yes, two geese to one gander are all right. Give them a tub of water to mate in, or there will be no goslings. You will need at least three males to thirty-six hens for good results, and four would be better.

Sparrows Eat Feed.—I am building a new poultry house and scratching shed, as the sparrows rob my chickens of so much feed. Can you tell me how to keep them out of the scratch shed.—J. B.

Use one-inch mesh wire on the front instead of the regular two-inch; the birds got through my two-inch mesh wire and ate and scratched

Send For A Sample Of Calmade Graduated Poultry Fence

10 inches graduated in mesh from 1/2 inch to 1 1/2 inches then 20 inches of 3/4 inch mesh, topped by 4 1/2 inch mesh for the height of the fence.

The Fence Without a Sky Line

It is the most economical as well as the most practical of all poultry fences. It costs no more to buy than the old style poultry netting and costs much less to put up.

It is the only fence made with a bottom mesh smaller than one inch. It will turn the smallest chickens. Because of the straight line, continuous weave of "CALMADE GRADUATED" Fence, baby chicks won't hang in it, large fowls can't climb it. "CALMADE GRADUATED" Fence will not slip at the joints nor unravel when cut. Uniform in weave and width. It unrolls flat as a board—it is easily put up and stretches without bulge, kink or bend on posts 16 feet apart. Learn all about these advantages and let your next fence be a "CALMADE GRADUATED." Write at once for free samples of wire used, free illustrated folder and name of nearest dealer.

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my sprouted oats until I put one-inch wire on. Now they can't get in. It costs a little more but it saves much more than the difference in cost.

The present has been one of our best turkey seasons.

CHINESE EGGS.

The American egg-preserving plant, owned and operated by the Amos Bird Co., of Boston, Mass., and recently completed at Shanghai, is now handling 300,000 eggs daily. The product is either frozen or dried, and shipped to the United States, at present via the Pacific Coast.

The frozen product is divided into three classes—whole eggs, egg yolks, and whites of eggs. The dried product consists of whole eggs and egg yolks. In both instances the eggs are churned or "scrambled." The albumen is largely used in the manufacture of candies in the United States, while there is a demand for the frozen product at bakeries and hotels.

American machinery is used in this plant with results which are entirely satisfactory. The eggs are purchased in the Shanghai market, and the price paid averages more than half a cent apiece. Two hundred Chinese are employed and half of these are girls. Chinese girls break and examine the eggs, handling an average of 3,000 a day. In the same class of work in the United States, it is understood that American girls break and examine an average of 4,000 a day. Chinese men "candle," or examine eggs by holding them before an electric light, and average about 16,000 a day. All the Chinese employees are inspected by an American physician and all are vaccinated. Cleanliness is noticeable on all sides.

It is estimated that the Chinese girls and other employees in this egg plant are paid less than a quarter of the wages received by Americans in American plants of a similar character. While the Chinese girls will, no doubt, become more proficient with experience, they are not yet able to perform as much work as female labor in similar lines in the United States. Their present pay is approximately \$5 a month. — Consular Report.

MASH FOR HENS.

To the Editor: Kindly send me a formula for a mash feed for laying hens.—W. V. T., Watsonville.

[Answered by Geo. H. Croley, San Francisco.]

A very good, simple formula, for laying hens, that can be fed either moist or dry is made of the articles mentioned below. These are all staple articles that are for sale in practically all feed stores. Articles by weight:

Twenty lbs. bran; 20 lbs. shorts; 20 lbs. white middlings; 20 lbs. ground barley; 15 lbs. meat scrap; 5 lbs. ground bone; 2 lbs. granulated charcoal; 3 lbs. fine ground shell.

The above mixture fed with about 100 pounds commercial scratch feed, or mixture of a number of different kinds of grains, will come very near being a perfect balanced ration.

OATS OR BRAN?

To the Editor: Please tell me which is the best feed, ground oats, or wheat bran?—Mrs. M. H.

Good wheat bran contains 88 per cent of dry matter, 5.8 ash or bone-and-shell maker; 12.2 per cent protein or muscle-maker; 45.3 total carbohydrate and its nutritive ratio of protein and carbohydrates is

1:3.7. Wheat bran varies so much in quality that it is hard to say when it is good. If good it is richer in protein than oats, but it does not contain as much starch or oil. As a whole, good ground oats are cheaper, because they contain more heating value than bran. Pound for pound, you will get more food value at the prices now quoted than you will from bran.

LEAVES FOR LITTER.

To the Editor: Are dry leaves suitable for chicken litter or part of it?—B. L. B., Modesto.

Dry leaves are good for chicken litter, if they are not allowed to become moldy.

POULTRY NOTES.

Orland is to have a poultry show early in 1917.

The poultry crop of Fallon, Nev., yielded last week about \$12,000 cash. Turkeys figured largely in the shipments.

The annual State Poultry Show to be held at Modesto Dec. 6 to 9 will be under the direction of the Stanislaus Poultry Association.

The poultry convention of Loomis last week resulted in the organization of the Placer County Poultry Raisers' Association.

J. Will Blackman, president of the National Poultry Company, and breeder of fine bronze turkeys in the Imperial Valley, has just sold a fine bronze gobbler of 40 pounds for shipment to Bringham, a suburb of Melbourne, Australia.

M. A. Schofield of Gardena, at a meeting recently, in speaking on breeding of poultry, said: "There is much to be said on feeding the hen to see that she gets the right amount of food units in her egg. A watery egg never hatches a good chick."

William Young of the Young's Market Co., Los Angeles, is just back from an inspection trip through the turkey country of Arizona and the Imperial Valley, California. He says he found turkeys scarce and high; the high price of feed causing growers to market their turkeys early and save feed.

Entomologists of the United States Department of Agriculture have demonstrated that all species of lice which infest poultry may be quickly destroyed by the application of a very small quantity of sodium fluorid, according to the annual report of the Chief of the Bureau of Entomology just issued. Entire flocks of poultry were cleared of the parasites in this way and were found to remain free when ordinary precautions were taken against reinfestation by contact with infested fowls.

That eggs are high and getting higher, should surprise no one, when it is known that there is a marked shortage in cold storage stocks and that this is the period of low production. Consumption is holding up fairly well, and some eggs are being exported by the way of Canada. The government report shows that there were in 142 cold storage warehouses November 1, 1916, 2,794,295 cases against 3,686,533 cases the same date last year, a shortage of 1,392,238 cases. This showing, with the fact that winter has yet to be gone through, has caused a general and decidedly bullish sentiment.

MOTOR CAR FIGURES.

President F. L. Brown of the Elgin Motor Car Corporation, Chicago, is one of the industry's most optimistic boosters. He quotes below a few of the industry's staggering figures:

Motor cars registered in 47 of the world's leading countries, 3,108,468. Motor cars now registered in the United States, 2,500,000. Value of cars owned in U. S.,

\$2,500,000,000.

Average value per car, \$1,000.

Number of cars to each mile of American highways, 1.

Proportion of cars to U. S. area, 1 car to each 1½ square miles.

Increase in real estate values due to transportation by automobile, 100 to 400 per cent.

Value of cars exported in 1915, \$100,000,000.

Annual new roads and improvement expenditures, \$300,000,000.

Motor car steel used in 1915, 670,000 tons.

Imitation leather used in 1915, 3,280,000 yards.

Top material used in 1915, 11,405,250 yards.

Hickory and other woods used in bodies, 1915, 8,450,850 board feet.

Hinges used in 1915, 4,893,560.

Additions to factories in 1915 total 11,000,000 square feet.

Cost of these additions, \$12,000,000.

Number of motor cars which made the transcontinental trip in 1915, 5,000.

Number of men employed in the industry (approximately), 700,000.

In the United States there is one car to every 40 people.

In Iowa there is 1 car to every 19 inhabitants.

In Los Angeles there is 1 car to every 8 inhabitants.

To test out the commercial feasibility of the manufacture of potash from kelp on the coast of Southern Calif., the U. S. Dept. of Agriculture has definitely decided to go ahead and establish the experimental station, for which \$175,000 was appropriated by Congress at its last session.

It is announced from Highland, that Stockton and Patterson, owners of the Hoosier ranch, have sold their orange crop on the trees, off forty acres, estimated at 28,000 field boxes, for \$18,000 cash.

Poultry Breeders' Directory

ROOFDEN RANCH CHICKS—January will soon be here. Book your orders now for early delivery. Barred Rocks, B. I. Reds, Black Minorcas, Brown and White Leghorns. Quality chicks from first-class breeding stock. Hatched right and shipped right—at right prices. By the dozen or thousands. We can fill it if you book in time. Circular for the asking. Roofden Poultry Ranch and Hatchery, Campbell.

BARRIED PLYMOUTH ROCKS—(Cockerels—Cockerels—Cockerels—Yes, we have them; also Hens and Pullets—all bred from our Champions. Winners at California's leading shows. Also hatching eggs. If it's Barred Rocks you want, get in touch with me right away. Have bred them exclusively for nineteen years. Send for Catalog, Chas. E. Voden, Box 296, Los Gatos, Calif.

WANTED—A number of hot water incubators. Jubilee preferred. 200 egg capacity or over. 220-egg type, Hoganized, S. C. White Orpingtons and Sicilian Buttercups, cockerels, hatching eggs and chicks. All information gladly furnished. M. S. Woodhams, San Mateo, Cal.

INCUBATOR CHICKS—Thoroughbred White Plymouth Rock, \$25.00 per hundred; White Leghorn, \$12.50 per hundred. Highest class of stock bred to standard and to lay. Awarded all first prizes at California State Fair 1916. Mahoney Farm, P. O. Box 597, Sacramento, Cal.

CROLEY'S DRY MIXED INFANT CHICK—Feeds for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by Geo. H. Croley Co., Inc., Poultry Supplies, San Francisco.

McFARLANE STRAIN White Leghorn Eggs, \$1.50 per 15, \$2.50 per 30, \$5.00 per 100, \$8.00 per 1000; chicks, 12c each, until March 1st, then 10c. Big plant, lowest prices, best stock. Catalogue free. Newton Poultry farm, Dept. 1, Los Gatos, Cal.

DANISH S. C. W. LEGHORNS—If you want to increase the size and vigor of your stock or the size and number of your eggs, use one of our cockerels. River Bend Farm, St. Helena, Cal.

THE SANTA CLARA VALLEY HATCHERY solicits your orders for Fall and Spring delivery in all breeds of baby chicks. Order early and get the best. Jos. A. Bihn, Lincoln Ave., San Jose, Cal.

SICILIAN BUTTERCUPS—Best stock from Vermont and Pennsylvania. Fine cockerels with spotted hip fluff, bring spotted pullets; \$5 each. Eggs from extra fine matings, \$3 per 15; \$5.50 per 30. Orders booked for Spring delivery. Home half mile west of Graton. All welcome. J. Parnell, Rt. 1, Box 64, Sebastopol, Cal.

BABY CHICKS NOW READY—Hatches every week. R. I. Reds, Barred Rocks, White Leghorns hatching now. Brown Leghorns and Black Minorcas later. Place Spring orders now, and be sure of getting them when you want them. Send for circular and price list. Campbell Poultry Ranch, Campbell, Calif.

EASTMAN'S BRED TO LAY Barred Plymouth Rock Chicks, Eggs Cockerels. Fairmont Poultry Farm, Fairmont, Cal.

WHITE WYANDOTTES—Blue-ribbon winners. Eggs \$2 to \$5. Chicks, pullets, cockerels. R. W. Staweteld, Route 2, San Jose, Cal.

HATCHING EGGS from our "Bred-to-Lay" S. C. White Leghorns. Season opens Dec. 1st. The early hatch lays the early winter egg. Booking now. E. H. Dickinson, Dept. IV, Los Gatos, Cal.

HIGH GRADE ANCONAS—Fancy and utility. Settings, \$3.50. Fertility guaranteed. J. R. Bell, Livermore, Cal.

SILVER-SPANGLED HAMBURG—Hens, Pullets, Roosters. Entire flock. None better. Tribble Nurseries, Elk Grove, Cal.

DAY-OLD CHICKS—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

CHICKENS, DUCKS, GEESSE, GUINEAS, Pea Fowl, Pigeons, Wm. A. French, 545 W. Park St., Stockton, Cal.

BLACK MINORCAS—A few well-bred cockerels, \$2 each. Mrs. C. E. Parsons, Nevada City, Cal.

TURKEYS, DUCKS AND GEESSE.

BOURBON RED TURKEYS—Early maturing, creamy skinned. The stay-at-home kind. Our stock winners at P. P. I. E., Los Angeles California State Fair. Rich, dark-red young Toms, sired by 1st Los Angeles Old Tom, \$8 and \$9. Pullets, \$6. Can mate stock not skinned. Ferris Ranch, Rt. 2, 144 D. Pomona, Cal.

BOURBON RED TURKEYS and Eggs for hatching. My birds won all the honors in the Alameda County Poultry Exhibition in Oakland, 1914, and just as fine this year. A. E. Balmer, Alhambra Valley, Martinez, Cal.

THOROUGHBRED WHITE HOLLAND and Bourbon Red Turkeys. Toms \$5; Hens \$2.50. Old White Holland Toms, \$7.50. Pearl Guinea, \$1 each. E. A. McKinley, E. D. Ukiah, Cal.

HART'S BRONZE TURKEYS AND EGGS—Large reduction in price of stock. Order now for fall delivery. Free Circulars. Albert M. Hart, Clements, Cal.

California Poultry Practice

A Practical Treatise on Poultry Raising in California

By Mrs. Susan Swaysgood

Writer and Breeder of Utility Poultry.

160 pages of text, besides many full-page illustrations. Cloth bound.

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Hundreds of Dollars in Gold Specials and Cash Prizes.

WALTER M. ROSS,

SECRETARY,

224 W. Colorado St., Glendale, Cal.

Mrs. Best's Letter.

My dear Friends: I saw such a pretty afternoon dress in one of the stores this week that I want to tell you about it. The material was pink silk crepe and the skirt was full with several broad tucks. The waist was very simple, plain but loose, both front and back, with round neck, while the sleeves were rather snug and very long, coming well down over the hand.

The unusual feature was the blue velvet Japanese collar. As you doubtless know, these collars open on the shoulders and the front is almost as high as the back so that the effect is very different from the ordinary V neck. A narrow band of the velvet confined the sleeve at the wrist and finished in a bow.

Another very handsome afternoon dress was of white velvet made with a plain skirt with an eight-inch band of dark fur. The waist was simple, fastening across the shoulder and under the arm, with a high standing collar at the back and the sleeves were of white crepe rather snug to the elbow when they flared out gradually until at the wrist they were fully six inches wide and finished with a three-inch band of fur.

Many of the afternoon and evening dresses are made with a long loose bodice almost like a middy. They are especially pretty when braided or beaded in contrasting colors.

The dancing dresses are quite largely made of tulle over satin, but there are some very pretty ones with flounced skirts of metallic lace.

For party petticoats there are white satin skirts with wired crepe flounces bound in satin and also soft crepe de chine with lace flounces. Lace from an old dress could be utilized that way for some girl for a pretty petticoat.

Bolivia cloth and velour in a wide range of colors can be purchased by the yard and a clever seamstress could make a coat at home in the loose styles, when there is no interlining required.

Cut steel buckles are shown on the new dark dancing pumps—the larger they are, the better style they seem to be. Gold and silver cloth slippers still lead in popularity, and although they are high in price, they last much better than the satin.

I recently saw a most attractive muff and hat set made of a combination of Paisley and dark fur. The muff was of two strips of the fur at the edge and the center a strip of Paisley, while the small toque was made entirely of Paisley with narrow bands of fur for trimming.

Sport garments seem to be just as popular one season as another. One of the new sport skirts is of white satin made very full and plain, shirred onto a belt, each shirring having an inch heading. The full patch pockets had the same style shirring. To wear with this skirt was a sport shirt made with a thousand-tuck front with high turnover collar, long sleeves and plain back with yoke.

Rosabella Best.

Gilt frames should be washed with plain water with a little flower of sulphur dissolved in it.

THE HOME CIRCLE

NOVELTIES IN THE SHOPS.

One of the shops is showing a "boodle bag" which is a satin envelope purse, lined with chamois and attached to a round garter, to be worn below the knee.

Little powder books are covered with satin of a dainty color and then have a case of filet crochet.

Crepe-de-chine handkerchiefs in soft colors are being shown with hemstitched edges and also with a crocheted edge and cross-stitch design in one corner.

Enameled Parisian Ivory for toilet sets is wonderfully attractive and orders will be taken at one of the very best stores for any individual designs.

Handkerchiefs for children are shown in sets of three with Mother Goose pictures and rhymes upon them.

Bonbon dishes of enameled wood in many beautiful colors are shown. Orders will be taken for any desired color.

IRONING HINTS.

Have your ironing board well padded and the cloth clean, otherwise the results in fine work will not be satisfactory.

A quarter of an inch of tallow candle to a tablespoonful of starch makes the ironing easier, and gives a slight gloss. The garments should be thoroughly dried, then sprinkled with warm water, and rolled tightly and left until uniformly damp.

Lace edgings should be gently pulled out first with the fingers, or the delicate little outer edgings will not show.

A delicate lace insertion or insert, which is beginning to show signs of wear, may be strengthened and made to last twice as long by a lining of thin Brussels net.

TOMATO CATSUP.

Editor Home Circle: I should like a recipe for tomato catsup. — Mrs. M. B., Raisin City.

Wash and quarter $\frac{1}{2}$ bushel ripe tomatoes. Cook until soft, remove from fire and rub through wire sieve. Add to the strained juice, 2 teacups of salt, 2 teacups of mixed spices, 1 quart of vinegar. Boil over a slow fire for two or more hours, stirring constantly to prevent burning. Fill the bottles to overflowing with the hot liquid and seal at once. Wrap in paper to exclude the light.

AN ORIGINAL FRIEZE.

If the wall of your room is painted or papered with plain paper, you can make a frieze by cutting art pictures, photographs or magazine covers.

Paste the pictures on plain wall paper that harmonizes with your room, and then tack carefully around the room. If the pictures are well arranged, the effect is very unique.

TO WAX A HARDWOOD FLOOR.

If the floors have never been finished, they must be scraped and sandpapered, then they are ready for the hardwood filler. This can be purchased ready-made, but can be made more cheaply at home. To two quarts of boiled linseed oil, add one and one-half packages of common cornstarch. Stir well with a paddle and add a pint of gasoline. It should then be about the consistency of common varnish.

With a wide brush, go over a spot as wide as you can reach and let dry for fifteen minutes. Then with a handful of excelsior or shavings rub crosswise of the floor first and then lengthwise.

Hard rubbing brings out the grain of the wood as well as filling the pores.

Proceed in this manner until the whole floor has been gone over and then let dry twenty-four hours.

Prepare your own wax by melting in a dish set in a kettle of hot water one-quarter pound beeswax and one quart turpentine. When melted add one teacupful ammonia. Apply hot in strips with a soft paint brush.

After twenty minutes, polish with a weighted brush, first across the grain, then lengthwise.

This amount of wax will do for two rooms. If there is any left, put away in a closed tin to use later in touching up worn places.

REVARNISHING OLD FURNITURE.

Articles of furniture that need revarnishing should first be thoroughly sandpapered. As sandpaper comes in various degrees of fineness, the rougher quality should be used first to remove the top varnish. Then the use of the finer grades completes the work without danger of scratching the wood.

All carvings or indentations must be cleaned carefully, or the succeeding coats of varnish will fill up the spaces so that the original design is lost.

When this has been done, a thin coat of the best varnish should be applied. Three coats of varnish are necessary, and after the first and second coats, the varnish should be worn down slightly with the finest sandpaper. This prevents blistering or too high a lustre.

Where a stain is desired on any article, always apply it before the first coat of varnish. Never mix the stain with the varnish.

SWEET POTATOES WITH APPLES.

Put one cup boiled sweet potatoes (cut in $\frac{1}{4}$ -inch slices) in a buttered baking dish. Cover with $\frac{3}{4}$ cup pared and thinly sliced apples; sprinkle with $\frac{1}{4}$ cup brown sugar, dot over with 2 tablespoons butter and sprinkle with $\frac{1}{2}$ teaspoon salt; repeat. Bake in a moderate oven 1 hour.

MOCHA BUTTER CREAM FILLING.

Work 6 ounces of sweet butter until creamy. Beat whites of 4 eggs to stiff froth. Place 5 ounces of granulated sugar with a little water in a small sauce pan and let boil until the sugar forms a soft ball when dropped into cold water. When the sugar is cooked, pour it slowly in the stiff egg whites, stirring briskly. Let cool, then add the butter and some coffee extract and work together a few minutes. Spread between layers of cake.

PRIZE FOR DRIED PEAR RECIPE.

For a better recipe for cooking dried pears, than the one below, F. T. Swett, pear grower of Contra Costa county, offers to Pacific Rural Press readers a 20-pound box of dried pears.

A Spanish friend taught Mr. Swett and his family to like cooked dried pears. Says he: "I have been drying pears for 20 years; but until this year, we have never made regular use of them at our own ranch and family tables. Most folks who experiment with them quite naturally assume that they should be cooked just like dried apples. The result? Usually a soft, slushy, mussy, sloppy mess. One trial. Never again."

A Spanish friend taught them how to do it right. "It isn't a new recipe; it's probably been in use for hundreds of years. Wash the fruit clean, and simmer for a half hour. By that time the pears will have swelled to almost original size, but will not have softened so as to fall to pieces. If you kept on stewing they would. Take the pears out, lay them in a shallow dish or pan, strain the water back over them, sprinkle sugar over the pears, flavor, if you wish with spice to taste, and bake for fifteen minutes. They will come out of the oven nicely baked, with the sugar crystallized on the surface of the pears. Serve with cream, and you have a dish that everybody enjoys. Dried pears, according to analyses, are one of the most nutritious of fruits; and at the same price per pound have a greater food value than dried apples."

DYEING.

With the use of gasoline and oil paints, the veriest amateur can have fairly good success in dyeing articles. Take a bowl of gasoline and squeeze into it enough tube paint to produce the desired color. Be sure the color is thoroughly dissolved before dipping the article.

White silk gloves may be made any desired shade, while lace can be made a perfect match for any dress goods.

Ostrich feathers are very easy to dye. If much soiled, they should be given a bath in clean gasoline first and then shaken dry before dipping in the dye.

Flowers that have faded may be touched up with a paint brush dipped in the gasoline dye, if it is not desired to have them all one color. Party slippers of delicate shades may be treated the same way.

MUSIC IN THE HOME.

Mothers should remember that music belongs to the child as one means of expression. The tendency of small children to sing at their play should be encouraged that they may grow up to love music.

If there is talent to produce music on instruments, by all means encourage it, but to enjoy music does not necessarily carry with it the ability to produce.

If the household has either piano player or Victrola, have records of good music. It is a mistake to think that children care for only light, cheap music. A taste for good music and a familiarity with the works of the masters can be cultivated and is a never-ending pleasure.

WORRY.

Kathleen Wheeler Ross.

They are peering in the windows,
They are climbing up the wall,
The things that we are dreading,
But which never come at all.

They play upon our heartstrings
With a sad and warning note;
They beckon with long fingers
From their hiding-place remote.

They disturb our peaceful moments;
They intrude upon our joy;
They choose the queerest pretexts
To approach us, and annoy.

They stand beside our guest-chairs,
Uninvited, at the feast;
They creep into our pleasures
Just when we expect them least.

Very ghostlike in their actions,
Drawing nearer, they appall,
Those things which we are dreading,
But which never come at all.

So like ghosts they should be treated,
Laughed at, banished, put to rout,
As the filmy clouds above us
Vanish when the sun comes out.

ELIZABETH'S CHOICE.

By Amy V. Beal.

This is a true story about a little girl named Elizabeth. She was ten, and she had a sister Lucy, who was eight, and a little sister Frances, who was only four.

They were very nice little girls, and they loved one another dearly. Elizabeth was generous and unselfish, and often sacrificed her own pleasure to make her sisters happy.

Grandma liked to reward Elizabeth for her unselfishness, and so, one day, she said to Aunt Daisy:

"I have asked the little girls to come over this morning and get the presents we brought them from Europe. I am going to let Elizabeth choose the one she likes best. I think she deserves a reward for sending Frances driving with Aunt Mary yesterday, in her place. She was very good to give up her treat to make her little sister happy."

The little girls soon arrived, and Grandma kissed them and helped them take off their coats and hats. Then she led them into the living-room. The three gifts were lying in their boxes on the table: a turquoise ring, a little pearl locket, and a bracelet with a tiny clover on it.

"Oh, how lovely!" cried Elizabeth. "Weren't you good to bring us such pretty presents, Grandma?"

"Which is for me?" asked Lucy with shining eyes.

"Me choose, Grandma?" said little Frances, with an engaging smile.

"No, dear," answered Grandma, "Elizabeth is to have first choice this time, because she was so good to let you go with Aunt Mary yesterday. Come, Elizabeth, which do you like best?"

Elizabeth clasped her hands and drew a long breath of excitement

and rapture.

"They're all so beautiful," she said. "May I really do just as I like about choosing, Grandma?"

"You certainly may, dear; this is your choice."

Elizabeth looked at the gifts again closely, and touched each with a careful finger, lingering over the locket. Then she glanced at Lucy's wistful face, and at Frances, who was resting her little nose on the edge of the table in her endeavor to see the pretty things.

"Which do you wish you had, Lucy?" Elizabeth asked suddenly.

"Oh, the ring, the ring!" cried Lucy, dancing up and down.

Elizabeth took the ring from its box and handed it to her, and was nearly choked by Lucy's "bear-hug."

"Which do you like best, Frances?" Frances stood on tip-toe and waved a fat hand.

"I fink I'd ravver like the bracelet," she said. Elizabeth clasped it on her chubby arm, and Frances gave her a big, big kiss.

"Then this is mine," said Elizabeth, joyously, taking up the little pearl locket. "It's just what I wanted, Grandma. Thank you a hundred times for it."

As she kissed Grandma, she whispered, "It's lots of fun to have first choice, isn't it?"

Grandma looked at the little sisters dancing for joy, and then at Elizabeth's radiant face, and smiled.

"It is when you are generous," she said softly.

What do you think of Elizabeth's choice?

HOUSEHOLD HINTS.

After washing your dust cloths and rinsing well, saturate with coal oil and hang out to dry.

To prevent odors of cabbage in a kitchen, set a small can on the back of the stove with a little vinegar and let it simmer.

To clean silverware, dissolve two pounds of salsoda in a gallon of water, let it come to a boil and either add a sheet of aluminum or put in an aluminum pan. Add the silver, boil a few minutes and rinse in cold water.

To cleanse teeth, dip a cloth in peroxide and then in powdered pumice stone and rub over the teeth until all stains disappear.

For hardwood or painted surfaces, dip a cloth in coal oil and rub over the woodwork. It will cover all scratches and fly specks.

CORN, SOUTHERN STYLE.

To one can chopped corn, add 2 eggs slightly beaten, 1 teaspoon salt, ½ teaspoon pepper, 1½ tablespoons melted butter and 1 pint scalded milk. Turn into a buttered pudding-dish and bake in slow oven until firm.

STEAMED CORN MEAL PUDDING.

Put 1 quart milk in double boiler; when very hot, add 1 cup corn meal slowly and cook, stirring constantly till grains of meal are soft and transparent. Remove from fire; add ½ cup sugar, 1 cup suet, free from strings and finely chopped, ½ cup flour sifted with 2 teaspoons baking powder, 1 teaspoon salt and 1 teaspoon ginger; mix thoroughly, turn into a well-greased pail with fitted cover, and steam 3 hours.

Serve with stewed apples, pears, or plums, and hard sauce. One cup dried fruit—dates, figs, or raisins—may be added before steaming, instead of using stewed fruit when pudding is served.



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Good Health.

[By H. E. Pastor, M. D.]

Lunches and Learning.

We haven't seen Farmers' Bulletin No. 712, but if it contains all the sensible suggestions on the wisdom of serving hot lunches in public schools that we are told it does, it should be in the hands of all parents of children attending public schools in the country, and also of the school teacher; and they should co-operate with a view to replacing the stone-cold and unappetizing lunch eaten by so many little school children with something warm and nourishing. Cold victuals chill the stomach and stimulate but feebly the flow of gastric juice, upon which the digestion of the food so largely depends. Unless the child is very robust and full-blooded, cold food lies on its stomach like a lump of lead, and is about as nourishing. These are the days of sullen skies and wintry

winds, and the depressing chill of wintry weather should be thrown off at the noon hour in the little country schoolhouse by eating a good, hot, appetizing meal. We have a cult of food faddists among us who seem to feel it a religious duty to warn the rest of human kind against hot meals, or food that is cooked at all, eaten hot or cold, and point to the eating habits of the animals of the field and declare theirs to be the "natural" way. But if these people would stop long enough to dissect the digestive apparatus of various animals of the lower order and make comparisons with the digestive equipment of man they would quickly perceive that Nature never intended the digestive process to proceed in the same way in the two organisms. Fire is the peculiar prerogative of man, and its possession and use argues some relationship to his comfort and welfare.

So give the country school child a square lunch, with at least one dish of hot, fresh-cooked food, if only a bowl of soup or a cup of hot milk or cocoa. It will impart added vitality, and capacity for absorbing more instruction, and send the little one home bounding and buoyant. Send for the bulletin and learn more about it.

Bad Mouth-Hygiene.

If you don't own a tooth brush invest two-bits and acquire one. It's as necessary to cleanliness as a bar of soap or a nail-brush, and from the standpoint of sanitation even more important. The dirt on the outside is not near as deleterious to health as the dirt on the inside, and the unclean mouth generates more disease germs in a day than you can count on a Burroughs adding machine in a week. Just because you never used a tooth-brush in your life and have lost only half your teeth by neglect, is no reason why you shouldn't start in now and try to save the rest. You seldom meet a man or woman displaying a row or two of rotten and rotting fangs who hasn't a chronic whine about ills and aches of sundry kinds and degrees. The mouth is a hotbed of microbic infection. Bad mouth-hygiene is a large factor in the development and continuation of catarrh, and is frequently a contributory cause of pneumonia, not to mention numerous stomacach and intestinal ailments. An aggravated case of the bad result of neglected mouth hygiene was once witnessed in a dental clinic in San Francisco. A girl of 15 or 16 from the squalid quarters "south of the slot" had applied to the professor of ophthalmology for treatment of a pair of badly inflamed and matterated eyes. Prof. C. observed a mouth full of decayed, discolored teeth, covered with sordes. He told the girl the condition of her teeth was responsible for the condition of her eyes, and sent her to the dental clinic. All of her teeth—what was left of them—were removed. She was asked to report results in a few weeks, which she did. To the surprise of the young medicos who had never seen a similar case, the eyes were nearly well, though the girl was still toothless. The writer lost track of the young lady shortly afterward, and was not profoundly sorry—though it was a very interesting case pathologically.



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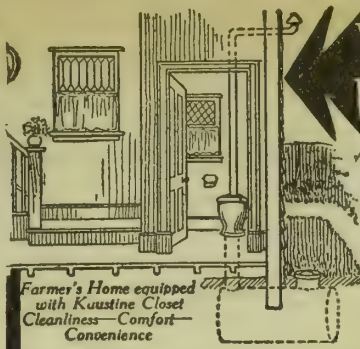
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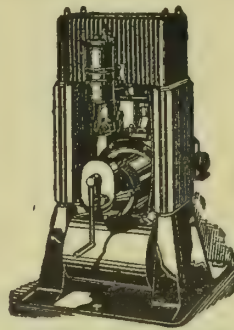
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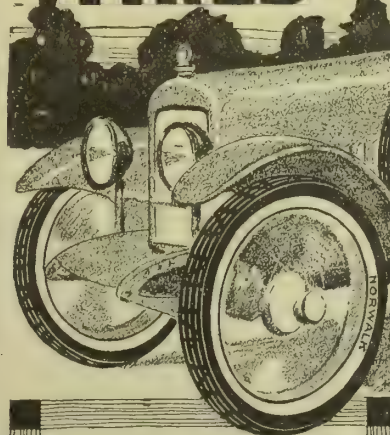
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SAN FRANCISCO.

San Francisco, Nov. 28, 1916.

WHEAT.

Local trading is rather quiet, and a sudden weakening in the East is causing buyers to hold off, although prices are well maintained. Some California club is offered, but the quantity is limited.

[First-hand prices on strictly first-class grain, San Francisco.]

Sonora wheat\$2.75@2.80
Northern clubNone offered
Calif. club, cti2.65@2.75
Northern Bluestem2.85@3.00
Northern RedNone offered

BARLEY.

The local speculative market shows an easier tone, which is holding the spot movement down to narrow limits, buyers being in the market for immediate needs only. Prices, however, are higher, with holders very firm in their views.

Shipping, cti\$2.35@2.40
Choice feed, cti2.25@2.30

OATS.

Trading in feed oats is rather active as a result of high prices in other lines, and considerable Eastern business is reported in the north. Values, however, are only steady, white feed being rather easier.

Red feed\$1.80@1.85
White2.15@2.20
Black seed3.00@3.25

CORN.

California yellow is appearing in quotable quantities, but so far little of it is in good shipping condition, and the less desirable grades are correspondingly lower. Egyptian is firm and active as before.

[First-hand prices on strictly first-class grain, San Francisco.]

Eastern Yellow, ctiNone here
California2.40@2.50
Milo MaizeNominal
Egyptian, new2.25@2.35

BEANS.

Trading continues as active as ever, being now mainly on the colored varieties, which continue on the upgrade. Pinks have advanced rather sharply this week, and bayos also are up a little, though other descriptions show no further change. The white beans are said to be pretty well sold out everywhere, and other varieties are moving off faster than usual. Shipments from Stockton have been very heavy, and it is said that the bulk of the crop has already gone out from that section.

[On wharf, San Francisco.]

Bayos, per cti\$5.75@6.00
Blackeyes5.00@5.10
Cranberry beans6.50@6.60
Horse beans3.25@3.50
Small Whites (south) new crop7.00@10.50
Large Whites, new crop8.10@9.50
Pinks6.25@6.50
Limas (south)6.65@6.85
Red Kidney9.00@10.00
Mexican Reds6.00@6.25
Tepary beans4.25@4.50

HAY.

The serious local shortage resulted in a strenuous effort on the part of dealers to get cars, which resulted in a slight increase in arrivals on the city market during the week. The shortage had begun to interfere seriously with general business, and shipments were made largely in open cars, which fortunately suffered no damage. Dealers are predicting a great deal of difficulty in the city during the winter on account of the car shortage, which looks as if it would continue for some time. Local prices have naturally remained very strong, and are not necessarily in line with country values. The light offerings are quickly sold out from day to day, and a good deal more could be used. There is a fair export demand, but shortage of vessels as well as cars interferes with shipment. The country demand is quite strong. Alfalfa comes in fairly well by boat. Straw is in good demand.

[Wholesale prices per ton, carload lots, San Francisco.]

Wheat, No. 1\$14.50@16.50
No. 212.00@14.00
Tame oats12.50@15.50
Wild oats12.00@14.00
Alfalfa10.00@14.50
Stock hay10.00@12.00
Straw, per bale50@70

FEEDSTUFFS.

The great advances in grain have affected practically everything in the line of mill feeds, which are exceptionally high. Alfalfa meal has again been marked up; bran and middlings are firm at the recent advance and rolled barley and oats are unusually high.

Beet Pulp, per ton\$27.00@28.00
Alfalfa meal, per ton20.00@21.00
Bran, per ton30.00@31.00
Oil Cake40.00@41.50
Coconut cake or meal31.00@32.00
Crocked corn50.00@55.00
Middlings39.00@40.00
Rolled Barley47.00@48.00
Tanka47.00@48.00
Rolled oats47.00@48.00
Rice middlings33.00@34.00

POTATOES, ONIONS, VEGETABLES.

Sweet potatoes are about out of the fields, and most supplies are now from storage, with firm prices. Potatoes appear to be a little easy locally, with dealers buying from hand to mouth, though prices are well held. Onions remain quite firm. Los Angeles to-matoes are arriving, and the stock sells well, being of fine quality.

[Wholesale prices, San Francisco.]
Celery, Alameda, bunch10c
String beans15@20c
Lima beans10@12c
Peas, lb10@15c

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

Tomatoes, lugs, Los Angeles1.25
Rhubarb, lugs75@1.00
Potatoes, cti, Delta2.00@2.35
Salinas2.65@2.75
Onions3.00@3.25
Garlic, new crop, per lb3@5c

POULTRY.

At present writing it is impossible to say what the wind-up of the turkey market will be, but the week has started extremely strong, for ordinary as well as choice birds. Arrivals have been fully as heavy as usual if not heavier; but everything appearing is readily taken, and there seems to be a large speculative demand. Fine stock sells for 30c, or possibly a little more, and off-grade lots bring almost as much. Live turkeys also have advanced. Chickens are in liberal supply and rather quiet, without change in price; while geese show a further advance.

Turkeys, dressed, large, lb29@30c
Turkeys, live, lb. young, large26@27c
Old, large15@25c
Broilers, 18 lbs. to doz. and less, lb.26@28c
do, over 18 lbs. to doz.21@23c
Fryers20@22c
Hens, extra, per lb. colored20c
Small leghorn15@17c
Smooth Young Roosters, per lb. (3 lbs. and over)20@21c
Squabs, per lb.38@42c
Geese, per lb16@17c
Ducks,15@16c
Old15@25c
Belgian Hares12@14c

BUTTER.

The Eastern shipping demand has fallen off for the present, and while an early renewal of the movement is expected, prices show a slight recession from the high point of last week. While supplies are coming in fairly well, present conditions in other markets do not permit the accumulation of any surplus.

	Thu	Fri	Sat	Mon	Tu	Wed
Extra	37	36	36	36	36	36
Prime 1sts	36	35 1/2	35 1/2	35 1/2	35 1/2	35 1/2
Firsts	35	35	35	35	35	35

EGGS.

There has been little outside demand of late, and with considerably larger offerings the first of the week prices have declined rather sharply, with dealers anxious to avoid carrying anything over the holiday.

	Thu	Fri	Sat	Mon	Tu	Wed
Extras	51	49	49 1/2	48	47	47
Sel. Pul.	43	41 1/2	41 1/2	40	38 1/2	38 1/2

CHEESE.

Supplies are rather scarce here, as the Eastern demand is taking considerable stock that would otherwise come to this market. Prices are accordingly firm with further advances on flats and Monterey cheese.

[S. F. Dairy Exchange prices.]
Y. A.'s fancy19c
Fancy Calif. Flats, per lb18 1/2c
Monterey Cheese17@18c

DECIDUOUS FRUITS.

Cranberries are lower. The general fruit market is a little quiet this week locally, though there is still some movement in grapes. The apple market shows some strength, especially in shipping channels, and Newtowns bring 95c f. o. b. Watsonville, an advance of 35c since the season opened. Persimmons are an item of some importance in the local market this year.

[Wholesale prices, San Francisco.]
Huckleberries, lb. fancy12@15c
Strawberries, chest\$6.00@9.00
Cranberries, Cape Cod, bbl.11.00@11.50

Apples:
Christmas apples, box\$2.00@2.25
Bellflower, box1.00@1.10
Jonathans85@1.00
Newtown95@1.10
Pears, Winter Nellis2.25@2.75
Persimmons, box, dbl. layer75@1.00
Pomegranates, lug75@1.00
Quinces, lug40@50
Casabas, crate75@1.00

DRIED FRUITS.

Notwithstanding the holiday interruption, the market continues very active and strong for everything on the list. Apples are in especially strong demand, both for export and for the Middle Western markets, and supplies are running rather low. There is also quite a demand for apricots, despite the high prices. Growers are already well sold out, and stock in packers hands is now moving off. A few white figs are coming out, and black figs are higher. Stocks of prunes in packers' hands are light, and there is said to be nothing of any consequence left in the country, while there is considerable export inquiry. The shortage in other lines is causing more interest in pears, and choice stock is bringing high prices.

[Net to growers, bulk basis, f. o. b. shipping point.]

Apples, new crop7 1/2 @ 8c
Apricots, per lb., 191615c
Figs, white, 19167c
Figs, blk5 1/2 @ 6c
Figs, white, 19167c
Figs, blk5 1/2 @ 6c
Callimyrnas, 1916None offered
Prunes, 4-size basis, 19166 1/2 @ 7c
Pears6 1/2 @ 7c
Lake County Pears11 1/2c
Peaches6 1/2 @ 7 1/2c

ALMONDS.

All the Exchange almonds of every kind and description have been sold and shipped, and the market in general is very strong. Local jobbers report a rather slow demand here, but supplies are scarce and many outside buyers are anxious for supplies, so that first-class almonds should bring high prices.

[Exchange prices.]

Nonpareils, lb.20 1/2c
I. X. L.18c
N. Plus17c
Drakes16c
Languedoc16c

Special Livestock Market Report.

Los Angeles, Nov. 28.

Cattle—There is no change to note in this market from a week ago. A very good number of California hay-fed cattle were in the past week, and in good condition. They met with a very good demand and old prices were fairly sustained. Killers were all in the market and wanted supplies. Fat cows and heifers, as well as steers, met with a fair demand, and what came in were sold without trouble.

Quotations f. o. b. Los Angeles:
Beef steers, prime 1000 to 1100 lbs.\$7.00@7.75

Stockers and feeders5.50@6.00
Prime cows and heifers6.25@6.50
Good cows and heifers6.00@6.25

Hogs—Steady and rather firm hog market was had the past week. The rain was fairly good and mostly from California, with a few scattering lots in from Idaho. While the receipts showed fair flesh, they were not so well finished as previous years, showing the effects of the high price of feed. Killers were all in the market, and wanted supplies and the arrivals were placed without trouble.

Per cwt. f. o. b. Los Angeles:
Heavy, averaging 250@300 lbs.9.25@9.50
Mixed, 200@2509.25@9.50
Light, 175@2009.25@9.50

SHEEP—The run the past week was only fair and mostly made up of yearlings and lambs from Arizona and Utah. The offerings were in fine condition. But few heavy sheep in. Killers were all in the market and wanted supplies and a firm and fairly active market was had for all offerings at old prices, and more could have been disposed of if here.

Per head f. o. b. Los Angeles:
Prime wethers\$7.00@7.25
Prime ewes6.50@6.75
Yearlings6.50@7.00
Lambs6.50@7.00

CALVES—Receipts only fair and market steady, and those coming in selling without trouble. Bringing \$8.50 to \$9.50 per cwt.

San Francisco, Nov. 29.

Cattle are scarce and not much available stock in the country. Medium to

heavy weights are wanted. No surplus of these exists as there was a year ago. There will probably be a fair demand for them all winter. Very few people are feeding grain to beef cattle now, considering the prices of both.

Hogs of 175 to 200 pounds are wanted, as usual, and all offerings of good stock this size are welcomed. Hog receipts now are of very good quality.

Sheep for butchering are practically all in the hands of packers or butchers now. The new crop of lambs is expected to be somewhat heavier than a year ago; and at the same time demand is likely to fall off on account of the talk of high-priced lamb. Probably more young breeding stock was reserved this year than last for the year before; but its influence cannot be felt next season on the meat market. The country is bare of wethers on account of the high prices ruling for lambs last season.

[Prices paid for stock, live weight off cars, without feed or water, at Stock Yards, South S. F. Hog prices subject to seller standing one-half of all hogs condemned by government inspectors.]

Steers, No. 17 1/2 @ 7 1/2c
No. 26 1/2 @ 6 1/2c
Cows and Heifers5 1/2 @ 6 1/2c
No. 25 1/2 @ 6 1/2c
Rulls and Stags4 1/2 @ 5c
Calves, light8 @ 8 1/2c
Medium7 @ 7 1/2c
Heavy6 1/2 @ 7c

HOGS, grain fed:
150 to 300 lbs.9 1/2c
300 to 375 lbs.9c
SHEEP: Prime Wethers7 1/2c
Spring Lambs f. o. b. country points\$5.75@6.25

WOOL: Red Bluff, year's25@27c
Mountain, fall16@20c
Sacramento Valley, year's19@25c
Mendocino, year's32@33c
Mendocino, fall18@21c
Southern, year's13@15c
Southern, 7 months'11@12 1/2c
Imperial Valley, year's17@19c
Imperial Valley, 7 mos.14@15c
Nevada22@24c
Fall wool10@20c

HOPS.

While many growers are holding, a little more business is being done in some localities at rather easy prices. A rather large movement is reported in Oregon. A contract for next year's hops is reported near Sacramento at 10 1/2c.

HORSES.

Notwithstanding the holiday, a good-sized lot of horses was brought into the local market this week, consisting largely of drafters that have been worked during the summer and fall in northern California. Buying interest is limited.

Drafters, 1700 lbs. and up\$250
Drafters, 1550 to 1650 lbs.150@200
Chunks, 1350 to 1500 lbs.150@175
Wagon horses, 1050 to 1350 lbs.110@150
Green Mountain range horses, 950 to 1200 lbs.20@75

GROCERIES.

The general market is strong, but with few price changes. Graham flour and some other mill specialties are higher. Bluestone is a little lower.

LOS ANGELES.

Los Angeles, Nov. 28, 1916.

BUTTER.

Receipts of week ending Nov. 28, 1916—261,600 lbs.

Receipts of week ending Nov. 28, 1915—227,490 lbs.

The market was hardly so firm the past week, though it strengthened up toward the close. The first half of our review week the market broke a cent under larger receipts. Since the opening of the current week, the early loss has been regained under the influence of stronger markets East, values there being so high as to draw shipments from the Pacific coast. This is also the period of light production and increased home consumption incident to the tourist season, which is now opening, and is having its influence. While receipts are running somewhat better than a year ago, prices are 10c higher.

We quote fresh extra creamery38c
Prime first36c
First34c
Wed. Thu. Fri. Sat. Mon. Tu.
191638 37 37 37 38 38
191530 30 28 28 28 28

EGGS.

Receipts (railroads) for week ending Nov. 28, 1916—671 cases.

Receipts (railroads) for week ending Nov. 28, 1915—604 cases.

The snap is out of the egg market. There was little trading on 'change the past week. Receipts are coming in a little more freely and the Thanksgiving demand will soon be a thing of the past. The market here broke 2c during the week, and San Francisco lost 4c. Chicago and New York are still holding up, but this has failed to influence the market here. Receipts here by rail for the week were 671 cases, and estimated receipts by truck 600 cases, making a total of 1271 cases. The same time last year the receipts by rail and truck were 1204 cases. While there has been a decline of 3 cents for the week, prices are still 3c higher than this time last year.

We quote fresh ranch case count. 47c
Wed. Thu. Fri. Sat. Mon. Tu.
191650 50 50 50 48 47
191544 44 44 44 44 44

POULTRY.

The market is doing fairly well, but hardly so active as previous Thanksgiving, the high prices causing people to buy more sparingly. Broilers are coming in less freely, and are 1c higher. Fryers are unchanged, and both fryers and broilers are very good demand. Ducks and geese are moving more freely, owing to the high price of turkeys, and are selling a cent higher. Hens are steady, and in very good demand, and turkeys are selling fairly at quotations.

Broilers, 1 1/2 to 2 lbs.23@24c
Broilers, 2 1/2 to 3 lbs.20@22c
Hens, over 4 lbs.18@19c
Ducks17@18c
Geese16@17c
Roosters, 3 lbs. up. (soft bones)18c
Turkeys, heavy, 12 lbs. and up.23@24c
Turkeys, light21@22c
Squabs, live, per doz\$1.50@3.00
Dressed3.75@4.85

BEANS.

While a fairly active market was had the past week for all offerings, whites and pinks were hardly so firm. Limas and blackeyes held steady and sold very well. As stocks are moderate, holders, however, are rather independent. The East continues to buy quite freely, and there is a fair home demand. We quote to growers:

Limas\$7.00@7.25
Large white\$9.25@9.50
Small white\$9.50@10.00
Pinks\$7.00@7.25
Blackeyes\$5.25@5.75
Tepary\$5.75@6.25

WALNUTS.

The associated prices this year and last are:
No. 115.50c 13.50c
No. 212.50c 10.60c
Budded19.90c 17.00c
Jumbos17.50c 16.60c
Orchard run 3c less.
Culls, per lb.5@6c

HAY.

A fair market continues to be had for all choice hay. Good dairy alfalfa shows the most life, and is moving with some freedom, and prices are steady. The best barley and oat hay is also meeting with very fair demand. Low grades, however, are slow sale. Present prices are kept up by the moderate receipts. Freer arrivals, it is

thought, would cause lower prices. Receipts, 157 cars.
[F. e. b. Los Angeles.]
Barley hay\$16.00@18.00

Oat 18.00@20.00
Alfalfa, Northern 15.00@16.20
Alfalfa, local 17.00@18.00
Straw 7.50@ 8.00

Special Citrus Market Report.

Los Angeles, Nov. 28.

Shipments of oranges from Southern California, from November 1 to November 20, 354 cars of oranges and 338 cars of lemons. The shipments for the same time last year were 395 cars of oranges and 219 cars of lemons.

Shipments of oranges from Central California from November 1 to November 19 were 197 cars, and lemons, 73 cars. Shipments the same time last year were 46 cars of oranges and 30 cars lemons.

Shipments of oranges from Northern California from November 1 to November 19 were 167 cars and lemons none. The same time last year the shipments were 12 cars oranges and no lemons.

The Eastern market held up fairly well on oranges, but it was dull and lower on lemons the past week. But with the arrival of new navels a weaker market is looked for.

Locally the market the past week did very well. New navels coming in in quantities to control the market, and they were given the preference over Valencias, which are lower. The new

navels coming in are of good color and testing well and finding ready sale. Local packers are still paying 2 and 2½¢ per pound for them in the grove. With this competition Valencias have dropped down to 2 and 3¢ in the grove, and the new navels are being given the preference at the difference in price. Grapefruit is steady at 2 and 2½¢, and is meeting with a very good demand. Lemons continue to drag at 1½ and 2¢ per pound in the grove. Weight of oranges, loose box, 50 to 55 pounds; grapefruit the same. Lemons, loose box, 55 to 60 pounds.

FROM EASTERN AUCTION SALES.

New York, Nov. 27—Nine cars Valencias and seven cars of lemons sold. Valencias 25¢ higher; lemons 15¢ lower. Weather fair. Valencias averaged \$3.50 @ \$6.45. Lemons averaged \$2.50 @ \$3.35.

Boston, Nov. 27—Eight cars sold. Market strong on oranges, unchanged on lemons. Valencias averaged \$3.75 @ \$4.85. Lemons averaged \$2.70 @ \$3.30.

Philadelphia, Nov. 27—Two cars sold. Market better on lemons. Lemons averaged \$3.00 @ \$3.55.

Publisher's Department.

Two weeks ago the editor "spoke his mind" freely about not liking the quality of paper we were using, which brought from many readers responses, the tenor of which makes us feel better. One writer says: "Honestly and truly, we think only of two things: Selfishly, first, the profit and pleasure we get, and then the big-hearted, strong and faithful editor and friend who makes the paper what it is."

Another subscriber writes: "Your paper has come to our home for more than twenty-five years, so you see we enjoy it very much."

A newer subscriber from La Jolla writes: "Kindly change my address to Anaheim. I have read the Rural Press until I got the fever, with the result that I have purchased a ranch near Anaheim."

Mr. Douglass of Hanford writes us that he has taken the Rural Press for about forty years, and hopes to continue several years more.

We stated last week that the third edition of "California Vegetables" was nearly exhausted, and that fact is more nearly true now. Owing to the high cost of making books, we will not get out a new edition for some time. If you want a copy of the book, send in your order. Price, \$2 postpaid.

HOW CATTLE RUSTLING WAS CHECKED.

[Written for Pacific Rural Press by C. E. Robertson.]

The cattlemen of Humboldt county have been losing stock for years and local conditions are such that they did not seem to get anywhere, individually, in suppressing cattle rustling.

During the spring of 1915 I gave this subject considerable attention, having the District Attorney draw up a paper offering a reward of \$500 for the conviction of parties unlawfully killing or stealing cattle and \$100 reward for unlawful killing or stealing of other stock.

As a result of this I was able to secure subscriptions totaling \$1,000; and at a well attended meeting held August 15, at Bridgeville, a committee of five was appointed to draft constitution and by-laws, the Humboldt Stockmen's Assn. resulting from this committee's work at Eureka, November 27.

The dues were fixed at \$3 annually with a \$5 initiation fee, but after several months the dues were reduced to \$1 a year and the initiation fee was abolished. Last August the writer was authorized to secure new members at the reduced fee and secured 140 members, owning 70 per

cent of the range cattle in the county.

Our second annual meeting, held at Fortuna October 7, was not only well attended but we also had as speakers Prof. Gordon H. True of the University of California and Geo. A. Clough of San Francisco, attorney for the California Cattlemen's Protective Ass'n and owner of large cattle interests in Tehama county.

At this meeting it was decided to reduce the dues permanently to \$1 a year, it being the impression that this will pay a secretary and the running expenses of the association. When special funds are needed to assist in prosecuting cattle rustlers it is probable that an assessment of not over three cents a head on all cattle in the association will finance any ordinary prosecution.

The activity shown here has checked three-quarters of the loss of stock in Humboldt district; and Mr. Clough was promised the support of our association for the Hide and Brand law which the State Association is advocating. This law is patterned after that of Arizona, which has stopped 95 per cent of the cattle stealing there.

THE NATIONAL CONGRESS OF HORTICULTURE.

An organization under the above name was effected in Washington City, November 17, 1916. The event was the outcome of a meeting called by the American Pomological Society. It is intended that the organization shall serve as a clearing house for national, international and interstate problems, legislative and commercial questions; and also as an active agent in the collection and dissemination of scientific, statistical and economic data in so far as such touch upon the development, promotion and progress of American and foreign horticulture.

The preliminary steps are looking to the establishment of an organization of from 50,000 to 60,000 members, ultimately to include every paid-up member of all horticultural organizations in the United States, the active voting membership to consist of delegates appointed by the affiliating bodies on a basis of something like one delegate for each one hundred members.

This scheme in its entirety contemplates a real or actual Congress, meeting annually and having an active voting membership from 500 to 600, with a corresponding attendance at its sessions, which would be business meetings for the discussion of the big interstate, national and international fruit, flower, vegetable, ornamental, seed and plant problems of this United States.

ANGORA PRICES.

To the Editor: What is the average price for Angora wool? What is the price for young Angora goats for meat?—L. O. H., Hanford.

The average price for wool taken from Angora goats is 35¢ per lb. where it is long, and 25¢ per lb. where it is short. Fat young Angora goats that are shorn would be

worth 3¢ to 3½¢ per lb. Alive and unshorn, with good fleece they would be worth 4¢ to 4½¢.

There is not much of an outlet here for goat flesh, but from time to time small lots of one or two carloads are purchased.

Classified Advertisements

MISCELLANEOUS.

REBUILT GAS ENGINES from 3 to 50 h.p. Thoroughly overhauled and guaranteed. We handle only high-grade engines. Write us your requirements. Motors, Gas Engines bought, sold and exchanged. Mechanical Installation Company, 181-89 Second St., San Francisco.

EVERY SIZE WROUGHT IRON WATER Pipe and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a Square Deal. Weissbaum Pipe Works, 160 Eleventh St., San Francisco.

SECOND HAND WATER PIPE and Screw Casing. New threads and couplings drilled in hot asphaltum. All guaranteed. Send us your inquiry. SHEETER PIPE WORKS, 306-8 Howard St., San Francisco.

PRODUCER TO CONSUMER—Alfalfa meal, alfalfa hay, oat hay, honey, beans, Gyp corn, sorghum molasses, etc.—what do you need? O. L. Linn, Marketing Agent Stanislaus County Farmers' Union, Modesto, Cal.

APPLES DIRECT FROM PRODUCER—Fancy grade, bulk pack. Per box: Newtown Pippins, 85¢; Missouri Pippins, \$1; No. 2 grade, 60¢. Edward A. Hall, E. F. D. 1, Watsonville, Cal.

BUY ROASTED COFFEE WHOLESALE—Best, 10 pounds, \$3.00 delivered. Order with remittance. WM. J. SCHROTH CO., 112-B Market St., San Francisco.

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"HOW TO LIVE ON LESS"—a guide to cheaper living. Wholesale catalogue free. Pacific Co-operative, A236 Commercial St., S. F.

TO REDUCE THE HIGH COST OF LIVING, send for our Wholesaler to Consumer Catalog. SMITH'S CASH STORE, 106 Cay St., San Francisco.

SEEDS, PLANTS AND TREES.

ALFALFA PAYS!—Fancy, double-recleaned, dodder-free alfalfa seed from non-irrigated stands. Purity 99% plus. Reasonable prices. Also Scarified White Sweet Clover Seed. Free bulletin on Sweet Clover. Ralph Waldo Elden, Central Point, Oregon, Box 22.

CELERY SEED FOR SALE—Dwarf Golden Heart variety. Produced from seed purchased from C. C. Morse & Co. Strictly fresh and clean. Price, per pound, \$1.50. James Mills Orchards' Corporation, Hamilton, Cal.

WALNUT TREES—Franquette, Mayette and Mammoth on Black Root; also Grafting Wood and Black Seedling Trees. Lowest prices. Mammoth Walnut Nurseries, Watsonville, Cal.

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STANISLAUS FOOTHILL COUNTRY—After extensive search over California I purchased a year ago excellent 300 acres bench land bordering Stanislaus River, very attractive scenically on main highway S. F. to Yosemite. Soil and climate adapted to fruits, oranges, nuts and alfalfa—we are specializing on almonds and alfalfa. Tract watered by gravity ditch. Brother and self developing portion for own holding. Practically all balance sold to parties doing same. Will sell the three or four fine remaining tracts to desirable parties at very reasonable price and long time. Bank references. George S. Henry, C. E., Oakdale, Cal.

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40 ACRES choice level land. Improved. No alkali. Bargain price Might trade. John Buck, Chowchilla.

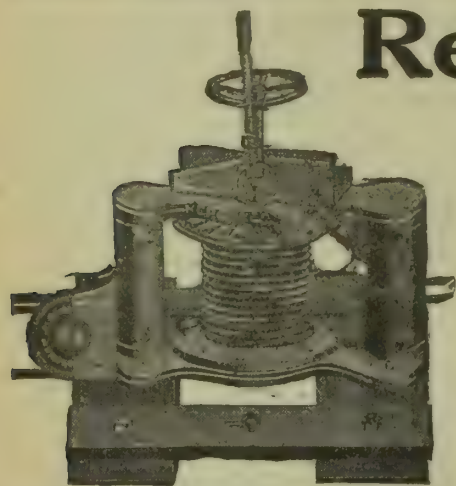
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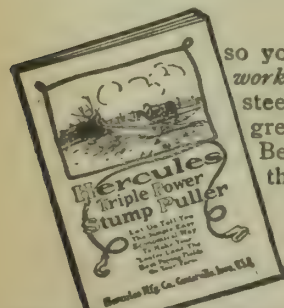
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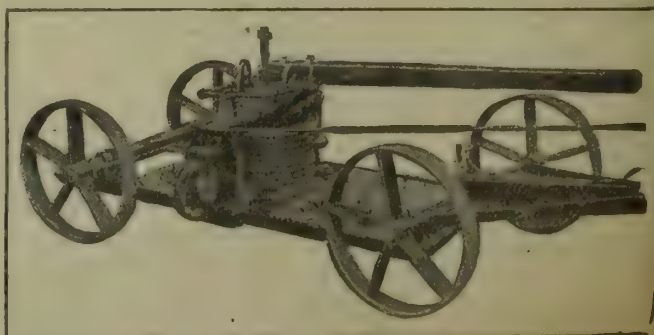
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THE PACIFIC RURAL PRESS

SAN FRANCISCO

DECEMBER 9, 1916.

LOS ANGELES

Coast vs. Valley Seed of Red Oats.

[Written for Pacific Rural Press by G. W. Hendry, Univ. of California.]

THE California Red Oat, variously known as Texas Red, and Rust Poof, is the standard red oat variety of California. It is cultivated in all parts of the State and is widely known and highly prized because of the fine quality of hay which it yields. It is practically the only variety cultivated in the interior of the State, but in the coastal sections it comes into competition with the black oat (North Finnish Black). The black oat is a large, vigorous, coarse growing, late maturing variety, requiring a long, cool, humid growing season. It is slightly more rust resistant and yields more grain and more, but coarser, hay than the red oat in the coastal sections, particularly on the better soils. In the interior of the State the climatic conditions are not suited to this variety and it does not produce well except under the most favorable conditions.

Only one variety of red oats is grown in California, but two classes, based upon geographical origin, are recognized by the grain trade. These two classes are known as coast red and valley red. The coast red is produced largely in western Humboldt, Mendocino, San Mateo, Monterey, and Santa Barbara counties, and is easily recognized by its large size and dark color. It averages 17 millimeters in length by 3.2 millimeters in thickness. The valley red oat is produced in all parts of the Sacramento and San Joaquin valleys, particularly the latter; large quantities being exported each year from the Lodi and Oakdale sections. It is easily distinguished from the coast red oat by its lighter, paler red color, and its smaller and more slender kernels. It averages 14.8 millimeters in length by 3 millimeters in thickness. These two classes of red oats seek the markets and compete as seed in all parts of the State, a condition which has resulted from the general sentiment among farmers that an exchange of seed is a good practice.

Numerous experiments have been conducted in recent years, both in California and elsewhere, in which home-grown seed of various cereals has been compared with imported seed of the same variety, and almost without exception the home-grown seed has given the better results. And so the doctrine of home-grown seed has originated and has been spread by the United States Department of Agriculture and the several State experiment stations. But farmers in general are a conservative lot, slow to adopt new practices, and the California grain farmer in particular is almost a reactionary in this respect, and has consistently continued to import his seed, especially his oat seed, which he gets from the seaboard for planting in the interior of the State.

In the light of previous experimental work this practice might be regarded as unsound, but we have proven it to be not only a sound prac-

tice, but under certain conditions, particularly when oats are grown for hay, to be highly desirable. The fact that most of our red oats is cut for hay rather than for grain makes of this crop an exception to the general rule, and coast oat seed has been found to be decidedly superior to the home-grown seed for the production of hay in the interior of the State.

On the seventh of March, 1916, typical lots of coast and valley red oat seed were planted at Davis for comparison. The coast seed came from the Salinas Valley, and the valley seed from Davis. The two lots of seed, although quite different in appearance, were palpably of the same variety and both yielded seed of the valley type. Had the two lots been grown near the coast, both would have produced seed of the coast type.

The plants were similar in the early stages of growth, but those from the coast seed developed more slowly and were slightly darker green in color. The valley oat stooled earlier and ultimately produced an average of seven mature heads per plant. The coast oat stooled as freely as the valley oat, but the stalks developed more slowly and produced an average of but five mature heads per plant. The valley oat ripened June 20th, 105 days from planting, while the coast oat had many green heads the day cut, June 30th, 115 days from planting. The valley oat averaged 20 inches in height at maturity, while the coast oat averaged 25 inches in height at maturity. The valley oat yielded at the rate of 3.8 tons of green hay per acre, and the coast oat 5 tons per acre. This weight includes the entire plant with a portion of the root as shown in the photograph.

The yield of grain was the same for both, at the rate of 46 bushels per acre, but it should be remembered that the month of June, 1916, was unusually cool, a circumstance favorable for the filling of the later maturing coast oat. Had the customary hot weather and drying north winds prevailed, the coast oat could not have filled as it did and the yield of grain would have been reduced. The valley oat matured earlier and was independent of the weather conditions for the filling of its grain at a much earlier date.

If the planting had been done during December or January, instead of in March, both kinds would have given better results, and the coast oat would probably have yielded more grain than the valley oat, because of its later maturity and more vigorous growth.

In conclusion, several important facts of considerable practical value have been demonstrated:

1. Source of seed is an important consideration in determining the yield of red oat hay in the interior of California and is of as great importance as the variety itself.

2. Coast grown red oat seed produces plants which mature later, grow taller, and yield a greater tonnage of hay per acre, than seed of the

(Continued on page 642.)



INTERIOR AND COAST RED SEED OATS CONTRASTED.

The Yield of Red Oat Hay Is Greatly Influenced by the Source of the Seed. Both Sheaves Are Composed of Common Red Oats, and Each Is the Product of 57½ Feet of Drill Row; the Sheaves Were Grown Side by Side on the University Farm, and Were Given Exactly the Same Treatment. All the Available Evidence Points to the Conclusion that the Difference in Growth Is Due Solely to the Source of the Seed. The Tall Sheaf on the Right Was Produced from Coast-Grown Seed, and That on the Left from Seed Grown in the Interior of the State.

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EDITORIALS

THE SEASON'S PROMISE.

NOW that we have the false prophets of dry weather snugly tucked in their hospital cots, with hot bottles poured into them and hot bottles stacked over them to drive away the hard colds caught from exposure to storms which their philosophies prohibited, we commend their spiritual parts to rapt contemplation of the record that the Lord said unto Noah: "I will not again curse the ground any more for man's sake; while the earth remaineth seed time and harvest shall not cease."

For the fact is, and everyone should have trustfully awaited its appearance, that the outlook for the season is as good as we can humanly discern to be possible. The storm which appeared since the date of our last writing covered the State from end to end, and the precipitation is now beyond the normal at all points where it is likely to be too little and less than normal on the upper coast, where it is likely to be too much. A better start for the season could not exist, and there should be swiftness to make good use of it. We shall need every acre of grain which can be well put in, and the price will reward the grower amply. The demand for fruit, in spite of the obstacles which were conjured up in the distribution of it, has not only given a surprising schedule of prices, but has demonstrated an expanding consumption which justifies the new drive on planting which those who have land and money for it are now entering upon. Our nurseries will be emptied of all good stock if they let the public know they have it. The croaker over increased fruit production has surely been hard hit this year, and he should know that what fruit we now have is only about enough to make a start toward the future, because the growers are only now lighting the lamps along their new commercial boulevard, which will lead them to real achievement. And the producers of animal products should also be lighting their lamps. The world never was so hungry as now, and in this country, at least, was never so able to appease its appetite. We need better products, and vastly more of them of standard quality. We need markets fairer to both producers and consumers, and there is more encouragement to strive for these in the fact that prices will be high, anyway. It is simply a question of who will get the money.

CRAZY QUILTS FOR CONGRESSMEN.

IT IS not surprising that many of the solons at Washington are enfolding themselves in crazy quilts. The old, conventional togas are too bland to attract the public eye, which is now blind to all but lurid lights. It can only see red in the prices which it now has to pay for food, and Congressmen are hurrying to Washington to redden the statutes to match. They will probably not be able to do more than make them flesh-colored, and that will be a good thing, for they usually too little reflect the real life of the people. The political parties are too evenly matched and the different parts of the country too widely represented, to

allow any division of men or of geography to put over anything very bad on the rest of the country. And yet, some representatives, who are fairly panting for publicity, will doubtless try to do their worst on the ground that it will be best for them. For instance, a representative from New York has introduced a bill providing for an out-and-out export embargo on farm products and manufactured foodstuffs for one year. And the same man, seeing that the foregoing would be recognized as a gallery play, put in another bill authorizing the President to suspend exportation whenever prices become extortionate and the public interest requires such action. Of the two propositions, the first is irrational, arbitrary, and intolerable; the second may be worth discussion as a means of reducing speculation, breaking corners, etc., and will doubtless receive careful attention. In fact, this control of speculation figures in several other measures, one of which would provide that the government be empowered to seize foodstuffs on which a corner is attempted, condemn them, and then resell to the public. Still another measure provides for a food dictator with plenary powers, and there are others which are clearly unconstitutional in a time of peace and offensive to the rights and liberties of citizenship. We simply indicate their character without comment, for perhaps all of them have already served their purposes as light-bombs for their introducers, and may now sleep in the cradles of committees until final adjournment of this congress in March next.

DOES THE PUBLIC NEED PROTECTION?

BUT some reader, thinking us over-scornful of efforts put forth in the guise of public service, may ask if we do not believe the public needs protection against the current high retail prices of food. We certainly believe it does need protection, but not in arbitrary embargoes against exports of food products, which would ruin producers by creating internal gluts and force sale below cost of production; nor does it need protection in the guise of seizure and sale of products by a dictatorial functionary, for that would destroy all incentive to enterprise and invade all individual rights proudly called American. Such proposed recourses are defensible as war measures, but are intolerable otherwise, and an insult to the conscience and intelligence of the country. Any congressman practicing demagoguery along such lines ought to be de-Americanized.

So far as we can see, the consumer should be protected in two ways: first, in the practice of his inalienable right to refuse to buy when prices are unreasonably high; second, in government action, which may make conspiratory speculation illegal and unprofitable. But the real cure for the condition which is now working great hardship to consumers is constructive, not destructive. It is very fortunate that this week, when fool notions about legislative cures are burdening all the wires from Washington, through the call of congressmen for publicity, there is being held in Chicago the most wide-reaching and representative assembly that ever convened in this country, to voice its mind forcibly as to what needs to be done to place producers and consumers in proper relations to each other, and to protect both from waste and exaction in distribution and from conspiracy and greed in speculation. The problem which this conference sketches for its own efforts at solution is this:

While the people are complaining of the high cost of living, many farmers are finding that their business does not yield profitable returns on labor and investment. This constitutes the giant paradox of our times, and is so because of certain remediable defects in the economic structure of the nation. We believe these defects come from a crude organization of the farmers' way of doing business. The losses occurring yearly amount to millions and affect producers, transportation lines and many business interests. This waste not only makes for exorbitant retail prices of foodstuffs, but also renders impossible a healthy growth of the farming industry.

This is an outline of the fundamental difficulty which exists in this country and which certain congressmen declare can be removed by such blasts of legislative dynamite as they wish to explode. There is no reason to fear them. The only service they can render is to arouse the country to serious

study of present conditions, and such studies will disclose the remedies. We hope our readers will keep thinking hard on these matters, for much of the better adjustment of affairs of production and consumption will depend upon their co-operative action.

WASN'T IT WELL TO TRY?

ALL who had to do with the sending of animals from the University Farm for competition at the Fat Stock Show in Chicago have reason for satisfaction. Just as we write on Tuesday the announcement comes that "California Favorite," a yearling Hereford-Shorthorn cross-bred steer, and "California Jock," 2-year-old Aberdeen steer, have not only taken first prizes in their divisions at the Exposition, but the grand and reserve championship prizes as well. It is also telegraphed that sheep exhibited by the university have been awarded a blue ribbon.

The success of these animals not only demonstrates that they are good, but it demonstrates that the instructors of the University Farm are "practical" in their selection of animals fit to gain condition and in their knowing how to attain that condition. It will assure the scores of pupils who participated in the preparation of the animals that their instruction was right and their experience dependable. For, though it may be conceded that fitting a prize steer may not be an item in common farming, it is still an illuminating practical operation and suggestive of wise action in commoner things than prize-winning. In its broader aspects, also, the achievement of the University Farm feeders will be a good thing for the State.

CALIFORNIA ON WHEELS.

WRITING of fetching California victories at distant points reminds us that nearly thirty years California promoters sent a train load of California products, properly arranged for exhibition, rolling over the eastern railways, side-tracking in all the larger towns and welcoming throngs of people to see the exhibits and listen to the qualified demonstrators who used the exhibits as texts for exhortations to seek homes and investments in California. It was a moving spectacle, both geographically and influentially, and was very pertinently called "California on Wheels." Now it seems that the old method of demonstration is to be used to make known new and sublimated phases of California development, to-wit: the advancement of women to equal public rights and privileges with men, and to demonstrate to the benighted Eastern States that the knighthood of California women robs them of no feminine charm, but really equips them better for the enthrallment of men which is their birthright. This might be as hard to establish by statistics and argument as is the fact of love, but first sight may make it sure as eternity: therefore the sight method may be effectively invoked to demonstrate the beauty, quality and capacity of California's voting women. Annie Wilde makes this announcement in the San Francisco Chronicle:

President Wilson is about to experience something new from the feminist movement. A delegation of California women will be present at the inauguration in March, and will proceed across the continent in what will be called the "California Special." The travelers on the California special will not only "not bother Wilson," but will "not bother anybody," its intention being to proceed across the continent, "merely looking" at everybody, and making suggestions to nobody. It will not tell any man or woman what his or her duty may be to humanity. The hope is held that the sight of free, enfranchised Western women, passing through the country on their way to an inauguration they had been instrumental in making possible, would have a good, wholesome, uplifting influence on the Southern women and make them conscious of the darkness in which they are hidden, and of the light which will shine on the special, making its swath across the country perfectly discernible to the naked eye.

It will surely be a unique exhibit and quite worthy of the dash and enterprise of California. As it is ostensibly a message to move women we can claim no insight into its constitution, for we have never yet discovered what will surely appeal to them. If it were a message to move men to vote

for justice to women, we might have a suggestion or two as to the intelligent censoring of its contents. We are confident we could fill that special with exhibits which would cause the men to sing "I love thee, California," wherever its wheels stopped turning; but, then, such an excursion would leave plenty of trouble in its wake—not to speak of filling our own orchard shades with Eastern youths, whose sighs might blow the blossoms

off our fruit trees, or our matrimonial pastures with tough, old, staminate grasses. It is perhaps best that the enterprise should proceed as the women have planned. There will be less danger of de-manning the Eastern States. We shall anxiously wait to see whether the Eastern critics classify the rare collection as broadly ornithological or, less reverently, assign it to the gallinaceous group.

of trees by irrigation if the rainfall is inadequate. You ought not to expect much the fourth year, though you may get quite a lot. No one can prophesy what a particular orchard will do, unless he has lived with it for a time, and then it will fool him more or less. In the long run the orchard could probably be calculated to yield the average for the State. Mr. Weldon figures the bearing prune acreage of the State at 91,470 acres. The prune crop, as variously reported, averages about 75,000 cured tons a year, so the average might be a little over .8 of a ton per acre. As you will expect your trees to do better than other people's you may count a cured ton to the acre. You may get more or you may get less; only the trees can tell you, unless you can find an old orchard under similar conditions to measure by.

By
the Editor

QUERIES AND REPLIES

Inquirers Must
Give Full Name
and Address

Beans on Heavy Soils.

To the Editor: Will pink beans do well on heavy soils?—Reader, Del Rey.

Although the lighter soils are generally prescribed for beans, recent experience has shown that beans have done well on what might not be called "bean land." This is partly due to the fact that "heavy soils" is not a very definite term, just as "adobe" is not. Both terms are oftened locally used to mean soil which is heavier than the other soils near by, when there may not be any really "heavy" soil in the region at all. The ability of land to grow beans is often dependent upon the local moisture supply, for if there is neither rainfall or irrigation enough to water-log the soil, beans are quite likely to accept it, if the cultivation is right to conserve enough to suit the plant. Beans like neither water-logging nor soil-baking, nor cementing—all of which bring the plant into distress. For this reason most of our commercial crop is grown on rather light soils, both on the south coast and on riverside lands, because they most nearly meet the requirement of the bean naturally, and therefore give the grower least trouble and most profit. But it is not safe to say that "heavy" land will not give a good crop, if the moisture supply is kept about right. You should try out your land in a small way, and pinks, teparies, and blackeyes, or other cow-peas, are most likely to succeed.

Myrobalan Root on Hillsides.

To the Editor: I am advised to plant prunes and apricots on myrobalan root on hillsides in the Saratoga region. Is not the almond root better?—S. E., San Francisco.

If your soil is rather heavy, or if it is light over a clay subsoil, myrobalan is best. There has been much trouble from sour-sapping on uplands on your side of the valley. This is to be expected from roots like the almond, which cannot endure too much winter water in the soil. Even on hillsides, where one would suppose all the surplus water would run off, there may still be too much of it soaked in, or brought in by seepage from above, over a heavy subsoil, and unable to escape soon enough to avert injury. The myrobalan is the best root to resist this for prunes and apricots, though the pear will also do it for itself. The myrobalan is not only best to resist this standing winter water, but it is also best to help itself to moisture from a heavy subsoil in the summer. The top growth is usually less than from a freer growing root in a soil which suits it, but it is safer and also satisfactory in fruit-bearing. The almond root is good for prunes (but not for apricots) on deep, well-drained soils. This is found on valley lands, and also sometimes occurs on benches or uplands of gravelly character or of light loam with rock fragments. Where there is much depth of this stuff the myrobalan seems unable to reach enough water.

Is It Clean Sand?

To the Editor: I have a piece of river bottom land that was covered with about 18 inches of clean sand during the flood last season. Do you think Windsor beans would go down to the good ground; or would a mixture of rye and vetch be more likely to make a fair growth; or is there some other winter growing crop that would do better than the above?—R. H. W., Oceanside.

Are you sure it is clean sand? What has it done since the September rains which were heavy down your way? If it started good weeds it would probably grow beans if you plow in what green stuff you get during the next two months—providing

you get enough rain this winter to keep the over-layer moist enough to save the beans from burning up. Unless you have some natural demonstration of fertility in the sand we would put on rye as soon as you get enough moisture again. This will determine whether it is clean sand or not and save the money-risk of seed beans or vetches. If it will grow green rye it will probably take a stand of alfalfa next year if there is moisture enough to let it get down, and that will make soil of the sand quicker than anything else we know of.

Food Value of Buckeyes.

To the Editor: I desire to know the food value of the California buckeye, and the name and character of the poisonous element that is harmful to stock when they eat it. How can the poison be separated from the pulp? Can this poison be saved and utilized in the making of denatured alcohol?—G. W., Three Rivers.

Professor Jaffa of the University of California will make the analyses and determinations which you desire, and the results will be made public in due time. The Kentucky station recently published some statements with reference to the Ohio buckeye, the sweet buckeye, and the red buckeye, indicating that they are all poisonous, and according to Prof. Chestnut the same thing is true with reference to the California buckeye, unless the poisonous or objectionable matter is leached out with water, in much the same way the acorn was sweetened for food by the aborigines. Many attempts have been made in Europe and elsewhere to treat the fruit of the common horse chestnut in some way so that it might be made wholesome and palatable, for it undoubtedly contains an abundance of nutritive material, particularly starch, but none of these attempts have been really successful.

As for making the poisonous matter into alcohol, there would be relatively too little of it, even if it were otherwise possible. It would be more reasonable to make denatured alcohol out of the whole starch contents of the buckeye, but we have no idea that enough of them could be obtained cheaply enough to warrant the equipment of a distillery. Making denatured alcohol is a very narrow economic question.

"Lime and Salt" Spray.

To the Editor: Some orchardists of Napa have been spraying prune trees with "lime and salt"—three pounds salt to forty pounds lime. I would like your opinion of the mixture, and what good it will do.—H. J. S., Napa.

Are you sure they are not using sulphur also—making the old "lime, salt and sulphur" wash for the San Jose scale? If they are using only lime and salt they are simply making a whitewash which will prevent sunburn, if it makes a good white covering to reflect the heat. It may also clean off moss if the lime is hot and sharp, but there are better things for that. The salt only helps the lime to hold on, probably. Lime and salt do not possess either insect or fungus killing power enough to pay for the spraying.

What Will Prunes Do?

To the Editor: Will prunes do well on rich, heavy adobe soils, with the water level about sixteen feet? How many tons per acre of dried prunes can a person expect the fourth summer after planting? How many tons per acre can a person expect from an orchard in full bearing on good prune land?—Reader, Del Rey.

Yes; prunes on myrobalan will take that soil all right if the moisture is kept adequate to the needs

Split-Pit and Fruit-Gum.

To the Editor: Kindly inform me as to the cause of split-stone in Crawford peaches, and if there is a remedy for same. The peaches mature well, but are unsatisfactory for the market.—D. P., Mt. View.

To the Editor: My Phillips cling peaches were affected with wax on the surface of the peach. The fruit was good size but unsaleable on account of wax. Please tell me the cause and the remedy.—A. L. H., San Francisco.

Both troubles are attributable to the same cause or causes and no one knows what these causes are, although much expert investigation has been pursued. It is fairly established that the troubles are not due to parasitic invasion of any kind and that, from that point of view, there is no disease and no remedy in the form of spray or other application. The plant pathologists agree that both troubles are physiological, which means that the plant is not growing right or its components are not functioning right. There has been a great deal of theoretical exposition of reasonable causes and treatments but no demonstration of either. The way to proceed, in a place where a variety acts that way too badly or too often, is to work the trees over to some variety which behaves better. When the trouble comes only occasionally, or in small amount, you have to grin and bear it.

Starting Privets.

To the Editor: Please tell me about starting of "privet" (Chinese preferred). Are the small plants started from seed, cuttings, or rootings, and is it practicable for a novice to undertake?—F. M. L., Orosi.

Practically all the privets (*Ligustrum*) can be grown in the open ground from hardwood cuttings made and treated like rose cuttings. They can also be rooted under glass from soft wood during the growing season. Of course to get quick, uniform results it is desirable to buy small rooted plants from the nurseries, as they are not expensive. The plants can be also started from seed, but germination is often delayed or irregular.

Pacific States Industries.

To the Editor: Which is the greatest industry of the Pacific Coast States—agriculture, mining, or lumbering?—W. E. C., Reno.

The following figures of values produced by the three industries in the three Pacific Coast States are from the U. S. Census of 1910:

	California	Oregon	Washington
Mining ...	\$ 63,382,454	\$ 1,101,512	\$ 10,537,556
Lumbering.	45,000,276	30,109,857	89,154,820
Agriculture.	153,111,013	49,040,725	78,927,053

The values are of the products at the mine, the mill, and the farm. They are, of course, much less than values at selling points.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m. December 5, 1916.

STATIONS	Past Week	Rainfall Data		Temperature Data	
		Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka	1.78	7.15	10.85	58	34
Red Bluff	1.88	6.49	6.25	60	34
Sacramento	1.86	3.56	4.14	62	30
San Francisco ...	2.13	5.72	4.65	60	46
San Jose	1.26	3.29	3.61	62	32
Fresno .....	.30	3.19	2.23	70	40
Independence ...	.00	1.13	2.16	60	40
San Luis Obispo ..	2.44	6.58	3.77	76	36
Los Angeles ....	.70	4.26	2.61	70	38
San Diego .....	.10	1.29	1.52	70	44

New Tool for Side Grafting.

[Written for Pacific Rural Press.]

Instead of cutting off the tops of the trees in winter and cleft grafting, J. Garnet Smith of Solano county saves the top and the year's crop by inserting scions into the sides of limbs at desirable places, and allowing them to get well started while the tree bears a crop. Practically all of the 5,000 scions he set last winter are doing well.

Where limbs are cut off and grafted, the scions sometimes fail to grow and the limb dies back, putting the tree out of balance. Often too, the wind blows a living graft out with similar results, or at least the loss of a year's time. When tops are severely cut back, the remainder is usually badly exposed to sunburn which may shorten the profitable life of the tree several years.

In Mr. Smith's practice, the old branches protect the grafts until they are established, and protect the trunks from sunburn. If the grafts fail, which is seldom the case, the limb is still thrifty to bear a crop and to be grafted again later. By this system, too, new limbs may be placed where needed to balance a tree.

About 2% of the labor and 9-10 of the grafting wax are saved, and the trees do not need whitewash for sunburn, according to Mr. Smith.

The reason for a high percentage of living grafts is that the cambiums must cross at four points and are very likely to all be in close contact, with no chance for the bark to loosen. Since the scion is inserted even into the wood, into a sort of a self-locking "pocket," it has a firm grip on the tree from the start. The "pocket" is not much larger than the scion, which may completely fill it, presenting only bark-covered surfaces to the weather. Very little wax and less effort are required to seal it perfectly, with no danger of weather checks admitting rot.

Mr. Smith, who has several hundred acres of fruit this year, grafted peach, plum, prune, and apricot trees 10 to 40 years old, all bearing fruit, and growing new grafts 2 to 6 feet long last May. One tree has 110 scions growing.

Others in this section believe in side grafting. F. H. Wren, who has

long been a professional grafter, is using this system on his own place. J. W. Caughy, Supt. for the Buck Co. fruit ranches, says the method looks to him like a success. Wm. Grant remembers when in his boyhood the side-grafting system was used in France and England. He has done side grafting by boring holes into trees and cutting them with a knife so the scions would fit.

The system is not new, but Mr. Smith has made a great advance in the tools with which it is done. A hammer and a special tool are all that are required for making the hole or pocket. A sharp knife is used to cut the scions. Great speed is possible with little care and great success.

The tool is of steel about a foot long, bent to a right angle about 4 inches from one end. The short end is flattened with its edges coming together to a point at about 60 degrees. The long end can best be described as having been flattened to a broad triangle, with its edges sharp and its point at the end of the tool. Fold this triangle along its center in line with the tool so that it makes a trough whose sides taper down to the point and whose back edge is in line with the back of the tool. Cut off the two corners rounding for appearance and convenience.

To use the tool for grafting, drive the short flat end into the tree crosswise and downward. Drive the other end of the tool square into the tree or slightly downward just below the first cut, until its edges both touch the first cut. This will loosen a solid-triangular plug of bark and wood in whose place the scion is to be driven with a light stroke. Which way it faces and which direction it points matter little.

Give the Graft a Chance to Grow.—Leaving the old growth on the limb draws sap upward and past the new graft so it is assured of a supply to start on. Enough brush must be cleared away to allow light and air required by the growth from the graft. In the second year, still more original brush must be cleared away to make room; so that while most of the succeeding crops may be grown and saved, they should not be allowed to rob the graft and make it of spindly growth.

The Fertilization of Oranges.

[Written for Pacific Rural Press.]

A "black" orange orchard as compared with a yellow one is a pretty good indication that the former has been much better fertilized, according to Fred Arth of San Bernardino county, who has some 60 acres of Navels and Valencias, mostly as "black" as one could wish. This "blackness" is not due to scale, but to shiny good health.

Blood and bone have been the main fertilizers every year for the past four or five years, not stopping when the freeze shut off the income. The soil is somewhat heavy but mellow, on account, probably, of the vetch cover crop plowed under every year. This same cover crop has made manure unnecessary, though some was applied last winter

for the first time. On trees 10 years old he applies about 15 pounds of blood per tree and five pounds of bone. No nitrate of soda is used on account of its mottling effect after continued use. These fertilizers conflict a bit with the vetch, for Mr. Arth believes they should be applied and plowed under Jan. 15 to Feb. 15, a month before they are needed at blooming and fruit-setting time. He would give the roots time to heal before the fruit demands too much sap. He, however, delayed plowing somewhat, for the sake of getting greater vetch growth to turn under.

Where vetch is growing, he would broadcast fertilizer on it, especially among older trees. Among smaller trees he would apply the fertilizer

closer to them, but not in the middles because the ground there dries out more, and the roots do not get at the fertilizer soon enough. From three acres of 270 Valencia trees 9 years old in 1914 Mr. Arth picked over 1800 boxes. In 1915 he picked 2192 boxes which were sold early in the season for \$2500. The 1916 crop is estimated at 2000 boxes.

The value of fertilization is illustrated by Mr. Arth by mentioning a 30-acre orchard not far from his, which yielded about \$6000 boxes in 1915, the same total as one of Mr. Arth's blocks of 10 acres. Similar care had been given both, except that the larger orchard had not been fertilized.

THE FINEST CROP COVER.

[Written for Pacific Rural Press.]

The best growth of mellilotus cover crop we saw just before Thanksgiving in the Fair Oaks district was that on four acres belonging to J. E. Adams. He had planted it shortly after the Pacific Rural Press recommended planting in August.

The seed was broadcasted, cultivated in, harrowed, and ditched for irrigation. Three furrows per tree row were used, and two miner's inches of water were run into the ditches 1/2 to 3/4 of a day per acre.

Always after each of the monthly irrigations, the orchard is cultivated both ways and harrowed both ways. Another irrigation would have been given the cover crop in October had Mr. Adams not withheld it to hasten the coloring of the oranges. Even so, the cover crop was a foot high before Thanksgiving.

Mellilotus was grown here last year and each the year before, but no cover crop previous to that. This year his crop from four acres of oranges is between 30 and 35 tons.

The cover crop is adding a heavy nitrogen fertilization, and lots of humus, is improving the texture of the soil, and will prevent its washing this winter.

DRYING OLIVES.

[Written for Pacific Rural Press.]

Mission olives that hung on the trees all winter in the orchard of G. L. Camden of Sacramento county were dried last spring and are in perfect shape now. Mr. Camden used what he calls the Greek method. Layers of salt and ripe olives untreated were put in a small barrel. About 2 1/2 times as much weight of olives as of salt was used. No water was added. Every 24 hours for six weeks the keg was turned the other end up. A brine developed and took out most of the bitterness. Eight weeks will be taken for this in the coming winter, for last spring's olives are a trifle too bitter to be relished at first.

At the end of six weeks, the olives were washed out in fresh water and part dried on trays in the sun. These dried up rather hard. The rest were laid out in the basement until they dried like prunes and some of them were kept in a glass jar. They certainly make fine nibbling for lunches and between meals.

The value of the first pool of walnuts from Goleta and Carpinteria valleys is \$215,395.50.

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Crude Oil Emulsion Spraying.

[Written for Pacific Rural Press.]

From 10 or 12 years' experience in spraying apricot and prune trees, W. H. Stuart of San Jose speaks with authority on crude oil sprays, which he uses constantly for dormant trees.

When to Spray.—He begins as soon as leaves are off, because then the spray will work all winter before the hot sun strikes it. Early spraying also means that you sure get it on; while the ground and the weather are good for spraying. But he uses the crude oil spray all winter, having even drenched almonds in bloom with a 12 to 13 per cent emulsion of 14-degree crude oil without damage. The later spraying has the advantage of finding insects weakened by winter weather, and trees pruned so they are more accessible. If crude oil spray is on the trees four or five hours in good drying weather, it dries to a sort of varnish which resists weather.

What He Uses.—Either the commercially prepared crude oil emulsions or a home-made product are used by Mr. Stuart. The commercial kind is preferred because it requires less effort and is less disagreeable to handle, though a trifle more expensive. Where help is scarce or time short, the commercial emulsions are used; and are more likely to be of uniform strength and more surely emulsified.

When Mr. Stuart makes his own emulsion, he ordinarily uses a 14-degree crude oil because there is less possibility of damage than with that up to 19 degrees, which contains more of the lighter and more penetrating oils and is more expensive.

Distillate, besides being more expensive and dangerous, is unnecessary for winter spraying on the brown apricot and Italian pear scales, the moss and lichens, and the brown mite and other aphid eggs which are the most general pests in Santa Clara Valley. Mr. Stuart has noted a tendency for distillate sprays to "burn the bark, leaving it

hard, harsh, and dead-like, while the crude oil sprays leave it pliable. Crude oil is to the tree what harness oil is to leather." Distillate sprays used carefully are necessary in the spring, but may burn the buds. He has burned walnut bark, but has never known of injury to prunes and apricots from dormant spraying with crude oil. The 14-degree oil is harder to emulsify but makes as good a kill of fruit pests as the 19-degree oil, according to Mr. Stuart. The only danger is from an imperfect emulsion.

How to Mix It.—Melt four pounds of common laundry soap if whale oil soap is not available. Dissolve completely two or three pounds caustic soda. Put 5 to 25 gallons water into the tank, add the soda and the soap, keeping the agitator going. If the soap is poured into a large amount of cold water, it will "freeze," says Mr. Stuart. Then add water until within 25 or 30 gallons of filling a 200-gallon tank. Finish filling with oil, keeping agitator busy.

Spraying a Tree.—It is best to spray from the top down, says Mr. Stuart, being most sure to drench the twig ends where insect eggs are often laid. Spray till the fluid begins to run down the branch. Don't be afraid to step around so you can shoot the spray directly at all sides of every limb.

A nozzle giving a flat sheet of spray is used in order to get more force to penetrate hiding places and even knock off bugs in the case of spring spraying. It is easily opened if clogged, and the spray goes where you aim it. When the sheet of spray is directed up and down toward a limb, it gives the limb full benefit of all the spray. This of course is in regard to trees when leaves are off. In any event, an angle nozzle is used for greater convenience in doing a good job, and about 200 pounds pressure kept up in the pump.

CRACKED PRUNES — MEALY PLUM APHIS.

[Written for Pacific Rural Press.]

Last year the mealy plum aphid was particularly bad in various sections, including Placer and Contra Costa counties, though it was absent from Santa Clara county, where it had done severe injury the season before on French prunes. This aphid, according to Placer County Horticultural Commissioner C. K. Turner, "seems to infest only plums of domestic varieties, while cracked plums are nearly all of the Asiatic species." In Santa Clara county, however, Horticultural Commissioner E. L. Morris found "associated with this insect a form of cracking generally across the ends of French prunes opposite the stems and often deep enough to expose the pit."

Last July we found a disheartening loss of prunes in Contra Costa county by the same kind of cracking which seemed to occur mostly after the fruit commenced to color. Some were split clear to the stem, and many were so wide open that the pits would have fallen had they not

been stuck to the insides. Most of the prunes had three cracks leading to the end. Leaves and fruit were nasty with honeydew oozed by the insects and the road dust, etc., collected on them. The aphids were gone.

It is noted by Mr. Turner that about July they leave plum trees and remain on tules until fall when the females return to the trees and lay eggs largely on the tops and tips of outside twigs.

Control.—Two means of control are thus apparent. During the first two or three weeks in September, a maximum number of the insects can be destroyed by burning all tules in the neighborhood.

Burning pruned twigs and spraying the rest, especially the tips, with crude oil emulsion 15 per cent strength, during the dormant season is pretty sure to minimize the infestation. If this seems impracticable, Mr. Morris recommends a lime-sulphur-tobacco spray just as the buds are swelling when the eggs are hatching. Mr. Turner suggests blackleaf 40 and soap when the first green leaves appear.

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Los Angeles.

Remedy for Declining Lemon Trees.

[By J. D. Guthrie, Santa Paula.]

The symptoms of decline in a lemon orchard, as we have observed them, do not all appear simultaneously in each and every tree in a given orchard.

Symptoms.—Perhaps the most common symptom, be the crop large or small, is the tendency to produce a high percentage of fruit which habitually matures undersize despite generous fertilization; hence an undue proportion of ripens and small sizes overabundant, not only in the ripens but in all of the better grades as well. This forces a larger proportion of the fruit to sell at a discount—some of it possibly not at all—besides requiring greater expense in handling and packing, and subject always to heavier decay.

To this poorer quality is often added the loss from greatly reduced yield. Frequently many lemons hang far out on the ends of rather long, attenuated fruit spurs. These are always of poor quality, irregular shape, and disfigured by sun and wind scars. The foliage is usually more or less dwarfed, sparse and of poor color. Many leafless fruit spurs may be found in all parts of the tree, both inside and out, bearing little or no fruit.

Checking and cracking of the bark of the main trunk often takes place, frequently extending from bud line upward and well out on the main branches. Later this flakes off, exposing a new bark underneath. Many trees appear to be in great distress during this process—a trouble not thoroughly understood, but thought by some to occur earlier on trees that have been consistently heavy producers.

The above symptoms of decline are given with reference to trees supposedly well cared for in every way and on first-class soil. A very different class of trees, showing many of the same symptoms, consists of trees whose inability to produce fruit of quality has been due to: lack of adequate water; soil impoverished for want of organic matter, resulting in poor physical condition; lack of nutrition, apparently in most cases, because of an inadequate supply of nitrogen in proper form; shallow soil underlaid with sand and gravel incapable of the capillary power necessary to bring back moisture and soluble plant food that have passed through to lower levels during winter rains and irrigation; loss of part of the root system, through injury or disease, or, perhaps more frequently, a similar loss of bark on the main trunk.

Cure.—Mature fruit trees of all kinds, suffering from poor soil, water, or cultural conditions, or from disease, have long been known to be greatly aided toward profitable production by liberal pruning, even if the other disadvantages are not removed. Indeed, it was largely from object lessons obtained from pruning trees with such special disabilities that the conviction came to us that if heavy pruning would so conspicuously improve them, how much more fully might not this be realized in a tree not thus handicapped.

Another matchless object lesson was the heavy freeze of January, 1913. A fifteen-acre block of our twenty-year-old trees that had be-

gun to show many of the symptoms of decline was frozen just enough to kill probably eighty per cent of the fruit wood, and many of the larger exposed branches were so injured that the outer portion of the main structure was reduced at least thirty per cent. Advantage of the opportunity was also taken to remove all cross limbs and unnecessary leaders. It need not be told how these trees "came back." Nearly every community has been a witness to a similar rejuvenation of at least a few lemon trees of mature years. That year's crop was zero, of course, and even during the second twelve months after the freeze we gathered less than two field boxes per tree, though of superb quality. The third year, however, the crop was ten per cent above any prior yield, and again of highest quality. The present year promises even a greater production with quality still unimpaired.

Thirty years ago Nathan W. Blanchard, of Santa Paula, the well-known pioneer in lemon-growing, was shipping one hundred packed boxes of lemons per acre from an Eureka orchard planted in the '70s. The trees were allowed to grow very much like seedling orange trees until twenty-six or twenty-eight years old. By that time the symptoms of decline, as we know them today, were very evident, both in the orchard and on the balance-sheet in the office. Low heading of lemon trees was being vigorously agitated throughout the lemon-growing sections. These considerations led to a most severe top pruning, so heavy, in fact, that the crop was cut to forty-five per cent of normal. The second year it rose only to eighty per cent, but the third year the yield was one hundred and eight per cent of normal quantity, and of such a superior quality that it was probably equal to one hundred and fifty per cent of the previous normal value. The production has steadily increased to one hundred and twenty-five per cent of the original average crop, but now, after an interval of thirteen years since pruning, the fruit sizes are growing smaller and the percentage of ripens increasing—premonitions of the day when possibly another pruning may be necessary.

[Editor's Note.—Methods of rejuvenating Limoneira orchards is described in the rest of the address, which will appear in another issue.]

GOOSEBERRY FAKER.

[Written for Pacific Rural Press by W. D. Guthrie.]

A man is selling to Placer county farmers what he claims to be an exceptionally large and heavy yielding gooseberry. He is considered a faker by those who know his methods. He will not tell where the gooseberry plants are grown. He promises to build a cannery and buy the gooseberries at 6 cents a pound, but furnishes no bond. He sells the plants to one farmer at 25 cents each, to another for 5 cents. One lot of berry plants delivered had a tag showing who shipped it. A registered letter written the shipper by Farm Adviser E. A. Amundsen received no reply.

It was suggested to the agent that

a good way to sell the plants would be to get the Farm Adviser's approval; but he has not met Amundsen. He is said also to have given different names and different addresses to the different ranchers.

He usually sells the plants, taking five dollars down to bind the contract. The size of the berries is shown by a sample which he carries in a little glass bottle.

I understand that he has operated in the Santa Clara Valley and no doubt plans to work the whole State. Better buy from established nurseries.

In grafting over old peach trees, wait if possible till the buds are swelling. By cutting back too early in winter the bark dries out and shrivels dangerously for the graft, and there is not such a strong burst of young wood.

MISSION OLIVES

EARLY RIPENERS.

THE EHLMANN OLIVE CO.

Oroville, Cal., Nov. 17, 1916.

Mr. W. A. Hayne, Box 461, Marysville, Cal.

Dear Mr. Hayne: Answering your kind favor of the 15th, I am enclosing herewith photograph of some of this year's fruit on the Fogg crop, and you will note that they are above the average Mission. We also were able to harvest this entire crop before the frost, which shows that they are early ripeners.

We will be glad to keep in touch with you on this matter, and if we can be of any further service, don't hesitate to let us know. Yours very truly,

(Signed)

E. W. EHMANN.

I propagated the Fogg orchard thirty years ago. The origin of the Fogg trees was directly from the old Mission at Santa Barbara. The trees I have now for sale are full brothers to the Fogg olive trees, and, like the Fogg trees, they are all propagated from the large size cuttings.

W. A. HAYNE.

Box 461, Marysville, Cal.

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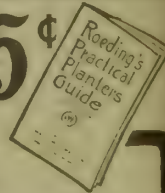
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—"REX" SPRAYS—The Standard for 20 years

AVOCADOS KEEP LONG IN STORAGE.

[By E. V. Willcox & C. J. Hunn,
Hawaii Expt. Sta.]

With the considerable number of varieties of avocado which are now grown in Hawaii, the season of this fruit has been extended to cover six months or more a year. It was desirable to know, however, whether some of the better varieties could be held for a month or more in cold storage in order to prevent the loss which occurs when the fine varieties are shipped in such quantities as to flood the market. Only a few fruits of the hard-shelled Guatemala variety of avocado were available for testing. These fruits were kept in the station fruit room one day before going to cold storage, and were then held in the 32° and 45° F. rooms for a period of 65 days, being examined in storage at weekly intervals. A few of the fruit had been picked too green and did not ripen or show any tendency to soften during the test. Those which had been picked half-ripe began to manifest an approach to table ripeness after a period of one month. At the end of two months the pulp was found to be of normal color and excellent flavor, with no apparent alterations due to cold storage.

In further cold storage tests of avocados, boxes of miscellaneous varieties were used from Kona and the island of Oahu, and a few boxes of finer flavor from those bearing station numbers 1855 and 1871. In all cases the fruit preserved its normal color, appearance, texture and flavor for a period of two months in either the 32° or 36° F. room. There was in no case any discoloration of the pulp or fermentation or apparent loss of flavor. The color of the skin became slightly deadened after 75 days, but the pulp was still in perfect condition.

When removed from cold storage after a period of 60 days the fruit which had been kept in the 32° F. room held up longer than that from the 36° F. room. Avocados picked green and held in cold storage for two months ripened with good flavor within three days after removal from cold storage, and held their flavor well for a period of six days. The avocado seems to be well adapted to cold storage at a temperature ranging from 32° to 36° F. for a period of at least two months.

Cold Storage Kills Fruit Fly.—Avocados are perhaps the only commercial Hawaiian fruits subject to infestation with Mediterranean fruit fly, for which there is a demand on the mainland. In experiments reported, fruit fly larva and eggs failed to live through an exposure in cold storage even at 36° F. for longer than 4½ days. It is not safe, however, to assume 4½ days as an outside limit. It would seem safe to assert that infested fruit maintained for two weeks at a temperature of 32° could not possibly contain the living fruit fly in any stage. Avocados, however, may be held for at least two months in cold storage.

MUSCAT IRRIGATION AND PRUNING.

To the Editor: Will irrigation cause the blossoms to drop when in

bloom on a nine-year Muscat in sandy soil? How many spurs should be left with two or three buds?—G. M., Sanger.

Irrigation while Muscats are in bloom encourages excessive sap flow which we believe is a principal cause for blossoms dropping without setting fruit. At that time there is practically always plenty of winter moisture in even sandy soil. Irrigate when the vines need it. If the vine made especially vigorous wood growth last season, leave enough more fruit buds (not counting the ones at the base of canes) to reduce the wood growth next season, throwing that wasted energy into fruit. Leave canes as long as will be convenient in cultivation so that there may be fewer of them and thus not crowd the fruit and leaves too close-

ly around the head where mildew would be harder to prevent. Save the plumpest canes and leave some one-bud spurs close to the trunk for next year's fruit spurs.

SIMPLE BEAN RAISING.

[Written for Pacific Rural Press by
Chas. F. Barnum.]

A fine crop of beans are to be seen on the T. Tirth ranch at Burbank. Six acres each of Mexican Reds, Lady Washingtons, and another variety are producing 20 sacks to the acre.

Mr. Tirth planted them in the bottom of a 12-inch furrow with a corn planter the first of March. Then he dragged it level, leaving the beans to average 6 inches deep. As soon as they were up good he harrowed and furrowed them; then, May 15th, gave an irrigation and none since.

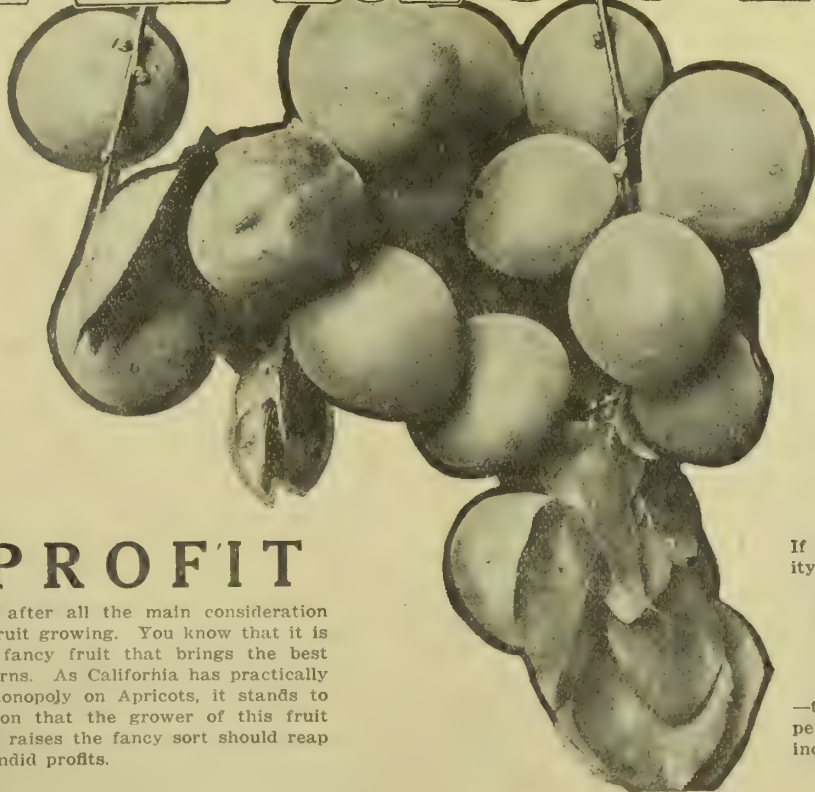
ASHES FOR SOIL.

To the Editor: When is the best time to scatter ashes on the ground to loosen the soil.—J. H. C., Mountain View.

Wood ashes tend to compact the soil rather than loosen it, due to the potash they contain. Lime has the loosening effect by flocculating the particles of soil; and we would apply it as soon as possible so the winter rains would carry it down into the soil where it is to do its work. Coal ashes are good to loosen soil if dug in. Their action is mechanical, the same as any other grit.

Word comes from San Bernardino that the recently enacted county ordinance providing an 8-to-1 test for all oranges shipped out of the county has been rescinded.

Success in Growing APRICOTS



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State-Aided Rural Credit Not Wanted.

To the Editor: We have a State banking law and we have a superintendent of State banks whose duty it is to see that the banks are conducted according to that law. These banks are established in every city and town of the State wherever the business will warrant. In the smaller towns they are made up of local merchants and farmers. It is safe to say that half the stockholders of the country banks are farmers.

The rates of interest in country banks are about the same as the rates at the money centers and they range from five to eight per cent—according to who pays the taxes, the possible depreciation in values, the character and standing of the borrower and other conditions. The directors of these banks, knowing the value of about every acre of land in their vicinities, can make loans intelligently and at the least possible cost to the applicant.

Now, it is proposed (and for no apparent good reason,—save for the creation of another set of public officials) to pass another law, in direct opposition to the one existing, to authorize the State to borrow money, for which it must pay the current rate of interest, and loan it to farmers on long terms at four per cent per annum.

The State should not loan money at all in opposition to the banks of its own creation; it should not loan it at a lower rate than is customarily charged. If the banks can't loan money on long terms, surely the State cannot. The State is too

young and the people too changeable for long loans. The State should not force the bankers to help pay the deficiency on these loans by increasing their taxes, nor should it countenance class legislation.

If this thing were consummated, it would add one or more to our long list of commissions, which would probably be established at Sacramento. Let us suppose there is an application for a loan from such distant counties as Del Norte, Modoc or San Bernardino. The commission would naturally send out its agent to investigate—to pass on the lay, the fertility, accessibility, etc., of the land. Could such an agent (a stranger) give as intelligent a report as the local bankers? Such a trip would be expensive. Who would pay the cost and who would watch the progress of the case during the long term of years it had to run?

Gualala, Cal. C. Queen.

[We are glad to know our correspondent's views, although they do not seem to be apropos of anything now pending in State legislation and are therefore incapable of either confirmation or denial. The statements may, however, be suggestive to those who are considering the attitude of the local banks toward the general propositions for rural credit organizations.—Editor.]

GRAPE ROOT WORM.

[Written for Pacific Rural Press.]

If your grape leaves last summer were laced with long narrow holes,

partly or entirely through the leaves, or if your grapes had similar brown blotches when ripe, you may expect damage from the California grape root worm next season. The holes were eaten out by the adults of the root worm, which are beetles about 3-16 of an inch long. Their larvae are now encased in mud cells in the ground close to the vines, and may be destroyed by cultivation if the cultivator reaches and breaks the cells. Many are likely to be too deep, for they have been feeding on the grape roots since they hatched in early summer. They will transform into pupae in the spring and become beetles in May or June.

Aside from the fall and winter cultivation, the practice in San Joaquin county, according to Horticultural Commissioner H. H. Ladd, is to trap the beetles while they are on the vines along in May.

A four-foot square piece of sheet-iron is cut in two and a semi-circular hole cut into the center of one edge of each so that the pieces may fit together when laid with the holes next to the vine trunk. The upper sides of these sheets are smeared with crude oil. They are placed carefully under the vine. Then the vine is struck sharply, and the beetles "play possum," dropping onto the sticky trap.

PEARS IN LAKE COUNTY.

To the Editor: What is the average yield per acre of pears in Lake and Mendocino counties, and what are the prevailing prices paid to the grower?—G. M. B., Covelo.

[Answered by Lake County Horticultural Commissioner F. G. Stokes.]

Regarding the yield per acre of Lake county pears, much depends on the particular orchard in view and the age of the trees and the adaptability of the land for pear growing, freedom of locality from frost, etc. I can cite an instance of six acres of six-year Bartlett's producing 14 tons of pears, i. e., more than two tons to the acre, but this is exceptional as an average at that age. Also I can mention an orchard of 10 acres (20 years old) last year producing 101 tons of Bartlett's.

Growers last year got \$20 to \$30 a ton, delivered to packers and dry-yards. My pears netted me \$36 a ton, f. o. b. ranch, as I did my own shipping and drying. This year the C. F. C. A. paid as high as \$39 and \$40 a ton delivered at their dry-yard, and John Stahele, in some cases, \$35 a ton orchard run. Today our A1 dried pears are selling as high as 10 cents a pound f. o. b. ranch, boxes found; and in one case Mr. Spiller tells me he received 11½ cents. Ten cents, f. o. b. ranch, is quite ordinary.

The best thing Mr. B. can do is to come up and investigate.

HUMIDITY AND SPRAYING.

[Written for Pacific Rural Press.]

Damage by spraying a citrus tree one morning with the same spray used harmlessly across the fence on the preceding day is attributed to difference in humidity by L. G. Duval of Ventura county. Prof. Woodworth of the University of California says the soil moisture in the tree has more effect than air moisture on the tree, though the latter may act as a shield if there is enough of it.



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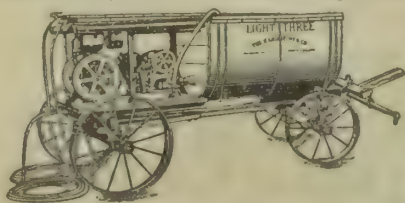
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A Rural Community High School.

[Written for Pacific Rural Press by H. K. Dickson, Kerman.]

California is rapidly changing from a State of large isolated farms, leading to a central town, to a State of many little towns with their own thickly settled rural population. When the schools open in the fall each of these communities has a common question to answer: "Are we going to send our children off to the city schools for the higher education, which they must have to compete with the present-day conditions, or shall we supply it to them at home?"

The city schools are well equipped and give good courses, but they take the boys and girls away from home at the critical, formative age, and transplant them into new conditions. These new surroundings over-emphasize some of the advantages of city life and work, while they do not give a fair consideration to the country life. The child is really forced away from the farm by the misconceptions of his town friends. He is at an age when his own judgment is at a low premium. Can a rural community afford to put its boys and girls to such a test?

Kerman is a rural community of some four thousand, lying in the San Joaquin Valley about eighteen miles west of Fresno. It has worked out one solution for this common problem by starting a community High School six years ago, which graduates students in the same standing as any of our large schools.

A medium-sized building contains class rooms and one large study hall. This hall is also the meeting-place for the bi-weekly Civic Center League of the community. The main trouble has been, the room is hardly large enough to house this enthusiastic community at its evening gatherings. Another interesting fact is that the entertainment for these evening meetings is furnished almost wholly by local talent in which the high school student learns to work with the older people.

To one side of the central building Kerman has built a modern bungalow, in which the girls are taught all of the city school courses in Domestic Science and Art. It goes farther than that, for it applies these new popular city courses to rural conditions.

Agricultural Equipment.—Kerman is an agricultural district, so it bought for its high school twenty acres and erected the school building at the cross roads. An agricultural building has a dairy laboratory with cement floor, 24-bottle Babcock tester, Little Giant Boiler, churn, scales, etc. The wall-cases in the corner of the recitation room are full of specimens of farm interest, such as tubercular lungs, hog cholera, blackleg, muscle, kidneys, peach-borers, root knot, etc. In one corner there are a number of farm levels, and in another a Cipiletti weir for measuring ditch water. Everything in and about the building deals with actual farm problems, and these fifty or sixty Kerman farm boys are getting scientific agricultural instruction in their own farm community.

The school farm contains an orchard of some fifty varieties, a school vineyard of twenty varieties, and

acre plots of different kinds of field crops. It attempts to raise clean seed of new varieties for the community, and help solve some of the community soil problems, through cover crops, rotations, fertilizer demonstrations, etc.

An Evening Dairy Course was carried on last winter in the high school laboratory by the high school instructor, with an enrollment of 26 dairymen, for 12 weeks, the attendance never falling below 18, and often above 30. Nearly the same number of new men have already asked that the course be repeated this coming winter.

Every winter the school conducts a Farmers' Institute in connection with the State University. Specialists prune a set of the school trees from year to year, and so leave a model in the community, on which records are kept by the school. The boys' horticultural class prunes the rest of the orchard and vineyard. These boys also prune and keep records on sections of their own home orchards and vineyards.

This year auto busses are bringing in children who live more than a few miles away, and so would have a long drive. Almost every child comes from a country home.

The system is working. Children may take all of the ordinary academic high school courses, and in addition, their commercial work, domestic science, or agriculture. They are at home mornings and evenings with their parents. They are not given an unbalanced impression of the city's advantages during this changing age. They are growing up with their own home community, and are really becoming an active part of it, as they grow to take part in community affairs. The community is interested in its own high school and the school in serving its community.

DRY LAND FORAGE.

[Written for Pacific Rural Press.]

What may develop into a valuable summer cover crop and forage plant in the Sacramento Valley, is the native weed Lotus Americanus, one of the Spanish clovers, found in a number of places by Horticultural Commission Harney of Yuba county.

Mr. Harney states that this plant is a rank grower on the red clay soils, without irrigation, starting growth with the beginning of the dry season and continuing till the winter rains commence. Rain seems to disintegrate the plants.

As these soils need protection from the hot summer sun, where fruit is being grown, Mr. Harney believes this plant has unusual possibilities. It may be sown at the end of the summer cultivation, thus setting ahead the usual cover crop scheme. Being a legume it should also furnish additional fertility. Under natural conditions, it starts to grow about July 1, and pods form continuously.

Mr. Harney has collected seeds of the plant for Prof. P. B. Kennedy, who will conduct experiments with the plant at the University Farm, Davis, during the next year. Its value or danger for stock-feeding is not yet known.

TALKS ON Nitrogenous Fertilization

Number 2

WE HAVE STATED that agricultural authorities are generally agreed that California crops need more nitrogen than California soils can give them. Director Hunt, of the Berkeley Experiment Station, writes as follows:

"Whether it is Mottle Leaf in orange trees, Little Peach in peach trees or low yields of wheat, the cause appears to be the inability of the plant to secure and assimilate a proper supply of nitrogen."

SULPHATE OF AMMONIA

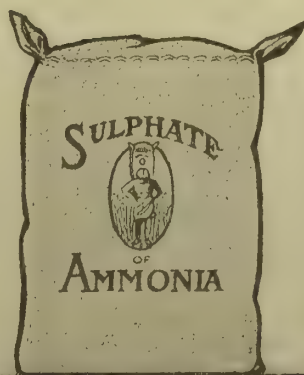
Sulphate of Ammonia is mentioned by name among the various Nitrogenous Fertilizers recommended to overcome this deficiency.

It is by far the highest of them all in nitrogen contents (20.56% = 25% ammonia) and is particularly adapted to soils that tend to be alkaline, as this tendency is checked by the residual action of the Sulphate.

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Labor Needed for Silage Crop.

[Written for Pacific Rural Press.]

Silo owners are almost invariably the best satisfied lot of farmers we meet and such is the case with W. F. Mitchell of Tulare county, who has two silos on his purebred Holstein breeding farm.

In the first place Mr. Mitchell believes in silage because of its value in connection with alfalfa hay as a dairy cow ration. Before erecting his silos it had been his custom to buy high-priced concentrates, but now all of that is done away with, at a saving, considering his cost of growing silage.

On the 12 acres of corn planted this year, which had previously grown a crop of grain hay, the labor involved in irrigation, plowing the land, seeding, and putting into the silo was as follows: Plowing land, one man with team three days; harrowing land, one man one day with team; smashing clods, one man one day with team; planting, one man one day with team; cultivating, one man six days with team; irrigating, one man two days; harvesting, hauling to silo and siloing, 12 men two days with four to six teams. Labor figured at \$2.00 a day.

Allowing for all expenses, except

rent of land and water, the cost of the silage runs somewhere between \$1.50 and \$1.75 a ton. As the land has already produced a normal crop of grain hay the rental charges must be reduced accordingly.

The cost of the silos themselves was not excessive owing to the fact that Mr. Mitchell erected them himself and on that account they were better built than they would have been by contract.

This is accountable for by the fact that the best grade of resaw, six inches wide and sized on both sides, was used, the best being put on the weather side to guard against splitting as much as possible. Between the two layers was nailed a course of one-ply roofing paper and all of it was nailed to two-by-three studing set on 12-inch centers.

Before nailing the resaw it was thoroughly soaked in water, as there was less danger of breaking it while bending into place.

While the silos have only been in use two seasons Mr. Mitchell states that there has been no loss by leakage and none spoiled except the first few inches on the top of the silo before feeding is commenced.

Preventing Wheat Smut.

To the Editor: What is the formula for blue-stoning wheat for smut—also formaldehyde for the same purpose?—P. R. S., Elk Grove.

Use 1 pound bluestone per 4 gallons cold water. Dissolve by hanging it in a bag partly immersed in the upper part of the water in a wooden or copper vessel. Each grain should soak three minutes or less, being sure to be wet all over. This is impracticable if done in sacks. The sure way is to shovel it loose into a tank of the solution. Then shovel it into a tank from which a drain runs back into the first tank. The spores of bunt are killed by this treatment. Either sow within a day or two; or dry the grain thoroughly. If sown before the rains, or kept dry for any length of time, a treatment with lime water is sometimes recommended to neutralize the bluestone effect on germination. Stir ½ pound freshly burnt lime into 10 gallons of water and after settling, use the clear water. Plug the drain in the upper tank containing the bluestoned seed after it has drained ten or fifteen minutes and pour on the clear lime-water for two or

three minutes. Then drain this separately to use repeatedly until litmus paper shows that it is about neutral, when it is of no further use. Then dry the grain and keep it separate from other grain so it won't become reinfected.

Formaldehyde is a gas which is handled for grain treatment in the form of formalin, a 40 per cent solution of formaldehyde in water. Be sure a 25 or 30 per cent solution is not substituted for a 40 per cent solution.

Use a pound of 40 per cent formalin per 50 gallons of water, soaking the grain in it 10 minutes or longer. The time of soaking from 10 minutes to an hour does not affect germinating power; but a stronger mixture does. If the seed is to be kept long, it must be dried or it will rot.

During the soaking, skim off all smut balls, light grains, and weed seeds which float.

These treatments do not control the "loose smut" which is not generally worth the trouble of preventing. Careful use of hot water is the prevention for this.

THE TURN IN THE SEASON.

To the Editor: About ten days ago I wrote you that a dry November was in evidence, and probably a prolongation well into December. Since then the weather has made a decided winter's cold settled over interior Alaska, which came on only a few days before it rained, and has remained since. This cold produces a high barometer area, and thereby northern storms have a chance to come down the full coast length before very long. A decided Arctic change, not fully demonstrated by the light coast storm of Nov. 25, which was only the tag end of a heavy Washington storm, exhausting itself in the upper half of the State.

The change has come because the high barometer area to the northward moved off the map—so that forces storm areas southward in-

stead of leaving them move eastward over the British Columbia and Upper Rockies, as they do in their summer courses. The temperature at Tanana, interior Alaska, ranged above 20 degrees up to the 16th or 18th of November; since then it has fallen to 35 deg. and even to 40 deg. below. This sudden change produced as sudden a change in rain movement.

This is the first time since the heavy September rains that the weather map is coming around to rain conditions. About the 5th of November we had but a showerlet. My forecast previously was based on general tendencies to date of the weather map; also on the few years of heavy September rains.

Berkeley. L. E. Blochman.

[We regret that Mr. Blochman's note came just too late for last issue, which had to be put ahead so the

opulent printers could gorge themselves on 35c turkey. We are glad to have him tell us now how the change came about.—Eds.]

RAISING QUEEN BEES.

[Written for Pacific Rural Press.]

If you do not care to import adult queens, it will be necessary to raise some. This is done by taking brood comb from some one's pure Italian swarm, and putting it into your own hive. In doing this, it is necessary to pinch with the fingers all the queen cells already in the hive, because some of them would hatch before your Italians, and would immediately kill the latter when they hatch. Queen cells are easily recognized by their extra size and thumb-like protrusion from the regular comb surface. Having removed or killed all the native queens and the ruling queen of the swarm, insert your foreign brood and the worker bees will immediately feed the new brood specially-prepared stimulating food, which will develop a number of the larvae into queens. The young which are to become queens may be detected after two or three days by the milky color of the food which is given them; later on, by the expansion of their cells. If you want to save all of the queens developed in that brood, it will be necessary to cut out the cells before they hatch, and insert them into other swarms whose queens and queen cells have been removed, or keep them in cages whose entrances are too small for other queens, but large enough for worker bees to feed the queen larvae. These imported, newly-hatched, purebred queens would very likely mate with your old stock of drones, and you would get mixed brood, so it may pay better

to buy impregnated queens from swarms of the variety you want.

COAST VS. VALLEY SEED OF RED OATS.

(Continued from first page.)

same variety originating in the interior of the State. This is true whether the planting is done in the fall or in the spring.

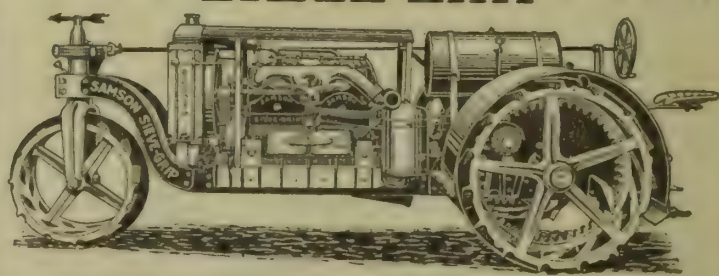
3. For oat grain production in the interior of California, valley seed is likely to yield more grain than the coast seed when planting is done after January 25th. But the coast seed is likely to produce more grain than the valley seed when earlier seeding is practiced.

In short, coast seed is preferable to valley seed for hay production in the interior under all conditions. But for grain production the preference will depend upon the locality, the planting date, and the season.

NATIONAL GRANGE SESSION.

The fiftieth annual meeting of the National Grange was held recently in Washington, D. C. In his address to the body, National Master Oliver Wilson of Illinois said, among other things: "The national grange has proved itself suited for every condition and section, capable of assisting every type of farmer, not only in his labors in the field, but in the home, in the school and in national life." He declared that too much credit could not be given to the founders and to the loyal co-workers and supporters for their monumental work done at a time when antagonism, scorn and ridicule were being heaped upon them from all other interests. He declared the grange is in a flourishing and healthy condition in all sections of the grange territory. He stated that during the past year 457 granges had been organized or re-organized. These are located in 29 states.

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There seems to be an ever-increasing number of good reasons why the dairy farmer of California should own a silo and grow silage crops, but few of these are more convincing than the one based on the experience of J. L. Jamison of Tulare county.

With him the silo has not only made an improvement in the ration but it has also been the means of raising more on an acre of land than was possible before.

Mr. Jamison grows two crops on his corn land each year, planting part of a 20-acre field to barley and part to oats in January. He does not plant earlier because it would lodge too badly later in the spring.

But he doesn't plant oats and barley for hay as is the general practice. Instead he allows the grain to ripen and then does a quick job of threshing in order that no time may be lost in getting the land plowed and planted to corn. The past sea-

son a 20-sack crop of both oats and barley was threshed on the land.

As soon as the threshing is finished the land is irrigated, then plowed and planted, this work having all been completed within a week after the grain was threshed this season.

The 20 acres would grow more than is required to fill the 100-ton silo, so five acres are planted to Egyptian corn which usually yields 10 sacks to the acre. The corn at siloing time produces on the average about 15 tons per acre, any surplus over the amount required to fill the silo being fed green to the cows or in some instances allowed to ripen for grain.

The land on which the corn has been planted is old alfalfa land, the silo and grain crop making almost ideal rotation crops where the alfalfa has become infested with Bermuda grass.

Wheat Variety Experiments.

[Written for Pacific Rural Press.]

Twenty-three varieties of wheat from the Australian exhibit at the Panama-Pacific Exposition were secured by the Sperry Flour Co. of Stockton, and planted Feb. 22 in plots of four acres and less after tests had been made of the milling and baking qualities of each variety, also laboratory tests of their gluten content. The year's crop has been tested, as was the seed, the tests corresponding very well.

The average gluten content of wheat in the surrounding territory runs from 19 to 21 per cent wet gluten. Tests on the Australian wheat raised on the experimental farm run from 25 to 32 per cent.

One variety yielded eight bags to the acre and tested 27.5 per cent wet gluten and baked a fancy loaf. In growing, it has somewhat the appearance of Bluestem, but does not grow as tall. Although spring sown, each kernel threw out four to six stalks with well-filled heads. The wheat when re-cleaned weighed 62 pounds to the bushel.

Another variety, grown on a half-acre plot, had the appearance of Sonora wheat, but reached a height of only 2½ feet. Many of the kernels threw out three to five stalks, which were well headed. This wheat tested 27.7 per cent wet gluten, and also baked a fancy loaf.

Some varieties made very rank growth and would probably turn out light if sown on summer fallow. Other varieties did not stool, and the straw was so light that a good proportion broke off. Other varieties shelled out badly. It would appear from last season's experiments that it takes a seed high in gluten to reproduce a high-gluten wheat, although these characteristics may change. No data on rust resistance were obtained, though this information is coming to the company from Australia.

Six of the 23 varieties will be planted next season, on the ranch of Mrs. W. T. Hewitt, which has been leased for the purpose. Thirty acres will be used for this. Another 30 will be planted to the Oregon bart variety, which grows well in the

north. White Australian grade will occupy another 30.

The soil on this ranch is of three kinds—sedimentary adobe, black adobe, and red clay containing gravel.

Whether these Australian varieties are better than some of the California wheats can only be determined by further experiments.

DRY FARMING.

To the Editor: I have some fine land in Lassen county without water. I would like information about dry farming.—H. A. D., Oakland.

Dry farming is mostly a matter of selecting winter-growing crops, or drouth-resistant summer crops, which can be cultivated frequently through the summer to keep a dust mulch on the surface, which will prevent evaporation of the winter's moisture.

Dry-farmed land should be disked before plowing to avoid turning under clods which tend to dry out the land quickly. Except when raising winter crops, leave it rough over winter to catch rain, but get it worked down before the clods dry hard.

Where the rainfall is less than ten inches, summer-fallowing is practiced. This is simply clean cultivation through alternate summers to save the moisture, so that almost two years' rainfall is available for one crop.

DECEMBER SCHEDULE GLENN COUNTY FARM BUREAU.

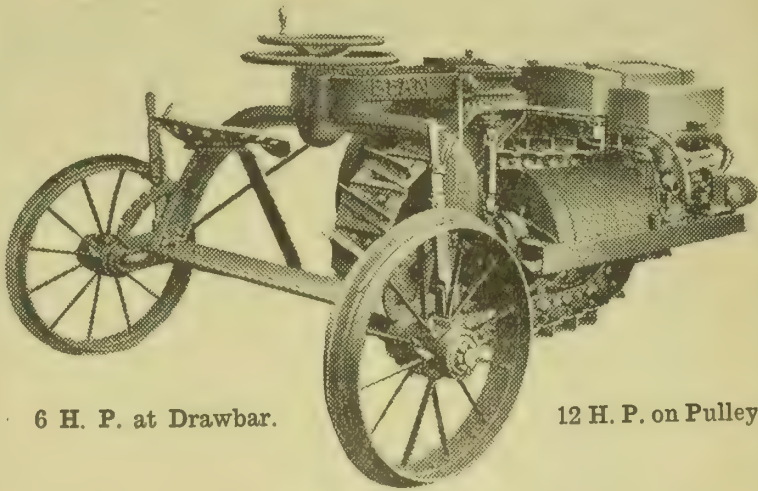
Dec. 14 and 15—Jacinto Farm Center, night meeting Tuesday, December 15.

Dec. 18 and 19—Orland Farm Center, night meeting Tuesday, December 19.

Dec. 21 and 22—Plaza Farm Center, night meeting Friday, December 22.

A suggestion comes from the State Leader asking for a conference of Farm Bureau Directors in February. This matter will come before the directors at the coming meeting.

Bean Track Pull Tractor



6 H. P. at Drawbar.

12 H. P. on Pulley

DOES THE WORK OF SIX HORSES ON THE EXPENSE OF TWO

A giant in strength, this little 2650-lb. tractor walks away with a six-horse load—Eats only when working.—Costs nothing when idle—Runs stationary machinery when not working in the field—Requires 10 to 14 gallons of distillate per day, which, with the lubrication upkeep during the days that it works, cost less than keeping a team.

IT PULLS ITSELF OVER THE GROUND.

This Tractor pulls the load like a horse, instead of pushing it, and it steers with the track that pulls. When you hit soft spots in plowing it doesn't dig itself in so you have to use horses to pull it out. You simply turn the whole front end to right or left as you would a team. Hard to turn? Well, it's almost as easy as turning a team. Fact is, this Tractor is more like a team than anything that actually isn't a team that you ever saw.

READ THESE TEN FEATURES.

1. BEAN TRACKPULL TRACTOR pulls instead of pushes itself over the ground.
2. Can be "gee-ed" and "hawed" out of holes and soft places like a team.
3. Has a full power pull on turns as well as straight-aways.
4. Turns clear around in a ten-foot circle.
5. Plows or harrows as close up in the corners of fields as a team.
6. Plows as close to vines and trees as a team can.
7. Makes little difference how far off center you hitch.
8. Goes under branches of trees that no horse can get under.
9. Light weight and long track surface on the ground.
10. Little power required to pull tractor—power all goes to pull.

IT'S NOVEL CONSTRUCTION MAKES IT

An Ideal Vineyard Tractor

It finishes plowing between a row of vines in two rounds and finishes cultivating in one. It is so narrow it does not injure the vines.

It is so light it absolutely doesn't pack the lightest soil. It pulls almost as hard in LOOSE GROUND as on TOUGH SOIL.

There is a big demand for BEAN TRACKPULL TRACTORS right now. Our factory is running to the limit of production, and reservations must be made well in advance of date of delivery desired. If you want to be sure of a Bean TrackPull, and we believe it is the tractor you want, send in the coupon today.

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Date.....

Without obligation on my part to buy, please reserve a BEAN TRACKPULL TRACTOR for me until two weeks from date. Send me prices and terms and the big illustrated folder, which tells the complete story. Where can I see the tractor demonstrated?

Name

Address

Mechanical Power on the Farm.

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of your experiences and troubles.

DISK OR PLOW FOR ORCHARD CULTIVATION.

To the Editor: Some ten or fifteen years ago there was much discussion as to whether the disk had superseded the plow in cultivating orchards. What is used at present?—J. P. D., Placerville.

The disk has not superseded the plow in cultivating the orchards of California, for there is only an occasional orchard which is not plowed at least once a year—in the spring. Many of them are cross-plowed two or three weeks after the first plowing. The fact that plowing cuts the roots of trees does not appear to us to be so serious as the proponents of disk cultivation believe. In the ordinary summer-cultivated orchards, surface soil dries out anyway, and all feeders in the dry soil will dry out more or less themselves, doing nothing for the benefit of the trees, but calling on the tree for a supply of moisture to keep themselves alive. The plow pruning in winter or spring would naturally stimulate roots as top pruning does the limbs. Since growing root-hairs collect the food and water for the tree, the more of them the better, but annual root pruning would seem to be enough.

For cultivation after the first plowing, a disk seems the logical instrument to use. It prevents roots from growing very much into the dry soil on top, but does not tear out roots all through the cultivating season, in the moist dirt underneath. It also should not leave the soil in ridges for the heat and wind to dry it out still more by the exposure of that much extra soil surface.

Leaving the soil rough and in ridges through the winter rains serves the purpose of catching water and saving it, and also prevents erosion to a certain extent. But that is another question.

HARROWING FOR GRAIN.

[Written for Pacific Rural Press.]

A harrow 80 feet wide hooked to G. W. Pierce's 70 h.p. tractor works over 140 acres per day on his grain ranch in Yolo county. It does 50 per cent better work than the same kind of a harrow pulled by horses or mules, according to Mr. Pierce, because a horse or mule is always picking his steps among the clods while a tractor goes steadily ahead at greater speed. The hesitating slow jerking when horses pull the drag fails to break up the soil as well as the steady faster gait of the machine.

The system of plowing, harrowing, and seeding in one operation with a tractor used to be in general operation in the San Joaquin Valley, but has been discarded for two reasons, says Mr. Pierce: (1) There is too much likelihood of something going wrong in such a series of operations all at one time, and considerable unplanted area might occur. "It is too complicated, especially where there are many turns," says he. "And you don't get the grain."

(2) Plowing times not the time to seed. The ground is cold and

loose. Seeding at that time loses much of the benefit of the plowing. The soil ought to aerate and settle before seeding. Weed seeds ought to have a chance to sprout. A rain should come between plowing and seeding for these reasons.

Mr. Pierce likes all of the winter plowing done soon after the first rains start vegetation, to kill the weeds. Then after a rain he likes to use a springtooth harrow because it loosens the soil so well. When a springtooth catches a weed root, it tears it out with a jerk and knocks the dirt off so it will die. A disk harrow just leaves weed roots in the ground, but is very desirable for cloddy ground. Some sort of clod crushing is necessary in order to get the most even stand.

TRUCK BODY ON AUTO A BUSINESS NECESSITY.

[Written for Pacific Rural Press.]

A small automobile, fitted with a box body, enables T. J. Meader of Sacramento county to sell fruit, etc., on the free market in Sacramento for himself and others, though the trip would be too long to make with horses. The truck carries about 700 pounds besides "us." "It is not large enough," says Mr. Meader, "but if it were much larger we couldn't afford to run to Sacramento with our fruit. We couldn't use it for our fishing trips, either; and that is about all the recreation I have. We just put another seat in the box, put up curtains and carry a mattress, so our camp is ready made."

The round trip to Sacramento with a load requires about 2 gallons of gas whether they take the 19-mile good road or the 14-mile short route.

Upkeep since June 20 when it was "bought for business" has been \$7.50 charge for replacing two defective tires, \$4.50 for new brake bands which were worn out at first "like all other beginners," and \$2 for small repairs due mostly to the belt having slipped off the radiator fan.

Ordinary tire patching is done with a small repair kit; nothing is ignored when it goes wrong, but is fixed at once, and care is used in driving over bumps.

GET ACQUAINTED WITH YOUR NEXT SEASON'S TRACTOR.

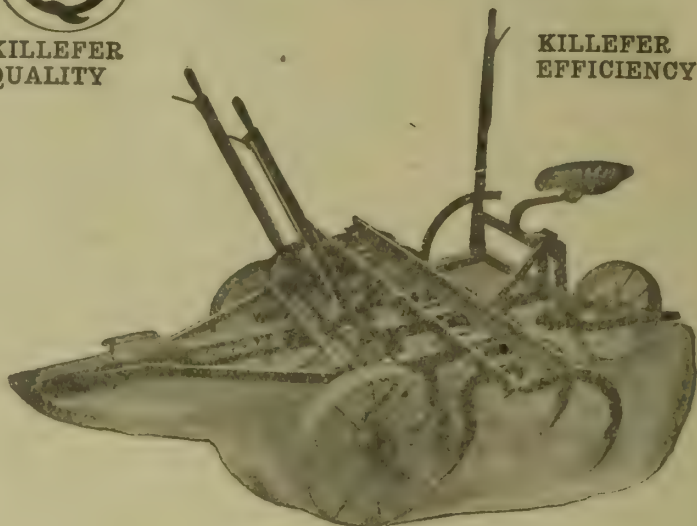
The suggestion comes to us that farmers contemplating buying a tractor for next season's plowing and other work should get the iron "critter" early enough to have an opportunity to get acquainted with his likes and dislikes, eccentricities and eccentricities, before the heavy pull ahead of the plow comes. Buying a tractor and putting it immediately to plowing without previous experience is courting failure, the record shows. The advice sounds sensible. A farm tractor is a piece of machinery that will keep on running right if handled right, but that won't run smoothly if handled foolishly. No farmer new to automo-



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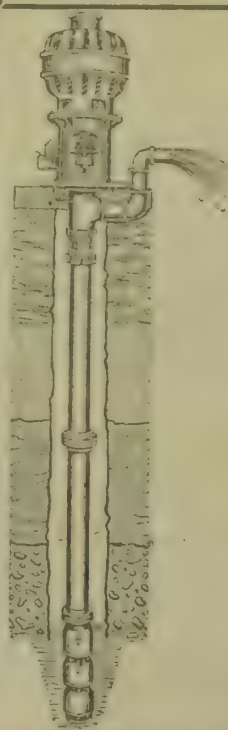


Our MONARCH CULTIVATOR was made to use on bean and beet land in preparing the seed bed and the general use of it for years past by the bean and beet growers proves it to be well adapted for this kind of work. It is the strongest horse chisel made and is able to do extremely deep work without damage to the tool. See your dealer and get your order in early as prices on all of these heavy tools must advance this coming season. If your dealer does not carry them, write to us for prices.

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A complete line of irrigating pumps of all descriptions, horizontal and vertical for belt drive or direct connection to electric motor.

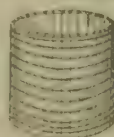
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Latest improved machinery. Doors, Windows, Frames, Mouldings.

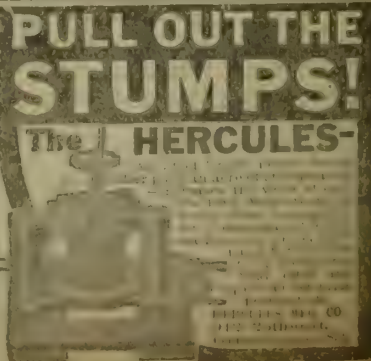
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☐ Cross
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Centers of Pulleys _____

Revolutions per Min. _____
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biles would think of buying one and starting in it the same day to visit his wife's relatives in New England. He would run it around the square and to town a few times first. Same with the tractor. Plowing a 40- or a 60-acre field is a long ride, best made on a tractor previously handled to some extent by its driver.

DYING ORANGE TREES REJUVENATED WITH DYNAMITE.

[Written for Pacific Rural Press.]

In the winter of two years ago, a wide streak through G. L. Camden's orange orchard in the Fair Oaks district of Sacramento county was just about dead. Horticultural Inspector Elmore Chase corroborates Mr. Camden's description of the trees as they were then. Very many branches were dead, and the leaves that remained were so yellow that they were almost orange colored. The orchard had been neglected for five years.

Mr. Camden took the place in May, 1913, shortly after the great freeze. He and Mr. Chase discussed matters, but their combined ideas did not seem to help that streak, which included perhaps 50 to 75 trees out of the block of 294 navels and some St. Michaels.

The crop of 1915-16 on the 294 trees was 17 tons. It is more than double that amount this year, as estimated when about half picked. The trees on the streak bore well, over half as much per tree this season as those on the good ground. They are in first-class shape for next year's crop, having abundant dark green foliage and plenty of fruit wood. The soil in the whole orchard is rather light, with a hard compact subsoil in the bad streak.

Though the case seemed hopeless in Feb., 1915, it seemed wrong to tear out the trees and wait for young ones to come into bearing. So at the risk of losing a year, Mr. Camden decided to dynamite the subsoil.

With a six-foot auger, he bored from a point about four feet from each sick tree, to a point about 4 feet directly under the tree. No tap roots were encountered at that depth. Where the subsoil was gravelly, a half-stick of 25 per cent dynamite was exploded at the bottom of the bore; where it was heavier, $\frac{3}{4}$ of a stick was used.

Then to secure better drainage, a shot of 2 $\frac{1}{2}$ sticks was placed in the center between each four trees and exploded 6 feet deep to tear up the hard subsoil.

To relieve the weakened trees and make room for new growth, all dead wood and the weakest of the rest was taken out in a heavy pruning.

Fertilizer.—In 1914-15 twenty pounds of commercial fertilizer per tree and two tons ground limestone per acre had been applied. That winter, a vetch cover crop was grown. In June 1915, 2 $\frac{3}{4}$ pounds nitrate of soda were broadcasted about each tree, outside of the "drip," so that it would come in contact with the feeding roots when it had been cultivated and irrigated in. A melilotus cover crop was planted last fall. It grew three feet high, and a chain was needed to plow it under.

Irrigation.—In this district, only two irrigations are usual. Mr. Camden's turn came the first of June and

the first of August, but he noticed this season that the heavy draft of the fruit required more, which was given early in September.

Early in his irrigation experience, on this orchard, Mr. Camden did what so few undertake. He found how deep a given amount of irrigation would wet the ground in several parts. Soil auger borings showed moisture usually nearly four feet deep; but in places, five feet deep, showing that the irrigation water was available to the trees.

HEAVIER LOADING ADVISED.

Heavier loading of equipment to relieve the freight car shortage is urged as one of the effective methods of relief by the Pacific Fruit Express Co. For example, it is claimed that potatoes could be handled in one-fifth fewer refrigerator cars than are now used, and that 7 boxes of oranges could be accommodated to the six that are now loaded.

*A student at the University Short Course for Tractor Drivers asked an instructor why a certain machine "strained the smoke." He answered that sparks may fly from the exhaust if the cylinder is allowed to become corroded, and that would be dangerous in dry grain fields.

No grease is used in the tracks or wheel gears of several kinds of tractors because the manufacturers claim it would only catch dirt and grind the bearings.

The conservation of human energy is best attained by the substitution of mechanical power.



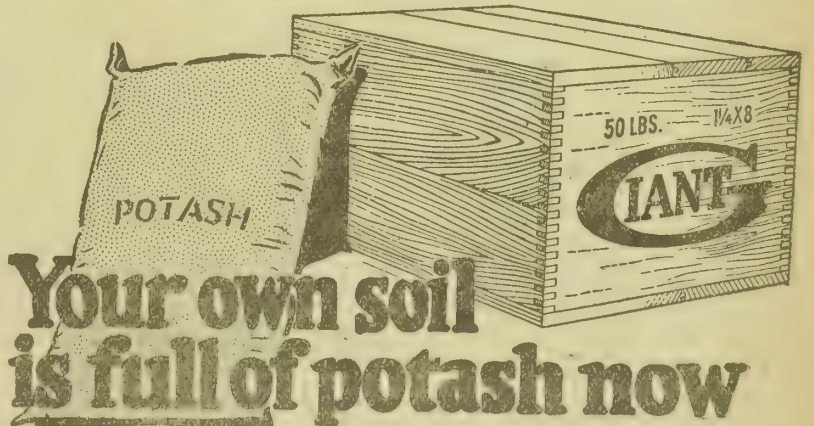
American Turbine Pumps

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Will Outwear
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Low Upkeep.
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There is no question about it. Chemical analyses prove it. Experiments with crops prove it. There is enough potash in your ground now to grow all the crops that you will ever plant. The problem is how to free it, how to make it available for the roots. Tillage will free the potash, completed by lime, decaying roots and green manure. Also will free large quantities of natural phosphorus.

The best way to release plant food is to blast the soil with

GIANT FARM POWDERS

STUMPING — AGRICULTURAL

Blasting is tillage, tillage of the most thorough and intensive kind known today, more effective than can be secured in any other way. Blasting followed by proper farm practices will release the potash. It starts in motion the processes that will free the potash and phosphorus in your soil and increase the nitrogen supply.

To get the ideal results in subsoil blasting, use Eureka Stumping Powder—one of the Giant Farm Powders. It has a disruptive, heaving, action—exactly what is needed for breaking up the subsoil or hardpan.

Get the Giant Book on Subsoil Blasting

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This book—prepared especially for Pacific Coast farmers—tells how and why blasting provides drainage, gives increased moisture storage capacity, and FREES PLANT FOODS. We will send you a copy on request. Other valuable books—on Stump Blasting, Boulder Blasting, Tree Planting and Ditch Blasting—are also sent free. Mark in the coupon the books that you prefer. Mail it today.

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General Agricultural Review.

FIELD CROPS.

Large tracts of land in Stanislaus county will this year be planted to sugar beets for the first time.

Porterville begins to figure in the State markets for the first time this year as a commercial producer of beans.

The American Beet Sugar Company at Oxnard has completed a season lasting 128 days, the longest in recent years.

San Joaquin lands have been found unprofitable for rice, according to reports from sections where experimental fields were planted this year.

The total white potato shipments from California for the season up to November 28, as reported by railroads to the U. S. Dept. of Agriculture, amounted to 3917 carloads.

Samples of sugar beets raised in different sections of Klamath county, tested by the American Beet Sugar Company at San Francisco, average 16.5 per cent sugar.

Tulare county raised its banner Egyptian corn crop this year. Forty thousand sacks await shipment. It has been sold to San Francisco brokers at \$40 per ton.

Of the 926,000 acres in San Joaquin county, 224,000 acres, or nearly one-fourth of the entire acreage of the county, were devoted to cereals. Barley predominated.

Two thousand sacks of beans had been shipped to San Francisco from Porterville up to Dec. 1, this being the first time this section has appeared as a successful producer of beans.

Word from Fallon says the Nevada-Utah Sugar Company has announced that all 1917 beet contracts, which were written at \$6 a ton, will be rewritten at \$7 a ton at once.

It is announced from Ventura that a new high price for lima beans has been reached there this season. George Todd has announced the sale of 1000 sacks to J. K. Armsby Company at 7c.

Experiments with seven varieties of rice were made by the Farm Adviser in the Main Prairie district southeast of Dixon, in Solano county, and though it was not a financial success, some rice matured.

The rice men at Paulsell are cleaning up their crop, and the warehouse erected by the Oakdale Milling Co. is about full. So far rice prices have not been very good, 1½ cents being the best offer made.

Joe Robinson of Van Nuys says he finds pumpkins a profitable crop. He reports twenty to thirty tons to the acre without irrigation and they sell at \$3.50 to \$4.00 per ton in the field, which means a net profit of \$100 per acre.

The Santa Ana Sugar Company closed a successful season. It sliced 112,000 tons of beets during its four months' run. Its beets this year tested between 18 and 19 per cent. Growers received about \$7 per ton, receiving a total of \$775,000.

It is announced from Oxnard that the American Beet Sugar factory there has manufactured this season 1,150,000 sacks of sugar, which is 250,000 sacks more than any previous season. The increase is due, it is said, to the unusually high per cent of sugar in the beets this year.

Many Belgian sugar beet growers are moving from Los Alamitos to Kern county to locate on lands leased from Miller & Lux, near Connor's station. Carloads of stock, household goods and farming implements are arriving in Bakersfield for the colonists. The Belgians will go direct to their lands and begin the work of making new homes.

Sugar beets are about as profitable and as sure a crop as farmers in the

Oakdale irrigation district can grow, according to A. E. Lichau, who harvested 759 tons of beets from 39 acres of land, receiving for them better than \$100 an acre. He estimates that his net profit was \$80 per acre. "It is no lazy man's job," he says.

The Ventura Lima Bean Growers' Association distributed checks amounting to \$25,000, representing the proceeds of the November pool. E. Powers, the big grain, melon and produce man of Manteca, has rented the entire Robinson tract of 2,600 acres two miles southeast of town which will be devoted to sugar beet culture.

California rice growers will make an effort to have the present tariff revised upward, according to J. H. Stephens, president of the Pacific Rice Growers' Association. The rice men contend that under the present tariff they are at the mercy of the Japanese, Chinese and India product, and could not compete with Oriental growers were it not for the war.

The Southern California Beet Growers' Association has just been organized. The incorporators are C. J. Forbes, Alex. Jeffries, L. W. Richardson, R. B. Smith, and E. S. Ingleset, all of Van Nuys. The purpose of the Association is to organize all the sugar beet growers of Southern California into a Co-operative Association with a view to mutual help.

Sugar-beet seed was grown commercially in this country during the past year in several States from Michigan to California. The crop of seed harvested in 1915 was so satisfactory—according to the report of the Chief of the Bureau of Plant Industry, of the U. S. Dept. of Agriculture—in each of the areas tested that a largely increased acreage was planted this year. Approximately 5,000 acres are in beet seed in this country this year, while we require the product of at least 16,000 acres for a normal planting, not considering the natural expansion of the beet-sugar industry.

Lima bean men around Oxnard are in trouble. A number of members of the California Lima Bean Growers' Association early in the season agreed to deliver to the Association their crop at a stipulated price, but after the market advanced so much these growers refused to live up to their contracts. They are now being sued by the association. When the association, early in the season, made contracts, lima beans were selling at 5c, but since the fall rains they have sold as high as 7c and growers instead of filling their contracts have sold on the open market, hence they are now facing a lawsuit.

CITRUS, NUTS, SEMI-TROPICAL.

The College Heights Orange Association is putting up a new \$20,000 packing house at Claremont.

A new orange packing house at Navelencia has been established at a cost of \$12,000.

Lindsay has fourteen big packing houses, all of which are running overtime and Sundays. The crop is the heaviest for many years.

This has been a good season for walnuts in Sonoma county. There has been an unusual absence of blight, and the yield has been heavy.

A Citrus Institute will be a feature of the Seventh National Orange Show to be held at San Bernardino February 20 to 28.

The value in the East of advertising California oranges as not sweated or artificially colored is becoming more pronounced every day.

The net value of the orange crop to the growers of Butte county will be \$500,000, according to estimates made by Fred W. Mason, manager

for the Stewart Fruit Company.

B. B. Meek of the Olive Products Company states that the estimate of 30 per cent loss made a few days after the cold snap was approximately correct.

In attempts to stamp out the citrus canker in Florida drastic methods are employed. Crude oil is poured over the diseased tree and it is set afire and burned out root and branch.

W. P. Daily of Oxnard made his first shipment of lemons last week from his young orchard in Pleasant Valley. He has thirty to forty acres of two- and three-year-old trees that have just begun to bear.

It is said that Edward Balou of Lindsay has just bought of J. F. Sullemberger a ten-acre orange ranch just south of town for \$9,000. The orchard is less than five years old and is just coming into bearing.

The Stewart Fruit Company of Oroville states that after deducting all charges, including the commission for handling oranges shipped, the price per box approximated the \$3 mark.

Besides the yield of 621,000 tons of first-class walnuts in Goleta valley there have been harvested this year 120,000 tons of perforated nuts and culls. These are cracked and a crew of 75 girls pick the meat from the cracked shells.

The car shortage at Porterville still remains somewhat serious and deliveries are being made slowly. The present prospect is that not more than 50 per cent of the fruit will be out in time for the Christmas market.


It now appears that both citrus fruits and olives were damaged materially in some sections of California by early frosts and cold a few weeks back. Southern California seems to have suffered little. Competent authorities place the Tulare county damage at as high as 25 per cent.

Budded Avocado Trees

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and animal manure make a splendid
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TROUBLE-LESS VALVES —these are simply bell metal balls, revolving on reversible seats. Can't stick, corrode, or rust. When the seat wears, turn it over.

NON-WEARING CYLINDERS —which are porcelain-lined and wear for years and years. Not affected by acids and chemicals.

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Hand Pump ☐ Spray Materials ☐

Name

Address

BEAN SPRAY PUMP COMPANY
211 W. Julian Street, SAN JOSE, CALIF.

The nursery people are looking forward to a good planting season. Wallace Nurseries, who specialize in citrus and olive trees in Southern California, seem very hopeful as to the outcome of the coming season. It was lemons from trees that were sold by this nursery that were awarded first prize at the Kern County Fair.

Walter B. Hadley, horticultural commissioner for Redlands, and A. S. Taylor, the commissioner for the Bryn Mawr district, have been making tests of the oranges from various groves in the district to see whether they would pass the 8-to-1 test. The result on eight tests of the Redlands fruit averaged 7.2 to 1, 8.3 to 1, 8.6 to 1, 9.2 to 1, 11.3 to 1, 10.7 to 1, 9.6 to 1, and 9.9 to 1.

General Manager G. Harold Powell of the California Fruit Growers' Exchange denies that the Exchange has been charging San Francisco commission men a dollar a box more for their oranges than is charged in the East, as has been asserted in some quarters. San Francisco has had the same prices that have been quoted f. o. b. to every other market in the country.

Announcement comes from Oroville of the sale of the Ralph Butler olive grove at Table Mountain to Professor A. H. Allen, manager of the University Press of the University of California. The property consists of 20 acres planted to olives and will be operated as a part of, and in accordance with the general plan of the Berkeley Olive Association. Under this plan there is individual ownership, but a community operation of properties.

Experiments conducted on the property of P. J. S. Montgomery, owner of a large orange grove in El Mirador district, this spring and summer establish the value of the announcement from the University of California that the "june drop" of oranges is caused by a fungus. Applications of fungicides made on his trees resulted in saving prac-

tically all of his fruit, and in some cases trees bore more than double the fruit in adjoining rows to which no treatment was given. It is also declared the same fungus causes the split oranges.

DECIDUOUS FRUITS.

The California peach crop this year will bring about \$3,000,000, which is nearly \$1,200,000 greater than that of 1915.

Canning peach growers of Tulare county favor the proposal of the California Peach Growers' Association to handle canning peaches in 1917.

The total apple shipments from California for the season up to November 28, as reported by railroads to the U. S. Dept. of Agriculture, amounted to 1,274 cars.

Eleven thousand Bartlett pear trees will be interplanted in the orange grove of the Mills Orchard Company at Hamilton City. The company has found interplanting very profitable and is working both its orange and lemon groves over in that manner.

About two miles out of Vacaville, on the B. F. McLaughlin ranch, there is an apricot tree measuring 2 feet 8 inches in diameter at the trunk and 57 feet from limb to limb at the top. Mr. McLaughlin claims to have removed twenty-seven 60-pound lug boxes of fruit from this tree.

Prune Week, which began last Monday and ends today, was enthusiastically observed wherever the prune is grown. Thousands of boxes of prunes were distributed from San Jose and other important points, and thus wide publicity and popularity were given to this imperial fruit. Besides which many attractive and artistic displays were made.

Those in charge of the organization of the Prune and Apricot Association report the work progressing rapidly and that the prospects now are that enough stock will be subscribed within a month to allow

the election of trustees. During the past week good meetings were held at Santa Rosa, Healdsburg and Geyersville, which were addressed by Messrs. Weinstock, Madison, Merrill and others. Promises and signatures were secured which indicate that Sonoma county growers will give the new organization fine support.

GRAPES.

The State Viticultural Commission has decided to expend \$2000 in making a detailed study of the new grape disease that threatens the grape industry of Fresno and Tulare counties. The disease is conjectured to be the result of either wrong soil or cultural conditions.

According to a report of the State Viticultural Commission, the combined raisin, wine and table grapes industries of California represent an investment of \$150,000,000. There are 360,000 acres devoted to vineyards, which annually produce \$30,000,000. About 15,000 owners are represented. There are 170,000 acres devoted to the growing of wine grapes, 140,000 acres to raisin grapes and 50,000 acres to table grapes.

James Madison, manager of the California Associated Raisin Company, in comparing the money received by the growers for their raisins before and after the formation of the Associated Company, gives these figures: Average price paid during 1909-10-11-12—Muscats, \$56.26; Thompsons, \$69.40; Sultanas, \$55.60; Malagas, \$43.80; Feherzagos, \$38.80. Price paid by the California Associated Raisin Company in 1915—Muscats, \$72.72; Thompsons, \$99.67; Sultanas, \$88.81; Malagas, \$60.00; Feherzagos, \$60.00.

MISCELLANEOUS.

Seventeen million dollars is the estimate of the crop returns of San Joaquin county for the year 1916.

The Winters Canning Company of Suisun, which closed the longest

running season in its history, put up 77,412 cases of fruit and tomatoes, there being about 15,000 cases of the latter.

A few hay and grain farmers waiting shipment, and a few raisin growers who still have raisins out in the vicinity of Hanford were hurt by the last heavy rains.

The Killefer Mfg. Co., Los Angeles, report recent sales of five Standard Subsoil Plows to the Spreckels Sugar Co., Modesto, Cal., Japan, and Honolulu. The plow going to Spreckels Co. was sold by wire.

The Lodi Sentinel tells us that the average farmer in its district received splendid prices for everything he sold, "causing him to wear a golden smile, improve his property, and buy automobiles. He has the money; he can afford it and he is right in preparing to enjoy a little of this world's sunshine."

The California State Hop Growers' Association met at Sacramento recently to consider the matter of financing the growers. They decided that in future the finances would be raised through the Association instead of individually. The Association, through its directors, will borrow from the banks all money needed for the producing of hops, and the grower receiving the money will give a chattel mortgage on his crop to the Association, who in turn will give it to the bank as security for such loan.

"Less loss of timber every year from forest fires" is the watchword of the timber owners of California. Successful results were attained this year by the timber owners who have co-operated among themselves and with the Federal Forest Service. Natural conditions in the redwood forests of California, such as a moist, foggy climate during the summer, ferns and other evergreen undergrowth, thick bark and non-resinous wood, favor a low loss from forest fires. The loss of privately owned timber this year was less than \$600.

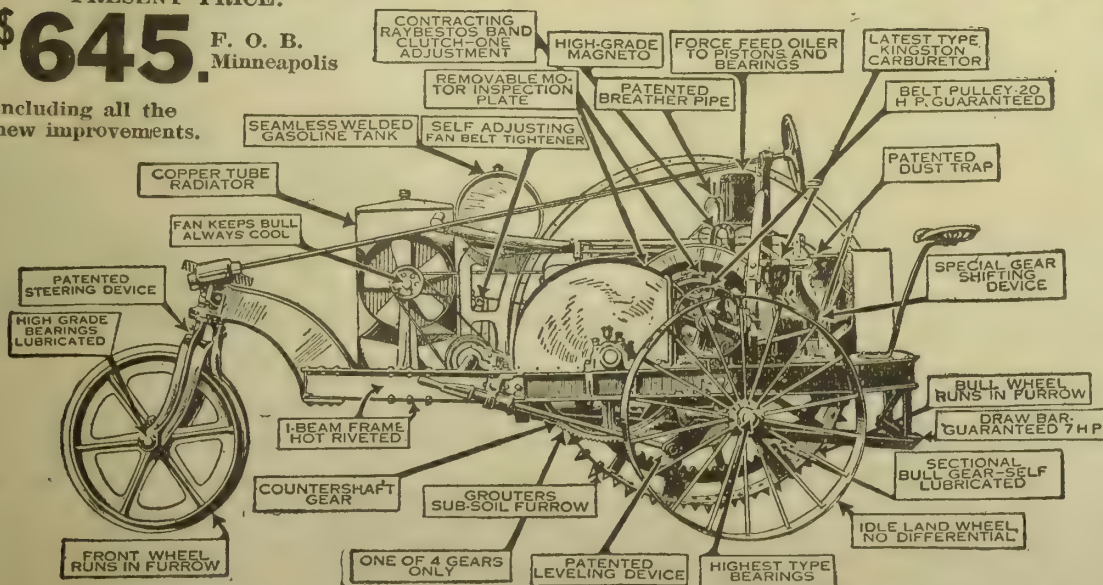
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Livestock Facts and Fancies---XI.

[By the Editor.]

We attended the annual meeting of the California Cattlemen's Protective Association recently held in this city (as noted in last week's Pacific Rural Press) because we wished to renew acquaintance with a representative bunch of men who are endeavoring to advance this important branch of our livestock industry and to know what they are trying to do for the State and for themselves. We found them wide-awake, keenly alive to needs of their branch of production and kindly disposed toward the pure-bred interest, the dairy interest, the farm-production of meat, etc. Some of them seemed to be amused at the memory that they had given over the old livestock association to the dairy interest and it was run into a cream separator, from which nothing came out—neither cream nor skim milk in sufficient amount to notice. Therefore they were more than satisfied now to trot along by themselves and do the things which they believed the range interest of the State needed.

The meeting was particularly picturesque and interesting to an on-looker because it came together like a bunch of steers at a rodeo. It apparently had at the beginning no common purpose for lack of preliminary counsels and because no work was systematically laid out for it. This may have been owing to the fact that the Warwick of the range interest, H. A. Jastro, was ill at his home in Kern county and could not flag the course of the meeting. However, O. B. Fuller of Los Angeles got the bunch under control and did more things with it in half an hour than was ever done with a constitutional assembly before in the world. He ripped open the constitution, took out the appendix which limited the powers of the directors, held a meeting of the directors with new powers and passed an order for an assessment. Then he roped the individual members, slit the legs of each of them for a gambrel, pulled him up in the face of the assembly, performed the capital operation on his pocket and laid out nearly \$3,000 on the secretary's desk. He also swore each of them to go out and rope every range cattle owner in the State and operate on him in the same way. Thus the society filled its treasury and is ready to do the work which the range interest of the State requires.

What is this work to be? Everybody present saw clearly enough that its first work is to reorganize itself and get down to a better business basis in every way. A capa-

ble committee on reorganization was appointed. It was evident that a well-planned, systematic organization is required. Mr. Fuller's hold-up was recognized as defensible only to meet an emergency. Nearly every one saw that the best course for the general association of range men is to build it on the basis of local associations which are already doing good work and commanding local support. If more of these are organized and the general association affiliates with them in a central body with the wisdom and power of all combined, a reasonable, representative and forceful organization can be secured. We hope the reorganization committee will get busy at once, and as soon as they finish their scheme call another general convention for its adoption. It might be a good idea to call it in Sacramento right after the holidays. It would be a good way to impress upon the legislature the importance of a number of things that need to be done.

Another thing we wish to talk about briefly this week is the meeting for organization of the California Shorthorn Breeders which will be held at the Palace Hotel in this city at 2 p. m. on Monday, Dec. 11. Enough prominent breeders have bunched themselves to make sure that the proposition has good bottom and backing and they invite everyone interested in purebred Shorthorns, and in the use of them for stock improvement, to join them in the rally. It is not an exclusive affair. If a man now has purebreds so much the better, but if at the moment he has only a Shorthorn in his heart, we believe he will be welcomed. Californians do not hear half as much nowadays about the "lordly breed" as they should. For ourselves we can never forget what Shorthorns have done for California, as we tried to sketch it in the issues of September 16 and October 28, last. Those who do not know that or have forgotten it, may take a hint from what an Illinois farmer said the other day, recalling his experience of forty years ago: "We had a few of those old-style square Durham cattle that were good at the pail and the block. I would give a good deal for a few today." Some old Californian might say the same for this State. Of course many breeders of thirty years ago started a drive on the beef side of the Shorthorn and made the old red, white and roan cow so ashamed of herself that she would hardly show her face in the milking corral, but others have wisely striven to regain her ancestral dairy glory for her, and have much to show for the effort.

Now let all who believe in Shorthorns for beef or for milk or for both combined, get together and put the breed back in its old place in California! And while working toward this, let the new association, which will doubtless be formed, take a strong hold on the new movement for fairer marketing of livestock in this State, in which they can heartily join with all other producers of meat or milk. Remember you are invited to the meeting of next Monday, as indicated above.

DAIRY PROSPECTS GOOD FOR WINTER.

[Written for Pacific Rural Press.]

Never, perhaps, has the immediate future of the dairy industry had brighter prospects than at this time in California so far as market conditions are concerned.

Not only is butter quotably higher than at the same time last year by a margin of several cents a pound, but the prospects are that it will continue to reign higher for the rest of the winter.

It now appears that dealers in this State overlooked a bet last summer by neglecting to buy for storage in large quantities when they should have, and this is one of the factors which bodes well for winter prices. As it happened, the summer prices kept above their ideas with the result that they have been short of the storage product and it is now pre-

dicted that by the end of the year warehouses will be practically cleaned up.

This with the fact that some exporting has been done and that more will likely take place whenever our quotations get down low enough to entice foreign shippers here leads those in touch with the situation to believe that prices will continue to remain firm until the heavy spring supply at least.

Whether dairymen of the State are in the best possible position to realize the most on this state of affairs or not remains to be seen. As is customary when hay and other feeds are high, many dairymen have sold off their cows the past summer, and while there may be enough heifers coming fresh to offset this loss it is probable that we will have few if any more cows in the State the first of next year than we had at the beginning of the present one. Receipts of butter at the present time are a trifle less than at the same time last year, but this may be accounted for by the feed situation which is serious in many coast districts.

River Bend Farm of St. Helena recently sold one of its High Model service boars and a bred sow to H. W. Comstock of Yolo county. The Farm has three weanling boars from its great Defender sow by Orion's Pal, which weighed over 42 pounds at eight weeks. These youngsters will make themselves known at the 1917 State Fair at Sacramento.

"Short Measure-eh?"



A cow can not tell you when she is sick, but her milk yield is a very accurate indication of her condition. The fact is, thousands of cows are allowed to remain unprofitable or below their reasonable standard of productivity through their owner's failure to act on the hint of the milk pail. Don't pass it off by simply calling her a "backward cow"—correct the trouble and reap the extra profit.

Kow-Kure is a medicine for cows that are "off color." It is in no sense a food, but it promptly acts on the digestive organs and enables the cow to thrive on her natural food. Its great curative powers act on the genital organs where many cow ailments originate. The success of Kow-Kure is positive in the prevention and cure of Abortion, Barrenness, Retained Afterbirth, Milk Fever, Scouring, Lost Appetite, Bunches and other common ills.

You can buy Kow-Kure from feed dealers and druggists, in 50c. and \$1.00 packages.

DAIRY ASSOCIATION CO.
Lyndonville, Vt.

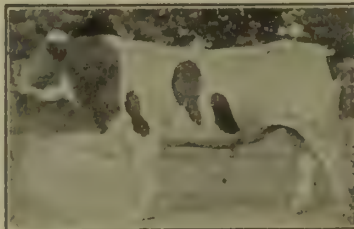
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Prince Alcartra Korndyke,
Best bred son of Tilly Alcartra.

Our supply of these young sires is always limited, but we have a few now which we are offering at very reasonable prices.

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"THE NAME GIBSON INSURES QUALITY."

At prices within reach of every Breeder and Dairyman.

When you buy a son of our herd sire, Prince Alcartra Korndyke, you get more than a Holstein bull with registration papers—you get a grandson of the world's greatest milk cow out of a high-testing A. R. O. dam. Our herd of females has been developed into one of the best in the State.

A CHEAP, CLEAN HOG TROUGH.

[Written for Pacific Rural Press.]

A cheap, sanitary watering trough has been evolved by W. D. Trewthitt of Kings county, through the use of second-hand urinals, secured where old schoolhouses were being remodeled. These are porcelain lined, and the rounding bottom makes them easily cleaned. They are fitted into a wooden frame that sets solidly on the ground. A frame work above shields the water from the hot sun and makes a slatted front that keeps the hogs from crowding one another while drinking; also keeping them from putting their feet in the troughs. This frame is put together with bolts, so that it can easily be taken apart for moving or other alterations.

Reclaiming Land and Cattle.

[Written for Pacific Rural Press.]

The reclamation of land and cattle is the primary business of Mesdames Alexander and Kellogg on 500 acres of Grizzly Island, fifteen miles from Suisun, Solano county, adjacent to the Sacramento river.

A few years ago this ranch, like thousands of acres of other land in the district, was a vast tule patch, providing nothing for humanity except ducks for a few city sportsmen. Now, due to a protecting levee, constructed with dredgers, it raises good crops of cereals, beans, sugar beets, and salt grass pasture, although the land is still too "new" to produce the maximum that is eventually expected of it.

Two classes of soil are found on these lands; sediment and peat, and until deep plowing and constant cultivation can intermix the two soils, yields can not be of the best. Also there is the matter of draining the soil of salts and alkali which tide-water has carried in for centuries.

This latter problem has been taken care of by the installation of numerous drain ditches, four to six feet deep, all emptying into a main ditch whence the seepage water is electrically pumped over the levee into the river. During the summer season this work is not required so often as in winter and spring when the river is at its height. But ditches of such size and in such numbers take up lots of good land and for that reason tile will be installed to take the place of open ditches. Besides the saving of land, it is thought that the tile will drain more of the salts than do the open ditches.

Indian corn for silage, Sudan grass, beets, and barley are the crops which have so far done best on this ranch; but experimental

plots of alfalfa indicate that this crop may be grown, thus completing the necessary chain of feed crops for the livestock, which is to be the form of product marketed.

The reclamation of cattle is equally unique as that of the land; for these two ladies have undertaken to reclaim the attention of dairymen to the dual-purpose cow, having selected the dairy Shorthorn for this purpose.

It is their belief that there is a place in California for a cow that will produce both milk and beef in liberal quantities; and toward that end they have imported from the East a select herd of females, all of which carry beef-making qualifications; and some of which have produced as much as 300 pounds of four per cent milk in seven days on official test.

As there has been more or less controversy as to the milking merits of the Shorthorn, official testing is being practiced, eight head being on test for yearly records at the time of the writer's visit.

That these milk records do not disqualify them for beef making is evidenced by the contention of Herdsman Curtiss that the chief difficulty he finds in testing is their tendency to become over-fat, as a result of the liberal feeding which test cows require. This, he believes, would be overcome to a satisfactory extent if hill pasture was available.

With buildings as with land and cattle, the owners of this ranch have taken pains to have the best, a modern concrete-floored milking stable and calf barn having been built for winter protection as well as commodious hay barn, bull barn, and silo.

Increasing Pork Gains With Ground Feed

[Written for Pacific Rural Press.]

Every livestock feeder should have a feed cutter and grinder in order to get the most economical gains from a given amount of feed.

Such is the belief of W. D. Trehitt of Kings county, who makes it a practice to run almost everything through his grinder that is fed to his large herd of purebred and market hogs.

About 250 head of hogs are usually kept on this ranch, all of which are purebred Poland Chinas, only the best of which are registered or sold as breeding stock.

Alfalfa pasture is provided all of the hogs during the growing season, supplemented in the winter months with mangels that have been run through the feed chopper. These furnish a succulent feed till the alfalfa pastures are again available in the spring, and when fed in connection with grain have been found very satisfactory. The mangels may be planted under Mr. Trehitt's conditions either in the spring or fall, but he has secured the best results from November and December plantings for the next winter's feeding.

During the summer months ground barley and wheat constitute the chief grains used, tankage being fed daily, both winter and summer, and charcoal, salt and sulphur every

other day. In winter the grain ration is changed to one of Indian corn raised on the ranch, its heating qualities not being considered good for the hogs in the summer. At times ground alfalfa is fed during the winter months, it having been found possible to get the stock to eat as much as one-third of this when fed with the ground grain.

Self feeders are used in feeding the young pigs and have been found economical both in the amount of labor and in feed as there is practically no waste with either. Market hogs have also been successfully run on the self-feeders.

Farrowing is done in a separate farrowing house, built especially for that purpose with capacity of a number of sows so that they may be left there with their pigs for as long as two months if necessary.

By handling his hogs in this manner Mr. Trehitt is able to market his hogs at seven to eight months of age weighing 200 to 250 and in some cases 260 pounds.

The fact that they are all purebreds undoubtedly has a great deal to do with the profits on this ranch, but Mr. Trehitt believes that the \$85 he invested in his feed cutter and grinder was the best investment he ever made.

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GEO. A. SMITH'S 8th SALE

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WEDNESDAY, DEC. 13

75 Extra Fine Nicely Marked Selected High Grade Bred Holstein Heifers, from 20 to 28 months old. Fresh and coming fresh soon. Bred to purebred Holstein bulls, sired by Registered Holstein bulls, and from heavy producing grade Holstein cows. They are the heavy milking kind and a very desirable lot. A better or more uniform lot of heifers has never been offered for sale in this State. This is your opportunity to buy some good useful, promising heifers at your own price.

These heifers are the property of the La Hacienda Ranch. For the sake of convenience they will be sold at the Geo. A. Smith Home Ranch, 2 miles south of Corcoran.

TERMS: A credit of 12 months will be given with approved security. Notes to bear 8 per cent interest. Five per cent discount for cash.

IN ADDITION TO THE ABOVE GEO. A. SMITH WILL SELL:

10 Registered Holstein Bulls, ready for service, from great milk and butter producing ancestry.

10 Registered Poland China Sows, and 10 Registered Poland China Gilts, sired by Iowa Wonder and bred to Joker, First Prize boar at the Wisconsin State Fair.

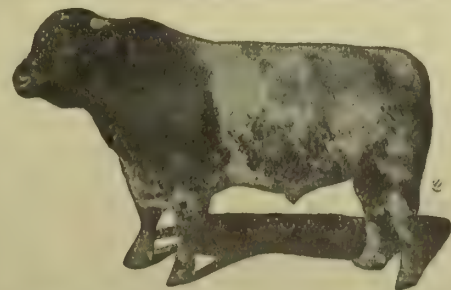
10 Registered Poland China boars ready for service.

COL. BEN A. RHOADES,

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Shorthorn Bulls for Sale, sired by such noted bulls as King Lancaster, Knights Perfection, Greenwood Knight and Greenwood King. Nearly all offsprings of the famous King Edward.

These Bulls are conceded to be the best offering ever made from the Hillcrest Stock Farm.

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Send for Sensible folder on feeding hogs

Western Meat Company

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Live Stock and Dairy Notes.

(Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.)

THE DAIRY.

Tulare is being prospected as a site for a new casein factory.

The Borden condensed milk factory at Modesto is well under way and it is thought that it will be in full operation by spring.

A large acreage of alfalfa land is being prepared on Revada Farm, owned by B. Nixon, for spring seeding. With the additional feed from this land Mr. Nixon will be able to feed his herd of imported Guernsey cattle largely from his own ranch.

The second unit of the Glenn Co. Cow Testing Association, on which the Farm Bureau has been working for the past six months, will probably start work early in the coming month. Nearly 1000 cows along the river country have signed up for the unit.

Arthur Purvine, son of the veteran breeder, T. B. Purvine, has taken charge of the purebred Jersey herd on his father's ranch in Sonoma county. At the present time he has 15 cows on semi-official test. Several daughters of his herd sire, Fairy Boy 4th, are doing exceptionally well.

The first carload of casein to be shipped from California to the East left Modesto Nov. 29, from the plant of the Milk Products Corporation of Delaware for the paper mills at Cumberland, Maine. The car will contain 45,000 pounds of sacked casein valued at \$10,000. Since beginning operations Oct. 2, three carloads of casein have been manufactured.

State Veterinarian Chas. Keane reports satisfactory progress in the tuberculin test work being conducted by his office in compliance with the new dairy law. His records for the first month's work indicates that 10 to 12 per cent of all cows tested are reactors. The percentage is larger in the bigger herds than in the smaller ones.

There is a sharp breach in San Francisco between the producers and distributors of milk, and the directors of the Associated Milk Producers are planning for direct service of their commodity to customers. The trouble is the result of the refusal of the producers to contract with the dealers for the coming year at four and an eighth cents a quart, the price paid last year. It is believed delivery of milk to San Francisco households will begin within a week.

Following table gives the names and records of the cows in the Gridley Cow Testing Association which have produced more than 45 pounds of butterfat during the period of 30 days ending Nov. 30th, 1916: R. E. Fields (Biggs), Speiss, Holstein, 48 lbs.; R. E. Fields, (Biggs), Molly, Shorthorn, 50.1 lbs.; S. A. Mealey (Gridley), Beauty, Holstein, 72.2 lbs.; S. F. Bonner (Gridley), Bob, Holstein, 45.8 lbs.

BEEF CATTLE.

State Veterinarian Chas. Keane reports heavy importations of feeder cattle into the State at present.

Del Grieve of Yolo county recently received two carloads of Hereford cattle from Texas, finding a ready sale for the bulls as soon as they arrived.

The Barco ranch of Hollister was recently offered \$5000 by visiting Eastern folks for the white Shorthorn bull, Hallwood Villager, calved Oct. 15, 1915.

The stock yards at Kansas City have been quarantined against the foot and mouth disease. Everything about the stock yards, including the dining rooms of the employees, is being fumigated.

The Southwest Cattle Loan Co. are receiving heavy shipments of

feeder cattle from Utah for winter feeding in Imperial Valley. The same concern is also shipping some sheep into Imperial county.

What is perhaps the largest shipment of range bulls for the year is a trainload of Hereford bulls, being made by Miller & Lux from Texas. They will be used on the company's large herds of grade cows.

H. L. & E. Murphy have just arrived from the Middle West with four carloads of purebred Shorthorns, the first of their 1916-17 shipments. Included in the lot were 18 head for the Butte City Ranch in Glenn county, which will be used in founding a purebred Shorthorn herd on that ranch.

W. F. Holt of Los Angeles, who has acquired considerable wealth in the Imperial Valley, has just purchased of W. H. Stephens 5000 acres of land in Ventura county six miles southeast of Fillmore. It is fenced and cross-fenced. Purchase price, \$50,000. Mr. Holt plans to stock it with 5,000 to 20,000 grade Hereford cattle.

The Hayes & Devany Livestock Company will take over a ten-year lease for 47,000 acres of land in Merced, Stanislaus and Santa Clara counties at an annual rental for the first five years of \$20,000 and for the last five years of \$22,500. An agreement with the Howard Cattle Company calls for the purchase of 2500 head of cattle at the price of \$42 per head.

A dispatch from the International Livestock Exposition at Chicago, dated Dec. 4, says: "The University of California farm may have the honor of furnishing the grand champion steer at the International Live Stock Exposition. The judges of cattle today picked University of California Jock, a two-year-old Aberdeen Angus steer, as the best of several hundred shown in that division. California cattle competed against the cornfed stock of Illinois, Indiana, Ohio and, in fact, almost every State in the Union. The grand champion steer is picked from the champions of each division, which include Shorthorns, Angus, Herefords, Galloways, Red Polled, Polled Durham and cross breeds. 'California Favorite,' a yearling Hereford-Shorthorn cross-bred steer, took first prize in that division. This steer will also have a chance at the grand championship."

HORSES AND MULES.

T. F. McFarland of Oxnard purchased a carload of young mules and colts and a few broke horses in the Livermore valley last week.

Mr. Bowers of the firm of Ruby & Bowers is enlarging his barns at Davis to make room for more horses. He reports the sale of several stallions and jacks during the past month. The firm are making a show of their drafters at Portland this week.

SWINE AND SWINEMEN.

This year the Oakdale output of hogs will exceed \$100,000 in value.

J. P. Williams of Brawley, Imperial county, received a purebred Duroc boar from a breeder at Logan, Iowa, the past week.

Otis Linn of Modesto reports that he has recently secured a new herd boar to head his registered herd of Poland Chinas. The boar was sired by Big Joe of the Kemp herd.

According to Frank Brush of Santa Rosa the two Berkshire sows, Kintyre Elspeth and Kintyre Masie, purchased by him at the State Fair, are developing into good show prospects for next year.

Homer Hewins of Napa county reports that he has recently purchased two registered Berkshire gilts and a

LIVESTOCK DIRECTORY.

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SWINE.

Poland Chinas.

SMITH'S POLAND-CHINAS—Sows and gilts bred to Joker, First Prize Boar at the Wisconsin State Fair, 1915. These sows and gilts, sired by Iowa Wonder, who is a son of A. Wonder, the most celebrated Poland-China near having on head Little from this mating are the best I have ever seen, and where prices low quality considered. Will sell one or a carload. As a special inducement each purchaser will be given a year's subscription to the American Swineherd, the best swine paper published and a copy of the Handbook on the Sow; also a copy of the Standard Manual, Geo. A. Smith Corporation, Inc., Madison, Wis.

MAKE BIG MONEY with our big-type Poland-Chinas. Smooth, easy feeders that make greatest weight in shortest time at lowest cost, topping the market at 225 lbs. in 6 months. 300 head, both sexes, all ages, reasonable prices. Some line bred sows and gilts and toping young boars. Best Eastern blood lines. Satisfaction guaranteed. Ranch in Tulare county, but address owner, B. H. Whitten, Route 5, Box 647, Los Angeles.

GRAND CHAMPION SUPERBA POLANDS—A few choice spring Superba boars ready for service. Sows bred to Superba for fall litters. Prices reasonably low. Rough's Twinfields, Admiration Station, Riverside, Cal.

REGISTERED POLAND-CHINA BOARS of serviceable age. A Wonder and Chief Picture breeding. Every animal guaranteed. Price \$25. Bar N. Ranch, E. A. Noyes & Son, Props., Sutter, Cal.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated, purchaser to return crates. E. A. Hall, Watsonville, Cal.

REGISTERED POLAND CHINAS—Young boars ready for service. Weanling pigs, both sexes. Prices attractive for quick sales. J. H. Cook, Paradise, Cal.

REGISTERED POLAND-CHINAS—Proudf, pabulous, profitable porkers. Choice boars now ready for service, \$25 each. Weanlings, \$15. Dr. J. A. Crawshaw, Hanford, Cal.

LAKEVIEW STOCK FARM POLAND CHINAS and money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hauck, Alton, Humboldt Co., Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Linn, Linview, Route 4, Modesto, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Treshitt, Box 82A, Hanford, Cal.

REGISTERED POLAND CHINA SWINE—Prize winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

POLAND CHINA HOGS FOR SALE—Registration papers furnished free. C. A. Cooke, Durham, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 27A, Davis, Cal.

KNOR HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

REAOAKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1914 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for Fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

A PICTURE FOR A POSTAL—If you are interested in good Berkshires, we shall be pleased to send you by return mail a photo of a representative animal from our herd, together with some facts about the natural conditions under which these hogs are raised. Write your wants to Butte City Ranch, Home of Good Berkshires, Box P, Butte City, Cal.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

WINONA BERKSHIRES—Three July 27, 1916, daughters of Winona Violet Champion, out of Rookwood Lady 106th, a sister of Laurel Champion. Winona Ranch, R. 1, A-Box 105, Grants Pass, Ore.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

BARGAINS IN BERKSHIRES—Write today for our Special List of high-class boars and open gilts. Both the offerings and prices will please you. Silver Birch Farms, Box P. P. Newton, Wash.

CHOICE REGISTERED BERKSHIRE—Exceptionally fine pigs, \$15 each. Unrelated trio, \$40. Boars, sows, and gilts at reasonable prices. W. H. Waugh, Riverside, Cal.

SPECIAL—Six good service boars and a few sows in pig to Premier Leader due to farrow in October. Geo. M. York & Son, Berkshires breeders, Modesto, Cal.

REGISTERED BERKSHIRES of prize-winning blood. Write for description and photos. Imperial Stock Farm, Morgan Hill, Cal.

REGISTERED BERKSHIRES—Weanling pigs, \$10 each. G. A. Casey, E. 7, San Jose.

REGISTERED BERKSHIRES—For sale, bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Nevada, Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Perris, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Calif.

BERKSHIRES—Carruthers Farms, Mayfield, Cal. Second annual sale, August 2, 1917.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

CHAS. GOODMAN—Breeder of high-class Berkshire Swine. Williams, Cal.

Duroc-Jerseys.

DUROC JERSEYS—My hogs won highest honors at State Fair, taking first prize herd, first prize sow, second prize boar. Were the largest of their age exhibited. Stock all ages for sale. Prices reasonable. Breeding and satisfaction guaranteed. Haden Smith, Route 1, Box 540, W. Modesto.

RANTHO RUBUS DUROCS—About closed out. A few extra good sows, choice July gilts and weanling pigs, both sexes. Your last chance for high-class stock at common prices. Remember breeding stock will be scarce next year. Elmer Lamb, Ceres, Cal.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

REGISTERED DUROCS—Service boars and open gilts from High Model, Defender and Crimson Wonder stock. River Bend Farm, St. Helena, Cal.

DUROC JERSEYS—Herd boars. E. M. Colon and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hanford, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs \$10. H. M. Boudier & Son, Napa.

HEAVY BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class pure-bred hogs, both sexes, any age.

DUROCS—Defender Cantic B and Golden Model strain. The big type. Allen Thompson, Tulare.

REGISTERED DUROC JERSEY MALES—Three months old, \$10. H. J. Schell, Atwater, Cal.

DOS HERMANOS REGISTERED DUROCS—Duveneck & Pickersgill, Ukiah, Cal.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROC JERSEY SWINE—Frederick M. Johnson, Napa, Cal.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

Yorkshires.

LARGE YORKSHIRES—Choice spring boars, gilts, and weaned pigs from Champion sow P. I. E., or from breeding of champion boar and sow, Sacramento, 1916. If you see them grow you will like them. Riverina Farms, Paradise Road, Modesto, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

Chester Whites.

BILLIKEN HERD OF CHESTER WHITE SWINE—Registered and Cholera Immune. 4 bred gilts due to farrow the latter part of January. 10 young boars of service size. 20 open gilts that will be bred to suit the buyer. Write for the booklet "Chester Whites" and find out what the breed is and what they are doing. This herd represents the very best blood lines the breed produces. C. B. Cunningham, Mills, Sacramento County, Cal.

REGISTERED IMPROVED CHESTER Whites—Grizzly Bear Ranch, East Auburn, Cal.

Essex.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

Hampshires.

FOR SALE—Purebred registered Hampshires; any age; either sex. Registration free. H. E. Richardson, E. F. D. No. 1, Chico, Cal.

DAIRY CATTLE.

Holsteins.

REGISTERED HOLSTEINS—Herd sire King Kordyke Hengerveld Ormsby 7th, 86623. His full sister, as Junior 8-year-old, made 32.04 lbs. butter in 7 days. The record of his sire's dam averaged 30.98. George Kounias, Modesto, Cal.

REGISTERED HOLSTEIN BULL CALVES—Sired by Lorena Kordyke Alcantara, whose dam made 29.75 pounds butter fat in seven days as a four-year-old. J. M. Campbell, Escalon, Cal.

FOR SALE—Purebred Holstein Bull—"Sur Captain"—under 3. Three-quarters black. Healthy. Good-tempered. Sure stock-getter. Price \$150. H. P. Rosenberg, Box 640, Mill Valley.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

REGISTERED BULLS by King Kordyke (Pontiac) and out of A. B. O. cows. A splendid selection old enough for service. Write or call. J. H. Hartigan, Woodland, Cal.

TULARE GUERNSEY AND HOLSTEIN Farm is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

A NICE YOUNG SON from El Prado Wayne Colantha and from a 24:26 lb. dam. J. W. Benoit, Breeder of Registered Holsteins, Route C, Modesto, Cal.

THE MCCLLOUD RIVER LUMBER CO., McCloud, Cal.—Highclass thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

THE HENDERSON CO.—Breeders and importers. Registered Holsteins. Sacramento Bank Bldg., Sacramento.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons, Corp., Importers and Breeders, Woodland, Cal.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chico, Cal.

SUNNYSIDE HERD—Registered Holsteins. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams B. F. Anderson, Modesto, Cal.

REGISTERED HOLSTEIN BULLS, \$50 to \$150. Giorietta Stock Farm, Woodland, Cal.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Calif.

Jerseys.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3 lbs. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

VENADURA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly record. Guy H. Miller, Route 1, Modesto, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs. butter as two-year-olds. A. A. Jenkins, Tulare.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

YOUNG REGISTERED JERSEY BULL CALVES at reasonable prices. O. J. Ames, Oakdale.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvino, Petaluma, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Haworth, Modesto, Cal.

Other Breeds.

PACIFIC GUERNSEY HERD—Cattle selected from best imported and Advanced Register Stock. Now offering choice bulls. C. S. Rasmussen, Lodi, Cal.

EDGEWOOD FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgewood Farm, Santee, Cal.

BREEDERS OF REGISTERED SHORTHORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

BEEF CATTLE.

SCOTCH AND SCOTCH-TOPPED SHORTHORNS—We have the largest herd of straight Scotch cows in California. Foundation stock of both sexes for sale; also a choice lot of range bulls. Barco Ranch, Hollister, Cal.

REGISTERED YEARLING SHORTHORN BULLS—Heavy-boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

FAIR OAKS RANCH WHITTS, Cal.—Young registered Shorthorn bulls for sale. Sired by Landseer 379318, grandson of Imported Villager 295884.

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Falcines Ranch Co., 320 Sharon Bldg., San Francisco.

CROLEY'S CALF FEED with skim milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Eureka, Cal.

GEORGE WATTESON—Breeder registered Herefords, Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Ramouillet and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

KAUPKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets, Hanford, Cal.

HORSES AND MULES.

REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders, Easton & Ward, Proprietors, Burlingame, Cal.

boar from H. C. Harpending of Dundee, New York, to further strengthen his herd of Berkshires.

The Napa State Hospital has between 40 and 50 head of registered Berkshires among the 600 head of garbage-fed hogs which are maintained by that institution. Mr. Duffey, manager, states that the purebred herd will be still further increased.

Mr. H. C. Carr of the First National Bank of Porterville has purchased a good many bred gilts to be put out among the boys in his community. If the best results attained by these boys could be shown at the Sacramento fair, and there was that added fillip of prizes and competition with the boys of other sections, it would go far toward increasing the interest and demonstrating the profits in swine growing.

Pig clubs are organized among the farm boys and girls by the U. S. Dept. of Agriculture and the State Agricultural Colleges in co-operation. There are now 10,000 pig club members. The members are taught how to raise pigs and earn and save money. For further information see your county agricultural agent, or write, or have your parents write, to your State Agricultural College.

SHEEP.

Twelve thousand head of sheep, brought in from the ranges, are now in Visalia and will be fattened there on alfalfa and beet pulp for the San Francisco market.

H. Beckwith of Bethany has recently purchased 20 Shropshire ewes from the Meacham Estate. It is his intention to establish a small flock of purebreds in order to clean up the farm wastes profitably.

California is represented at the sheep show at the Chicago International Livestock Show this year by Bishop Bros. of San Ramon and the University of California. Bishop Bros. have sent 15 head, and it is expected that they will make a creditable showing in the Shropshire classes. The sheep exhibited by the California School were awarded the blue ribbon.

The order removing the sheep quarantine in the state of Colorado and in the California counties of Tehama, Glenn, Colusa, Sutter, Marin, Napa, Calaveras, and Mariposa, became effective Dec. 1. The quarantine still stands with respect to the San Joaquin counties and as to Mendocino and Sonoma counties. It is believed that because of the brushy nature of the country, which prevents taking up all the sheep so they can be dipped against scab, that Sonoma and Mendocino counties will be the last to be freed.

HORSES FOR SALE—All or any part 170 head. Imported Percheron stallion. 50 grade Percheron mares. 30 three-year-old colts, broke and mated; \$250 to \$300 per span. 30 two-year-olds; 30 one-year-olds; 30 nine months old. S. L. Skaggs, Madera, Cal.

STOCKTON PERCHERONS again winners at Sacramento. Get next, brother farmer. H. G. Learned, Producer, Stockton.

MISCELLANEOUS.

SAN FRANCISCO LIVE-STOCK EXPORT CO., Eugene R. Croley, Manager, solicits foreign orders for purebred registered and merit breeding animals and fowls. California has great diversity of climatic and other conditions that enable us to select animals that have been raised under conditions similar to those of the location for which they are intended. We should be informed regarding these conditions and be allowed ample time to make selections. Nearly all disappointments in buying afar are the result of insufficient information as to conditions or to lack of time for proper selection. Our plan and terms for "raising animals to order" to fit into peculiar foreign conditions is worth investigating. References: Dun or Bradstreet, or San Francisco banks. Office 219 Underwood Building 525 Market St. San Francisco.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co., Inc., 531-637 Brannan St. San Francisco.

THOROUGHBRED SCOTCH COLLIES—All bred from our noted prize-winners. Have a few 3 months old puppies—very choice. Write us what you want. Browndale Kennels, Redwood City, Cal.

STOCK RANCHES AND FREE RANGE—Different counties. Write for free booklet. Joseph Clark, Sacramento.

D. O. LIVELY, 216 Hobart Building, San Francisco, buys and sells livestock—any kind—any quantity.

DUROCS AND GUERNSEY BULL CALVES elite bred to 900-lb. boar. Ed. E. Johnson, Turlock, Cal.

MISCELLANEOUS.

An appraisal of the value of livestock in San Joaquin at this time is \$5,000,000.

On account of the Stanislaus Livestock Show and Exposition held last September being such a success, steps are being taken toward establishing permanent county fair grounds by the Rural Modesto Chamber of Commerce.

We regret to state that an error was made last week in the advertisement of Geo. A. Smith, breeder of Holstein-Friesian cattle and purebred Poland Chinas, announcing his forthcoming sale. The date of the sale should be Wednesday, December 13, instead of Wednesday, December 15. See advertisement elsewhere in this issue.

Depredations of predatory animals accompanied by outbreaks of rabies among them in parts of Oregon, California, Nevada, Idaho and Utah resulted in the shooting, trapping and poisoning of over 11,000 coyotes during the last fiscal year by hunters in the employ of the Biological Survey of the U. S. Dept. of Agriculture. Altogether over 15,000 noxious animals, including wolves, coyotes, mountain lions, and bobcats, were destroyed.

SWINE BREEDERS' MEETING.

Everything is progressing favorably towards a successful meeting of the California Swine Breeders' Association to be held at Los Angeles, January 18 to 19. Within the past few days the following committees have been appointed to make arrangements for the meeting and look after the visiting stockmen:

Entertainment Committee—Frank M. Hauser, Herbert Newcomb, Charles F. Hardy, N. R. Vail, Herman Janss and S. R. Dixon.

Reception Committee—B. A. Benjamin, O. B. Fuller, Stoddard Jess, Harry Chandler, A. T. Brant, and H. J. Hauser.

Attendance Committee—Frank H. Thomas, Mr. Hall, LeRoy Holt, A. L. Hobson, Roy Farr, and F. E. Peck. Executive Committee—H. J. Hauser, chairman; S. R. Dixon, J. C. Good, John A. Woodward, N. Russell Vail, Herbert Newcomb and J. E. Maurer.

The program as so far mapped out is:

Thursday, January 18—Business session, followed by address, The California Swine Breeders' Association, by president C. B. Cunningham, Mills. Feeding, Growing and Marketing Hogs, by Leon L. Hanson, Holtville. The Breeding Herd and Purebred Business, William Bernstein, Hanford. Discussion: Feeding Problems and Self-Feeders. Luncheon.

After lunch the following papers will be given: Why Prices of Hogs in California are Lower than in Oregon or the Middle States, representative of one of the packing houses; Why Strictly Grain-fed, Milk-fed, Alfalfa-fed and Acorn-fed Hogs all bring about the same price in California, representative of one of the packing houses; What is Being Done and What Should be Done for the Good of the Hog Industry in California, D. O. Lively, San Francisco.

Friday, January 19—Killing demonstration at Cudahy Packing Company, in the morning, followed by curing display at Wilson & Co.'s packing house; then inspection of plant, and luncheon at Hauser Packing Co.

GOOD GUERNSEYS FOR CALIFORNIA.

Two exceptionally fine Guernsey bulls were received last week from New Jersey by J. W. Henderson for the Bella Vista Guernsey herd. This herd has been headed by Imp. Lord Kitchener, whose heifers are now freshening, one 2-year-old giving 42 pounds milk. It is for use on these heifers that this new blood has been secured.

The older of the two bulls is Glenburnie Boy, whose dam, Glenburnie Girl, has a butterfat record of 684 pounds as a 3-year-old. Her

dam has a 654-pound butterfat record. The dam of the younger bull also has a 654-pound butterfat record.

Both were sired by Sir Elsax, and are grandsons of Ne Plus Ultra, whose daughters brought the record price at the Hope sale recently. The dam of Sir Elsax, Elsie 2nd, holds the highest one-day record for her age—3.7 pounds butterfat. Both of the young bulls are direct descendants of King Masher 11084, who is regarded as probably the greatest Guernsey bull. No other bull has two daughters in the list of class leaders and none has averages so high for every daughter yet in milk. Eleven daughters average 12,495 pounds milk and 664 pounds butterfat. This includes four 2-year-olds averaging 10,565 pounds milk, 525 pounds butterfat, and four 3-year-olds averaging 11,982 pounds milk, 635 pounds butterfat. The four best records average 14,564 pounds milk and 750 pounds butterfat. Such blood should show its effect in this herd.

According to Professor M. E. Jaffa of the department of nutrition at the University of California, wheat at its present price is altogether too expensive to feed to chickens. Cereals which cost considerably less may be fed with as good or better results. A mixture of barley and oats will prove a good substitute and cost much less, he says.

Mrs. Van Pelt—If you work for me, Bridget, you will have to wear caps. I suppose you do not object. Bridget—Sure not, mum. I can borrow wan from me cousin. It has ear tabs and a 'possum tail on top.

The 400,000 hens wanted from Southern California before the new Weinstock marketing plan is put into execution seem assured.

YUBA

BALL TREAD TRACTORS

\$5 repair bills on a Yuba which has been pushed to the limit, one job being the harrowing of 30 to 40 acres a day.

Have you a big farm project where this economy-machine can save you money?

THE YUBA CONSTRUCTION CO
DEPARTMENT A118
433 CALIFORNIA ST.
SAN FRANCISCO CALIF.

TAYLOR

WILL PAY YOU MORE

for Furs. Prices high. Trapping season now on. Get busy at once. We furnish traps and supplies at lowest prices.

Write for new booklet, "Opportunities for pleasure and profit in trapping"—also shipping tags, price lists, etc., ALL FREE

SHIP TODAY

F. C. Taylor Fur Co.
360 Fur Exchange Bldg.
St. Louis, Mo.



Breeding Cows on a City Dairy.

[Written for Pacific Rural Press.]

Producing market milk under conditions as they exist in southern California, with the exception of Imperial Valley, at this time calls for the most intelligent kind of management if the venture is to be profitable. This is largely attributable to land and feed values, which are, on the average, higher there than elsewhere in the State.

It was with a thorough understanding of this situation that S. A. W. Carver started, four years ago, to establish a whole-milk dairy run on practicable and profitable lines, on 200 acres in the Artesia district.

At the start Mr. Carver recognized that good cows were fundamental factors on a dairy. He further understood that such cows could not be bought in large enough numbers to supply his need at a low figure, but must be bred and raised; for it was evident to him that no dairyman who has spent time and money in breeding up a high producing herd of cows cares to dispose of them under normal conditions.

But cows for the foundation herd had to be secured and by using discretion in buying and afterward weeding them down with the Babcock test and the scales, the average production came well up to the 220-pound per year standard that had been decided on for mature cows.

As heifer raising was not the common practice on dairies in that part of the State, the possibility of buying heifers and raising them appealed to Mr. Carver, and as a result continual buying of heifers from the best cows from dairies all over the country was practiced, the custom being to pay \$8 to \$12 a head for them at weaning time. The cost of raising these heifers to freshening

time, after the poor ones are culled out, has averaged \$60 per cow.

After feeding these calves on skim milk for a while at the dairy they were turned onto hill pastures, located some 15 miles from the dairy, which had been rented for young and dry stock.

In purchasing both cows and heifers it was the object to secure about one-third Jersey and Guernsey cattle and the balance Holsteins, the object being to produce a high testing milk. This was carried out further by the purchase of registered Holstein and Guernsey bulls out of high testing dams.

With the freshening of the heifers have also come butterfat standards for the different classes of cows, a two-year heifer being expected to produce 150 pounds of fat or better with her first calf, a three-year-old 185 pounds of fat, and a four-year-old or better 220 pounds of fat.

These standards are adhered to by the weighing and testing of each cow's milk twice a month, the weighing being done in the milk barn; and the testing at the Los Angeles plant of the Crescent Creamery where a composite sample of the two milkings is sent in small milk bottles.

Now after four years of culling, 265 cows are being milked, half of which are heifers with their first calves. The daily production of this herd in August was 700 gallons of milk daily, having an average test between 4.1 and 4.2 per cent, or an average fat production daily of about .90 pound. From experience to date, however, it is evident that this will be materially increased as the work of breeding and selection continues.

Brood Sow Ration.

To the Editor: What is a good ration for brood sows before and after farrowing?—R. L., Winton.

[Answered by Prof. J. I. Thompson, University Farm, Davis.]

Just what constitutes a desirable ration for a brood sow depends upon a number of factors, prominent among which are the age of the sow, her condition, and what sort of succulent feeds, if any, are available.

Gilts bred for the first time need to be kept growing, which means that a grain ration is absolutely essential. If pasture, either of alfalfa, rape, or some similar crop is available, they should be allowed the run of it so long as the ground is in fit condition to be pastured.

Bred sows, young or old, must

have an abundance of exercise.

The grain ration for a gilt will be heavy or light, depending on her condition; and barley, corn, or milo maize will make up the bulk of it. Some alfalfa meal may be added to cheapen it, but should not be used in sufficient amounts to make the ration excessively bulky.

If skim milk is not available, tankage should be kept in a self-feeder. At this time of the year if alfalfa is gone, some sorghum or pumpkins or mangels might be fed for succulence.

A similar ration is desirable for the old sows, but if they are in good vigorous condition, they will need less grain in proportion to their size than the younger gilts.

WHEN AND HOW BEET-FEEDING PAYS.

[Written for Pacific Rural Press.]

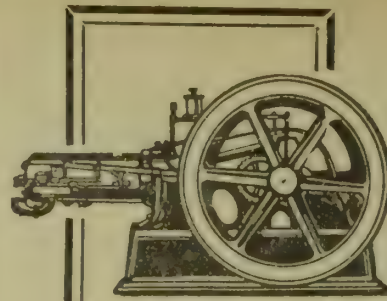
The growing of beets for dairy cows should receive more recognition in most all sections of California than it does, as it is particularly advantageous to have them for a succulent feed during the winter months when green alfalfa is not available.

In the dairy districts of San Benito county the beet which has proved most satisfactory is half mangel and half sugar beet, this variety

yielding heavier than the sugar beet and containing more food value than the mangels.

On the recently established dairy of Dr. Obannon planting of beets is done any time after January 1, sometimes as late as March or April. On his ranch the high land does not require early digging, but in other locations where the land is low, fall digging and storing is practiced. These can then be fed out as required during the winter months.

Heavy shipments of hogs and cattle are being made to San Francisco from Oakdale.



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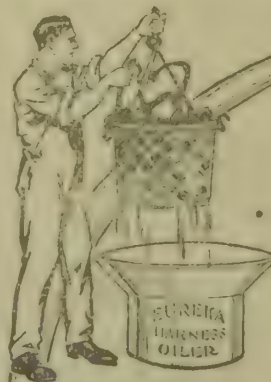
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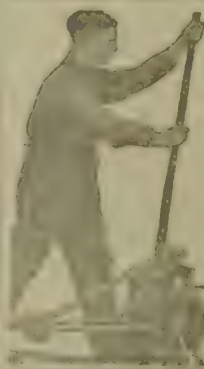
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California Hog Book

BY W. S. GILFORD
Price, \$2.00 per copy. Postpaid.

The Business of Selling Purebred Hogs.

[By F. R. Steel, Grants Pass, Ore.]

The last and, from the money standpoint, the most important phase of the purebred breeding business is the selling of the output. There are ten breeders who can raise a good pig to every one who has the business ability to sell the output properly. Steady and intelligent advertising in the farm and stock journals is the standard way of selling your output. About 10 per cent of the gross receipts for stock for the year is ordinarily about the right amount to spend for advertising annually in the papers.

Another necessary feature of the selling campaign that every successful purebred breeder must conduct is the showing of his animals at some of the good fairs. The money that the exhibitor wins in premiums at these shows is only important as a means of reducing the cost of showing; but the awards won are of paramount importance as advertising ammunition. Ninety per cent of the purebred hogs sold go out on mail orders to buyers who have never seen them. These men will buy quickly and pay good prices for the produce of show record animals, when they would not either buy so quickly or pay so much for an equally good individual whose sire and dam lack the proof of excellence as given by a show record in some strongly contested show. They figure that a breeder may be prejudiced in favor of his own animals in describing them, especially when trying to make a sale; and more-

over may not be a competent judge. On the other hand they have confidence that the judge at the fair was not prejudiced; and was competent as well. In other words, the animal described as good by the owner may or may not be good, but the show winner has proved his or her excellence by the winning.

The matter of a catalog should be taken up at once by all purebred breeders. No business firm trying to sell 90 per cent of its output by mail would even think of not having a catalog, neither should a breeder do so. A four-page pamphlet describing your herd can be gotten out, not including cost of cuts, for around \$12.00 per thousand copies. Every breeder should have at least this much of a catalog. Printed stationery should also be used. It costs little more and pays well. Type-written letters of which carbon copies are kept, are happily becoming the universal rule with breeders doing any considerable business. Certain and prompt mailing of registration papers and pedigrees after animals are sold, together with an absolute guarantee of satisfaction to the purchaser, are necessary factors in building up a large and continuous business. It cannot be done in a day, or a month, or in one year; but continuous, intelligent, and conscientious effort will build up a purebred breeding stock business that will pay the breeder, will strengthen breed he uses, and help the community in which he lives.

Grain to Precede Corn for Silage.

[Written for Pacific Rural Press.]

The curious thing about silos in California is that they seem to keep their owners continually thinking ahead of their present feed needs, which is by no means a bad trait where permanent animal husbandry is practiced.

With most of the silos already filled and corn-planting time several months away, the stock farmer may believe that his silo problems are over for the time being; but that is not the California way to get the most use out of the land, particularly if the farm is an irrigated one.

Before corn-planting time, most experienced silo owners will have

harvested a crop of grain or grain hay; and it is to prepare for that crop that thorough plowing will be needed at an early date. December is the usual month for planting either barley or oats on the silage ground, experience showing that in many locations these may be allowed to ripen for grain, when water is available early in July for irrigating the land before the corn crop is planted.

Older silo owners will not need this warning, but those who were late fall purchasers or those who contemplate being silo purchasers next year, will do well to heed the advice to "be prepared."

RICE AND RICE STRAW FOR HORSES AND OTHER LIVESTOCK.

To the Editor: I take the liberty of writing you relative to some of our experiences in this neighborhood with the feeding of rice and its by-products, as we feel that few farmers in the State realize their feeding properties. Several farmers in this locality are feeding rice straw and rolled barley to their working stock and claim that the stock are standing up famously. The Butler boys have fed rice straw for two seasons and get the straw for the hauling. The largest feed house in Petaluma has purchased the last ten days 15,000 sacks of rice for chicken feed. One of the large stockmen of this locality is rack-feeding rice straw to stock cattle. Contractors who were

working here this fall harvesting rice had rice rolled with barley in the proportion of 50 per cent and claim they prefer that to feeding rolled barley straight, and the same time effecting a big saving by getting thrasher-cracked rice at \$5 per ton. Peterson and Campbell of Maxwell, large sheep dealers, are running several thousand sheep on rice stubble and will bring over this week 1500 head of hogs. Mr. Petersen turns the hogs onto the rice stubble for about five weeks and then drives them to the corral and stall-feeds them broken rice, claiming that he prefers it to corn.

When we can buy rice straw and cracked rice for feeding at prices far under the price of all other feeds, we should "boost California rice," the only food that today is for sale cheap. W. E. Barnard.

MORNING GLORY SEED FOR FEED.

To the Editor: What is the value of meal made from morning glory seed? Our stock are crazy for it and

it is cheap, but seems very rich. Is there any danger of overfeeding?—C. N., Sebastopol.

We don't know, but hope it is good for something. Let's hear from our readers.

"HEADQUARTERS" FOR WOOD PIPE AND TANKS

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WINE TANKS

FERMENTING TANKS

WATER TANKS

OIL TANKS

PIPE

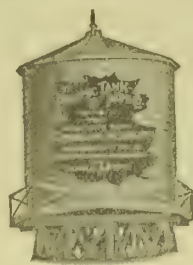
WOOD STAVE PIPE

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Pacific

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GRAND CHAMPION SOW,
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For many years, at widely separated show rings, under many different judges of varying type ideals, my Poland Chinas have been consistent prize-winners. My herd is large, and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished. Young Stock, \$30 Up.
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LARGEST HERD IN THE COUNTRY.

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35 Choice Service Bulls
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A Few Choice Berkshire

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OKSHIRE, DORSET, and other breeds
DYAL, BENTLEY and others, First Prize
JULY 1, 1916
HOLSTEIN BULLS from High-Testing Cows.
1210 FLOOD BLDG.
FIVE.

Improving Soil With Dairy Cows.

[Written for Pacific Rural Press.]

When M. Fiscallini of San Luis Obispo county purchased his present ranch of 180 acres five years ago, it was in a badly run-down condition owing to excessive cropping to grain hay and a lack of livestock.

Having always been a dairyman and believing that a system of pasture rotation would improve the soil, he established a small dairy on the place and began selling his milk to the retail trade of San Luis Obispo.

The system that has been in use and the one that will be continued is to plow up about a quarter of the ranch at a time for field crops and pasture the balance of it. Oat and barley hay, small white beans, some Indian corn and sorghums are the usual crops grown. New ground is not plowed each year; but instead about every four years, thus providing 12 years of pasture in the 16. The benefits resulting from this are already apparent in the crops harvested the past year from land that had been pastured previously.

Without a silo, it is necessary to cut and feed green during the summer months when the pasture is poor in quantity and quality. Then it is that the corn and sorghums are chiefly used, these being fed in connection with a concentrate ration of beet pulp, alfalfa meal, rolled barley, and coconut meal at the barn.

Starting in September or October, according to the year, the barley and oat hay which have been previously

stored in the may mow are fed; but the concentrates are still used. This hay and grain ration is fed through the winter till the hill pastures on the ranch are good, which generally occurs between March 1 and April 1.

Bean straw, when available, is used as feed for the dry stock and calves, replacing the grain hay. Experiments are also being made with sudan grass and other dry climate forages in an effort to have a continuous supply of succulent feed during the dry summer and fall months. A silo would meet this requirement and would have been erected before this time but for the expense of machinery for filling purposes.

Sanitation.—Not alone in feeding does Mr. Fiscallini's practice differ from most other dairymen in the district, but also in the matter of sanitation around the milk house.

This is attributable to the concrete milk-room that has been erected, having a well-drained floor and ample light and ventilation. The milk-cooling and bottling room is spacious in size and entirely separate from the sterilizing vat.

After cooling to as low a temperature as possible with a coil cooler through which well water is run, the milk is bottled and stored in a concrete walled refrigerator, having a cork-filled space between the two walls. Here the milk is held at a low temperature by the use of ice until delivery is necessary.

Oleomargarine Interests vs. Cal. Butter.

[Written for Pacific Rural Press.]

That the campaign of the oleomargarine manufacturers and dealers, to cast reflections on the cleanliness and quality of butter and other dairy products is to be continued along lines similar to those started some time ago by them, seems evident from the following letter, recently received by Prof. E. J. Lea, Director of the Pure Food Laboratory of California, from C. S. Ashcraft of the Interstate Cottonseed Crushers' Ass'n of Alabama.

He writes:

I wish to call attention to the dishonest methods prevailing largely in the dairy business, whereby butter makers (being uninspected) often take advantage of their opportunity to get into their plants low grade, uninspected oils and fats which they churn into their butter, and then by means of artificial coloring and artistic wrapping, etc., they sell millions of pounds of this compound as and for butter.

These unprincipled people are able (with small chance of detection) to practice the most unfair competition with legitimate oleomargarine makers and with legitimate butter makers. The injury to high-class butter indirectly injures our meal market.

Do you advise taking up the fight when Congress meets? Will you take up this matter with your Congressman while he is at home?

If all of Mr. Ashcraft's attempts to secure letters of vification from prominent experts in the various States are no more successful than this one to Prof. Lea, his supply of so-called expert advice on the manufacture of impure butter will be of little availability to him, for below are extracts from the letter sent him

by F. W. Andreason, Sec'y of the State Dairy Bureau, to whom the correspondence was referred:

There is no tax on cottonseed oil in this State unless it is mixed with butter in such manner that it can be sold to unsuspecting purchasers for pure butter.

Prof. E. J. Lea, Director of the Pure Food Laboratory of California, writes me that his department has no evidence that foreign fats have been mixed with dairy products in this State. You may rest assured that Prof. Lea's Department would have found and prosecuted any manufacturer of dairy products who would make such attempt. The factories of dairy products and the products are inspected both by the Pure Food Laboratory of California and by the State Dairy Bureau. In addition, the United States Revenue Department is very active in examining butter to ascertain whether any foreign substance has been added to it. Where such is found the offender is not fined \$25 as is customary where inferior articles are added to other food products to increase their weight or bulk, but he is compelled to take out a license which costs \$600 a year and is taxed 10c per pound for every pound he manufactures.

In a few instances manufacturers have either willfully or accidentally allowed more than 16 per cent of moisture in the butter. They have been promptly fined or they have been compelled to take out a license and pay the tax.

Letters like the one from Mr. Ashcraft, we are informed, are being sent to bakers' unions, prominent fraternal organizations, etc., to give added weight to the oleomargarine interests at Washington, where a determined effort is to be made to lower the present oleomargarine tax.

JERSEYS FOR RIVERSIDE.

[Written for Pacific Rural Press.]

The Riverside Jersey Breeders' Association, new and aggressive, have sent a representative East with J. M. Roberts, Field Agent in California for the American Jersey Cattle Club, to bring out to California a shipment of high-class animals characteristic of the breed.

This newest purebred breeders' organization is composed of alert and progressive business men of Riverside who are going to place their community and Southern California out in front and keep the balance of the breeders hustling to keep up. It is the result of the Field Agent movement planned by the American Jersey Cattle Club.

The importance of the right kind of foundation stock has convinced the Riverside Jersey Breeders' Association that the importation into California has a great value to every breeder of purebred Jersey cattle in the State. The plan is to visit the

States of the Middle West and bring out only the very best of foundation animals.

The Jersey Special for California should arrive at Riverside about December 25.

ALFALFA SEED.

To the Editor: What is the outlook for alfalfa seed? There is quite a quantity around here.—E. W. H., Dos Palos.

Some of the big dealers report full supplies; but growers with some for sale could dispose of it with a little ad. in Pacific Rural Press, which reaches more than 22,000 California farmers. An absolutely fair sample of it should first be tested by the University for purity and germination. The outlook seems good, considering the high prices of the past year which will encourage planting. The heaviest demand will come in the spring.

Every livestock feeder should be equipped with cutter and grinder.

Revada Guernseys BRED IN THE PURPLE



Junior and Reserve Grand Champion Cow at Sacramento.

Every animal on this farm is imported, and carries the blood of such noted sires as Governor of the Chene, Sequel's Monogram, and Governor of the Gree.

HERD BULL IMP, Ricardo of Edgmoor 34367

**Some Fine Young Bulls
FOR SALE**

See Our List of Winnings at the California State Fair

REVADA FARM

B. E. NIXON, Proprietor.

Yountville,

Napa County, California

Shorthorn Bulls You'll Like



Shorthorn Cattle
Duroc Jersey
Swine

That's the only kind we have in our offering for this season, for above all things we want you to be satisfied.

Our herd of Registered Shorthorns has been selected at considerable expense with the idea of raising heavy-boned, thick-meated and growthy bulls.

**THE KIND THE TRADE
DEMANDS**

Come and see our herd, 7 miles from Palo Alto on the Woodside Road, or write us for pedigrees and prices.

ORMONDALE CO.

R. F. D., No. 1,
Redwood City,
California

University Wins Grand Championship.

[Written for Pacific Rural Press.]

University of California Jock has been made "Reserve Champion" at the International Livestock Show at Chicago. As a yearling Jock was awarded the following prizes at the Panama-Pacific International Exposition:

Aberdeen-Angus steer 18 months and under 24, \$30.00.

Champion Aberdeen-Angus steer, \$75.00.

Champion steer one-year-old, any breed, \$50.00.

Grand Champion steer of the Show, \$100.00.

At the Pacific International Livestock Show at Portland the same year he was first prize Aberdeen-Angus yearling, bringing \$50.00.

At the California State Fair, 1916, he was first prize Aberdeen-Angus, two-year-old, \$25.00, and Champion Aberdeen-Angus steer, Gold Medal.

"California Favorite," a cross-bred Hereford Shorthorn calf, has been made Grand Champion at the International Livestock Show. California Favorite was shown for the first time at the State Fair this year where he was the first prize steer calf, the champion grade or cross-bred steer, and the grand champion

steer of the show.

These two steers have won the highest awards for steers that it is possible to obtain.

When the animals left home "University of California Jock" weighed 1880 pounds, more than any two-year-old steer that has been grand champion at the International. When "California Favorite" left Davis he weighed 100 pounds more than any of the three calves that have been grand champions. "Jock" is an unusually smooth animal for his age and weight. In "California Favorite" is an extreme illustration of early maturity.

The wethers exhibited won the highest honors in the College Class.

The showing made by these animals in the heart of the greatest livestock section of the country will surely awaken in the minds of the corn-belt farmers the wonderful opportunities for engaging in the pure-bred livestock business in California.

This is the first time that a University has bred and fed a Grand Champion steer at the International Livestock Show. The two steers above mentioned were both bred and fed at the University Farm, Davis, California.

Getting Large Litters.

[By A. L. Nelson, California Polytechnic School.]

There is no one question concerning hogs on which so much importance is placed by people writing to us as the one regarding the size of litters. The question is of no small importance in the profitable production of pork. In fact, the size of the litter and the care given by the mother and the power to make rapid growth, are the main points in profitable pork production as far as the powers of the hogs are concerned. If these points are possessed by any strain of hogs, the remainder of success rests with the management.

The reason for different breeds is that they should not only have the three things above named, but, in addition, put on flesh of such a nature and in such places on their bodies as will give the largest net return in bacon or on the block, and at the same time have the points of beauty which attract the eye.

These things can be brought about only by long years of care and good management. But one will say, I have bought purebreds which have been poor mothers or have had small litters. It may happen that not all breeders are as conscious of their duty as they ought to be. In fact, when a man comes to a breeder and does not require the whole truth concerning the power of a sow to produce large litters of well-shaped pigs, he may let the matter slip by as you might yourself if you were in his place. You can see the size and shape, get their age; and then, if it be a sow you are buying that has had a litter, inquire as to the number of pigs in the litter, and judge whether she is a good mother by the number she raises. Look at the man's herd. If the hogs have not been culled, and are all uniformly of good size and shape, you

may expect the same type of hog with the same management. Don't be afraid to ask how many pigs this sow had, and this one, and how many they raised and where you can take a look at their shoats. Do so. By this you can judge the hog you are buying.

Put Breeding Animals in Condition.—At this time of the year, there is just one little item that should be mentioned regarding management. Nearly every breeder or hog raiser has found that at breeding time it pays to have the sows and boar in a decidedly thriving condition. A large number of strong ova are produced and fertilized when in this condition. This means larger and stronger litters.

The feed best adapted to do it is rich green or succulent food with some grain. Take special care of the boar. In breeding, two sows a day are enough for one boar, one in the morning and one in the evening. In this way one boar will serve fifty sows during one season. Men who are going into the hog business should be looking into this matter.

CAREFUL INBREEDING.

[Written for Pacific Rural Press.]

While inbreeding is not generally practiced or advocated by successful livestock raisers, but is more usually discouraged, the experience of George Farmer of Kings county with grade Guernseys shows that improvement may be accomplished by intelligent inbreeding.

Mr. Farmer started to improve a grade herd of scrub cattle by the use of Guernsey bulls 16 years ago at a time when it was difficult to purchase purebred animals of that breed in this State. As a result of this scarcity he was compelled to take the best-looking grade Guern-



EMPRESS LASS 21846,
Grand Champion Washington, Oregon,
California and A. Y. P. Exposition.

sey bull he could find

The heifers from this bull proved to be good producers as well as an improvement over their dams in dairy type, so instead of securing an untried bull they were bred back to their sire. The result of this close inbreeding seems doubtful in most cases; but in that and subsequent instances, the heifers have been better producers than their dams and have also maintained strong constitution and good dairy type.

Since then two other bulls have been purchased, the last one a registered animal out of an A. R. O. dam. Fortunately each animal has proved prepotent in both production and type; and while there have at times been cows that didn't cross back well, the nick in most cases proved good. When a cow has been found that did not cross back well she has been sold.

As a result of those years of concentration of type, this herd is as uniform a lot of cows as one could imagine, being large, vigorous animals with a pronounced dairy conformation.

As the success or failure of this system lies entirely with the sire's breeding qualifications and characteristics, Mr. Farmer exercises great care in the selection of his bulls. He believes in a good straight-backed animal, having a large heart girth and a good middle. In fact his present bull could be rightfully called a show animal, except that he is not so fine boned.

Back of this conformation Mr. Farmer prefers to select from a family having heavy-producing females in order that the chances for heavy production may be greater. The continued selection for these qualifications among both the bulls and the cows has enabled him to secure a 300-pound butterfat average in his herd. It should be explained, however, that had his bulls been faulty in type, production, or prepotency the concentration accomplished by inbreeding would have been as detrimental as it has so far been beneficial, for it would have established undesirable characteristics instead of desirable ones.

The most destructive field fire in California this year was one in Glenn Co., which destroyed over \$64,000 worth of grain. The most extensive fires were in Butte Co., where over 77,000 acres of brush and range were burned over.

The success that has attended California fruit co-operative organizations has induced the fruit men of Oregon, Washington and Idaho to consider the scheme of copying the California plan.

Wine grapes and table grapes brought an aggregate of \$3,550,000 in San Joaquin county; \$1.40 per crate is the average price received for Tokays.

637.1 Pounds Butterfat in 301 Days.

has been produced by Empress Lass under dairy conditions. Still working. Her sons and grandsons are from big producers of show type. Prices right.

LOCKEFORD STOCK FARM

N. H. Locke Co., Props.

Breeders of Jersey Cattle and Chester White (O. I. C.) Swine.
LOCKEFORD, San Joaquin Co., CAL.

MONTELENA HERD

Large Yorkshire Swine

THE IDEAL HOG
FOR THE
PROGRESSIVE FARMER.



MONTELENA BIG DICK,
First Aged Boar and Reserve Grand Champion.

Won 9 prizes
With 8 entries
at Sacramento.
Young stock
for sale—both
sexes.

A. L. Tubbs Co.
Calistoga, Cal.



Here's a Real Herd Header

On his dam's side, all his sisters (4) are in the A. R. class. So is his granddam and great-granddam. In fact, every female in the BELLA VISTA HERD is either in the A. R. list, or qualifying for same. The last to enter has made as high as 42 pounds milk as a 2-year-old.

IMPERIAL LORD KITCHENER has left some good males and females, and to continue the good work of production a young bull has been secured to use on his daughters. This bull is GLENBURNIE BOY, whose dam as a 3-year-old made 13,559 pounds milk and 684 pounds butterfat, and her dam 654 pounds butterfat.

Consumers are becoming more and more critical daily about their milk. Color, quality and flavor are the requirements, and the Guernsey sire has no equal in transmitting these qualities. To be a success such a sire must be a producer and from a line of producers. BELLA VISTA Bulls have this breeding. Address for this line of breeding, or for Hampshire swine.

J. W. HENDERSON,

1st NATIONAL BANK BLDG.,
Berkeley, California

Veterinary Queries and Answers.

[Answered by Dr. H. B. Winttingham, Petaluma, Cal.]

[Subscribers wishing an immediate reply should send money order for \$1.00. No charge for questions answered through this department. Name and address of subscriber must accompany each query.]

SOW HAS NO MILK.

To the Editor: A week before farrowing, a sow refused to eat and lay around on her stomach. Six pigs came in the forenoon. Two came at night, mixed in the after-birth. Pigs all alive, but the sow has no milk. She ate fairly well the day after farrowing. Then discharged a substance like afterbirth and refused to eat again. She was constipated. Drinks very little water, walks around, and notices pigs.—T. P., Chico.

The trouble is congestion of the udder. Hot compresses and camphorated oil well rubbed in are of benefit in these cases when taken fairly early.

URINE DRIBBLES.

To the Editor: A three-year heifer came up from the Valley in spring time and didn't shed her hair. She calved late in spring. In July we took the calf away from her. We fed her alfalfa hay at night and green alfalfa pasture in daytime. The last two or three weeks she seems weak in the back and her urine dribbles all the time. We gave her a number of simple remedies.—C. E. S., Murphy.

This is inflammation of the bladder. Give one dram doses hexamethylamine three times a day.

SCUM ON EYE.

To the Editor: Do cows have pinkeye? Mine have been troubled in one eye. A scum comes over it and they don't seem to see for a couple of weeks. It then goes away except a small spot. They seem to suffer, keeping the eye closed at the worst stage, and it waters a great deal. The younger they are the worse it seems to affect them.—W. D. C., Laton.

There is a disease of cattle resembling pinkeye; for this use a few drops several times a day of a 25 per cent solution argyrol.

DOG HAD SORE MOUTH.

To the Editor: My dog died a few days ago. While sick, he would sneeze several times, especially after lying down. One day he had very loose bowels, and when I noticed he was not well, I found some white thick slime in his mouth. There was matter between the lower gums and the lining of his mouth. I swabbed it with boric acid and gave him a physic. He would not eat but drank much water. He was perfectly gentle while sick.—S. T. Puyallup, Wash.

This was Black Tongue or Infectious Sore Mouth. A cure is questionable in these cases.

HOGS LAME BEHIND.

To the Editor: Female hogs of different ages become lame in hind quarters, seem in great pain, have good appetites but growth retarded. No swellings, hips slightly sunken. Feed tangle, rolled barley, and alfalfa.—H. E. M., Yucaipa.

This is rheumatism. Give 10 grains of each of the following in the feed twice a day: hexamethylamine and sodium salicylate.

CALVED TOO SOON.

To the Editor: A cow lost her calf Nov. 6. She was due to calve Nov. 24. The calf when it came looked as if it had been dead two or three days. The cow did not clean at all and is giving only two quarts per day. She is young healthy, and in

good condition, has alfalfa hay and runs on green pasture. She bloated once about six weeks ago. She used to give over six gallons per day.—C. T. M., Hughson.

This was infectious abortion. Have her vaccinated for this. Give her as a tonic one tablespoonful Fowler's Solution and one teaspoonful fluid extract nux vomica twice a day.

COW PASSES BLOOD.

To the Editor: My young cow eats freely and does not appear sick, but her bowels are rather loose and she passes quite a quantity of blood with each evacuation. She is fed oat and barley hay mixed, beats middle of the day or pumpkin with a mash mornings and evenings consisting of 2 parts bran, 1 part soy bean meal and 1 part alfalfa meal.—J. E. B., San Lorenzo.

This is Johns Disease. Try giving four 30-grain sulpho-carbolate tablets three times a day.

SWELLING ABOVE EYE.

To the Editor: I have a cow that has a large lump from her horn to her eye, about three inches long. It seems hard and has been lanced once with little blood and no pus. She eats well but seems a little droopy, gives fair amount of milk. The lump seems hard and is affecting her eye to some extent. Has been there about three months.—A. E. C., Los Angeles.

Have this tumor removed.

HOG DOES NOT FATTEN.

To the Editor: One of my hogs does not get very fat and vomits what looks like ashes. Seems to eat all right. I feed acorns and rolled barley with middlings.—S. R., Morgan Hill.

Try feeding barley without acorns to this pig.

SWELLING ON JAW.

To the Editor: A heifer has been fed alfalfa with some foxtail. A lump under the jaw is now swelled on one side up to the ear. She has been fresh about three months and has failed from three gallons to about one gallon of milk per day.—G. M. N., Henleyville.

Have this abscess opened.

LAST CUTTING ALFALFA FOR HORSES.

To the Editor: Several of my neighbors refuse to feed the last cutting of alfalfa to horses, claiming it will sometimes kill them.—G. M. H., Ripon.

Will have no bad effect if dried and fed the same as other cuttings.

COW'S TAIL PARALYZED.

To the Editor: My cow has lost the use of her tail. Her calf is two months old. The tail has been paralyzed about a month.—T. B. M., Seeley.

Rub in tincture of iodine daily on the tail head for one week.

SHEEP NASAL DISCHARGE.

To the Editor: My sheep have a discharge from the nose.—R. T. W., Lodi.

Probably lung worms. Consult the State Veterinarian, Sacramento:

WHITE DISCHARGE.

To the Editor: A heifer 1½ years old comes around about once per week, at the same time discharging

a white substance.—W. D. C., Laton. This looks like abortion. Better have your herd vaccinated and avoid future trouble.

KAFFIR CORN CONSTIPATING

[Written for Pacific Rural Press.]

Kaffir and brown Egyptian corn constipate stock and poultry but milo and the white sorghums do not, as determined at the Kansas Experiment Station according to Prof. B. A. Madson of University Farm, California. No experiments on this line have been closely watched at Davis except that Prof. J. E. Dougherty has found kaffir constipating to poultry. Therefore more laxative feeds should be given along with kaffir.

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Raising Poultry for Profit

POULTRYMEN IN POMONA JOIN THE STATE ORGANIZATION.

[Written for Pacific Rural Press by
Susan Swaysgood, Pomona.]

Things are happening in the south lately among poultrymen. First the Van Nuys Poultry Association holds a strictly utility show in Los Angeles just to show what a small colony of people can do when they get together. There were some very good birds in the show, too, and some of them were good from a fancier's standpoint, yet all had been judged by the Hogan system as utility birds. One man claimed to have a couple of Reds that laid two eggs in one day and a Leghorn man made the same kind of a claim, and both claimed they were not boosting either.

Then on Tuesday of this week we had Colonel Weinstock in Pomona to talk on the organization proposed by the State Market Director. Everybody present, and there was a good meeting, seemed to be in favor of organization after Mr. Weinstock explained matters. A good number of those present joined. Those who did not join then have it under advisement, and will join later. We can't afford to be slower than our northern brethren in the poultry work; and the Colonel told us that in the northern part of the state they had a million and a half hens signed up. If we can reach all the people engaged in raising poultry in this part of the State I feel sure we can sign up for just as many hens as the north; and that will sure make "some egg market."

If something of the kind is not done in all states the poultrymen may just as well quit and be done with it. With all kinds of feed going up and the egg market falling five cents at this time of year, things can't be held even. Organization and proper distribution of the products will do away with these unreasonable attempts on the egg and poultry markets made by women who do not know the first thing about the cost of production. All they know is to attack perishable food for their own selfish ends. There are times when I hate to acknowledge being a woman, for the bulk of women have about as much reasoning powers as a ten-year-old boy. If they must boycott things why don't they tackle the feed question—flour and such things? A real good fast might do some of them good; anyway they would know how the fellow feels that fasts from necessity. At present prices for feed it costs more to produce eggs than it is possible to get for them at regular market quotations, and give the labor for nothing. With wheat at normal figures the producer would make more money with eggs at twenty-five cents, because he would not have to count the kernels. It takes feed and lots of it to produce winter eggs, and if these meddlesome women were forced to eat stale eggs for a few winters, just as formerly all had to do, they might be able to appreciate the value of a fresh-laid egg. My advice would be to stop producing

winter eggs until people do learn to appreciate them and are willing to pay for them. To carry hens over the winter without trying for eggs means a great reduction in the cost of wintering. Of course they must be fed and kept in condition, but this can be done with coarser foods that do not cost so much as the feeds necessary for molting and egg production.

But we will hope for the organization to go through and help solve our problems, as I feel very sure it will do in this state.

BRITISH COLUMBIA RE- QUIRES MARKING.

The British Columbia Government recently passed what is known as the Egg Marks Act, governing the sale of eggs in this Province. The act provides in part that infertile incubated eggs must be sold as "cooking eggs." Wherever they are displayed, a card bearing those words in 4-inch letters must be placed on the receptacle holding the eggs. Any and all eggs which have been preserved in water glass, lime water, salt, bran, or anything except cold storage must be "stamped" plainly with the word "preserved." The word must be in Gothic lettering.

When provincial fresh eggs are sold they must have four-inch lettering on a card attached to the receptacle with the words "B. C. Fresh." Provincial cold-storage or preserved eggs must also be carded "B. C. Cold Storage" or "B. C. Preserved." If the eggs come from any other Province, they must be placarded "Alberta (or Saskatchewan) Fresh" or "Alberta (or Saskatchewan) Cold Storage"; if from the United States, "U. S. Fresh" or "U. S. Cold Storage."

All poultry keepers or dealers selling eggs at wholesale are required to mark true descriptions of the eggs on the outside of the receptacles. This marking, however, need not be 4 inches high. The same words must be used, as "B. C. (or Alberta) Fresh" or "B. C. (or Alberta) Cold Storage." All Chinese eggs must be stamped in Gothic lettering. All stores or shops using Chinese eggs for food or manufacturing purposes must have signs printed and displayed in 4-inch letters: "Chinese Eggs Used (or sold) Here."

All poultry keepers selling eggs at wholesale in dozen cartons must mark the cartons in plain lettering, with the words "U. S. (or Alberta, or B. C.) Fresh" or "U. S. (or Alberta, or B. C.) Cold Storage." Eggs not fresh enough for boiling purposes are to be sold as cooking eggs.

PICKING FEATHERS FROM DUCKS AND GEESE.

[Written for Pacific Rural Press by
W. D. Guthrie.]

The only quick way to get the feathers off from a duck or goose, according to Joe Diar of Placer county, is to dip it in hot water like you would a chicken. Then wrap a gunny sack around it, and let it steam five minutes. Then you can pick off the feathers and down together.

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Fish Meal for Poultry.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

The feeding of fish meal to stock and poultry is not of such recent date as many suppose. As early as 1864 a mixture of fish and meat meal was made along the Atlantic Coast and was used very freely in Maine, though at that time there was no method of getting it on the market while fresh and clean. A great deal of the fish used was just awful offal that had been allowed to partially decompose before being used at all. This naturally got fish meal in bad repute; and it is only during the last few years that with improved methods of manufacture, fish meal has been at all popular on this Coast. About four years ago I made a test of two sacks furnished by a San Francisco firm; and found that it gave an increase of eggs over beef-scrap; in fattening broilers it made a gain of half a pound with each bird over beef-scrap; and it did not make either eggs or meat of the poultry taste fishy. I wrote the firm that it was very satisfactory and if they kept up the high standard it would be a boon to poultrymen. As freight rates on animal foods of all kind are quite high from San Francisco I naturally bought what I needed in my home town. But of late fish meal has been so improved in quality owing to newly discovered methods of handling, that it is not any trouble to get a good brand now almost anywhere. The only fault I find is that with increased facilities for using up all waste fish while it is fresh and wholesome, the prices keep up just as high as beef-scrap, or as fish meal when it was not being used in quantities.

If manufacturers could only be made to see that now, when the prices of all feeds are so high, is the opportunity for them to make fish meal a standard poultry food by lowering the price, they would be doing themselves and the poultrymen a good turn.

Just as long as the prices are about the same, a poultryman argues that he is nothing in pocket by using a food with which he not so well acquainted. There is, however, one advantage the poultryman overlooks in this matter, and that is the digestibility of a food. Good beef-scrap, free from hide and hoof and other filling, is about on a par with good fish meal in its digestibility, but poor grades of beef-scrap, and there is more of this kind on the market than the good kind, is very hard to digest, and the fowls pass it through them without having received any benefit. It is not what a hen eats, but what she digests that goes to nourish the body and produce eggs. Fish-meal has also one other thing to its credit; it does not cause so much liver trouble with fowls as does beef-scrap.

The best way to do is to combine the allowance of animal food, making it half fish-meal and half beef-scrap; this is specially so when the hens have been fed all beef-scrap for animal food.

If a poor brand should be fed too freely it would affect the flavor of the eggs, but with real good pure fish there is not so much danger; at any rate if a man is feeding ten per cent of animal food, he can safely make it half fish meal and gain by the change. If the protein contents of the fish-meal and beef-scrap total 75 per cent, ten per cent of this will make a fair percentage of animal food, and you never need be afraid to use that much animal protein; the balance will be gotten from the grains and will figure as vegetable protein. Among vegetable proteins none stands higher than alfalfa and soy bean meal; so these must not be fed in large quantities, except when the alfalfa is green, as it then contains a great deal of water. In the dry form, it must be fed in reasonable amounts and always with other feeds.

POULTRY TROUBLES.

[Queries answered by Susan Swaysgood.]

Hens Look Droopy.—My chickens had diarrhoea about seven months ago, look droopy and pale and have scaly legs and feet; once in a while one dies.—Mrs. B. V. W.

I would not be surprised if your hen house is afflicted with mites. When hens are pale and droopy and have scaly legs and feet it is suggestive of gross neglect somewhere. Mites suck the blood of hens at night and naturally the hens look pale afterward; and it's just as natural for them to die when all the blood has gone.

Begin first with your hen-house; clean up all refuse and burn it, then get some good commercial spray or crude oil and carbolic acid and spray the house thoroughly twice at least; put ten drops tincture of iron to one quart of water once a day in the drinking water for the hens and feed them as liberally as you can. For the scaly legs, wash them off with good hot soapsuds, then mix a little lard and sulphur together and rub on the legs and feet; but unless you keep the house clean it is no use doing anything else. This is a case where cleanliness will just about

make the quickest and best cure you ever saw.

Hens Laying Poorly.—I have one hundred R. I. Red hens. I feed dry mash, rolled barley, middlings, and whole wheat in the morning, two gallons; at night, same quantity of soaked oats and cracked corn. Is that enough food for the number of fowls mentioned? I give all the green feed they can eat at noon; keep pens and all surroundings clean and get only about 7 eggs a day. The hens are still molting. Am I feeding enough, and why don't they lay?—A. F. R.

Your morning feed is rather a mix-up, or I fail to understand. Rolled barley, middlings, and whole wheat don't fit in at all. You had better change off and feed your cracked corn and whole wheat together for the evening meal, when two gallons would be plenty to give the hens something to grind on till morning. Then you could feed your soaked oats and barley which should be soaked too, and mix your middlings in. If you drain the water away there will still be moisture enough to cause the middlings to adhere to the grains. Yes, I think you are feeding enough; perhaps a little extra bone would help your hens through the balance of the molt. I don't know anything about the mash you mention; but molting hens require more protein and ash than laying hens. There is another point to consider; and that is the age of the hens. Old hens take a longer lay-off during the molting term than young ones; so that we can't reckon anything on that; but get some granulated bone from the feed store and put it out where the hens can help themselves and they will be much benefited in a short time.

OAKLAND POULTRY SHOW.

The annual poultry show held in Municipal Auditorium at Oakland last week was the largest and best attended of the many this association has given. All poultry classes were well filled and the pet stock department was also well represented and full of interest to the younger folks.

The large number of new exhibitors was a matter of comment, showing that the industry was claiming new interest among outsiders. Our friend W. A. French of Stockton was on hand, showing in several classes the kind of birds that drew many firsts and seconds.

The Oakland show has for years been one of the best in the State and this year more than held its own.

Poultry Breeders' Directory.

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THOROUGHbred WHITE HOLLAND and Bourbon Red Turkeys. Toms \$5; Hens \$2.50. Old White Holland Toms, \$7.50. Pearl Guinea, \$1 each. E. A. McKinley, R. D., Ukiah, Cal.

HART'S BRONZE TURKEYS AND EGGS—Large reduction in price of stock. Order now for fall delivery. Free Circulars. Albert M. Hart, Clemente, Cal.

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Mrs. Best's Letter.

Dear Friends: With Christmas just around the corner, those of us with families (and I hope that includes all of us) are very busy with thoughts of Christmas giving.

For the little people of the household, there are so many inexpensive toys and games that the problem of making them happy at not too great an expense is easily solved.

The stores show wonderfully attractive doll bedroom sets made of pasteboard and covered with cretonne that could be worked out at home to advantage, and at almost no expense.

The doll houses that sell from \$25 upwards can be copied at home by using dry goods boxes, and odds and ends of materials for wall paper and curtaining and the making of the furniture could be an evening's task for one of the big boys of the family.

The knitted or crocheted tam-o'-shanter caps and scarfs in bright colored yarns make attractive and useful gifts for both little and big girls, and a scarf of plain color is very useful for a man. If desired for dressy use make it of white silk, to be worn as a protector for the dress shirt.

Hand-made sweaters in soft colors are having a great vogue, but they need to be carefully made, or they stretch out of shape. Many of them are almost sheer and dainty enough to seem like baby sweaters—these are for wear in the house for a little extra warmth.

If you have a baby to remember, the quilted satin padding makes very warm as well as handsome crib or carriage covers—it comes in light grounds with flowered patterns, and needs only to be lined and bound with ribbon, and is then ready for use.

The painted flower-pots are being shown in the gift shops, and most attractive ones can be made at home. You use the ordinary pot or jar, and apply one to three coats of paint of a bright, attractive color. If you use yellow, stripes of black are most effective, or a conventional design can be drawn on one side. After the painting is done, a coat of varnish is an addition.

A most charming gift is a potted hyacinth—the color of the hyacinth being carried out in the pot.

The ordinary white cloth glove with the gauntlet, which can be furnished for ten cents, can be made into a festive article by covering the gauntlet with gay cretonne. This makes an attractive gift for a dainty bride, who does not even dust with bare hands.

Cretonne has so many uses that I could talk on indefinitely. It is lovely for pillows and for trimmings in dresser scarfs and bed covers.

A very new use for it is the covering of tin boxes for either candy or cookies. Usually a striking design is chosen, preferably with black lines, and the boxes range in size from a marshmallow box to a soda cracker box. This last size, filled with goodies, would be a lovely gift for a girl away from home at school.

One of the newest things of the winter, and quite the most popular, are the beaded bags. These come in the stores and can be duplicated at home at much less cost. Heavy silk

is usually used, and if you are not clever at original designing, you can have stamping done at any art store. The sewing on of the beads is simple, and the finishing is also easy. The bags are usually lined with a contrasting color, and many times have no bottom set in—just drawn together snugly at the bottom, and finished with a tassel of beads. Ribbon of the same color as the outside silk is used to draw the bag together.

Rosabella Best.

MAKING PEANUT BUTTER.

Editor Home Circle: Please give me a simple recipe how to make peanut butter.—Mrs. E. W. S., Santa Rosa.

With the aid of a small meat-grinder, anyone can make good peanut butter for home use. The peanuts may be roasted before or after shelling, but in either case the oven should be only moderately hot, and the nuts should be stirred frequently. After roasting, rub off the skins and screen out the small hearts. In grinding, use the finest plate on the grinder. If the pulp is too coarse after one grinding, it may be run through a second time. It is not necessary to add anything, but a little salt to the butter; but if desired, it can be thinned by the addition of a little olive oil. It keeps beautifully if put in glass jars, and sealed with either oiled paper or paraffine.

WHY DOES JELLY SOUR?

Editor Home Circle: Replying to the question, "Why does my jelly sour?" I have to say that I find from the experience of the many housekeepers whom I meet in my work that this trouble comes from keeping jelly in a place that may be more or less damp. I remember distinctly one lady who for years had trouble with her jelly becoming sour. Then she decided to put it in a closet near the chimney. This was thoroughly cleaned and fumigated, and the jelly placed on the shelves. She was no longer troubled with the jelly becoming sour. I wish the lady who asked this question would try covering her jelly in the following manner: The moment the sterilized glasses are filled with the boiling jelly, pour over them melted paraffine, which has been heated to the smoking point. Pour this on till it comes up to the top and just over the edge of the glass. I tried this last season and am delighted with the way my jelly is keeping.—Lillian D. Clark, Agricultural Extension, University of California.

THE HOME CIRCLE

CANE OR BEET SUGAR.

Editor Home Circle: Replying to your inquiry regarding the use of beet sugar or cane sugar in cooking, I have to say that the experience of successful and thoughtful housekeepers shows that the results in the use of either kind of sugar are the same. The process of making the sugar from either cane or beet is similar. I heard Professor Isabelle Bevier of the University of Illinois state that she had carried on many experiments testing out these same questions. A lady in Sonoma county, who had made large quantities of very fine jellies, decided to test out this question of cane and beet sugar. To do so she sent to a refinery, making only beet sugar, buying a 100-pound bag, and used this in making her jellies. She could detect no difference whatever between the beet sugar and the cane sugar.—Lillian D. Clark, Agricultural Extension, University of California.

EFFICIENCY IN THE KITCHEN.

A little intelligent thought, without the expenditure of a dollar, on the arrangement of the kitchen can greatly lessen the work in the farm home.

A kitchen as a work-room should have three centers; the cooking center, the mixing center, and the work center. The stove is the chief article of the cooking center, and all pans, kettles, etc., should be as near as possible. This group should be very near the sink, which is the principal feature of the work center. Here should be found paring knives, dish pans, cleansing materials, and the like. The mixing center should have near at hand the mixing bowls, egg-beaters, measuring cups, rolling pin and kneading board, with the staple supplies used in cooking, as flour, sugar, and the like.

Having these three centers furnished with all the necessary articles of each kind of work, will save many unnecessary steps and many minutes in the course of a day.

MEAT SUBSTITUTES.

Often for dietary reasons, as well as expense, the meat allowance must be cut down. Substitutes which lend variety and produce the same energy-producing qualities are the following: whole wheat flour, dried beans, peas, lentils, walnuts, peanut butter, oatmeal, cracked wheat, cheese, eggs, olive oil, macaroni, and rice. These are some of the many foods which simply, or in com-

bination, make a wholesome diet. Dried fruits and nuts are valuable additions to a well-balanced diet.

FARMERS SELL OWN TURKEYS.

[Written for Pacific Rural Press.]

A distinctively new method of selling turkeys has been practiced this season by O. L. Linn, Marketing Agent for the Stanislaus County Farmers' Union.

A small room on one of the business streets of Modesto was rented as an assembling point, where all of the farmers could leave their turkeys, either alive or dressed. Each farmer's fowls were separately tagged when received, for identification purposes. If dressed, a memorandum was made of their weight; if alive they were killed and dressed by men employed especially for that purpose, at so much a bird, and weights recorded on each tag.

Each morning before Thanksgiving, the turkeys received the day previous were displayed and sold to buyers from San Francisco, at prices which varied according to the quality of the bird and the market in San Francisco. These prices, however, were much higher than would have been received had the buyers been compelled to go by auto through the country districts to do the buying. Also those farmers who raised the best turkeys received the most money as the quality of each bird was clearly in evidence when dressed.

It is quite likely that as a result of the success of this venture it will be practiced again during the Christmas and New Year's marketing season.

PUFF PASTE.

Half a pound of flour and one-half pound of butter. Wet the flour with about one-half cup of cold water; work it smooth, and roll it about one-third of an inch thick. Wash all the salt from the butter, working the water well out, and make a cake of it 7 inches long and wide; put in a cool place while preparing the flour paste. Put the butter in the middle of the paste, and fold it all over the butter. Roll it out 3 times one-third of an inch thick, folding it like a sheet of paper. Make in a cool place.

AUNTIE'S JOB.

"Now we'll play zoo," said Willie, "and I'll be the elephant."

"That will be fine," said Aunt Mabel; "but what will I be?"

"Oh, you can be the nice lady what feeds the elephant with peanuts and candy," explained Willie.

SPICE OF LIFE.

Better late than never—Husbands.

It is not safe to judge a man's courage by the tone of voice he employs when he speaks to the office boy. Wait until you hear him address his wife.

Mr. Jones—I move that Mr. Smith's resignation be accepted. The Chairman (surprised)—What resignation? Mr. Jones—The one he ought to send in.

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EARTH'S LAST PICTURE.

When Earth's last picture is painted, and the tubes are twisted and dried,
When the oldest colors have faded, and the youngest critics have died,
We shall rest, and faith, we shall need it—lie down for an aeon or two,
Till the master of all good workmen shall set us to work anew.

And those that were good shall be happy, they shall sit in a golden chair;
They shall splash at a ten-league canvas with brushes of comet's hair;
They shall find real saints to draw from—Magdalene, Peter and Paul;
They shall work for an age at sitting and never get tired at all!

And only the Master shall praise us, and only the Master shall blame,
And no one shall work for money, and no one shall work for fame;
But each for the joy of the working, and each for his separate star,
Shall draw the thing as he sees it, for the God of things as they are!

—Rudyard Kipling.

ONE, TWO, THREE.

"One, two, three, four, five, six," recited Jerry, proudly. Jerry was six, and had been to school a week.

"I wish I could count like Jerry," said little Richard to his mother. "If I could just count to three, because I'm three years old!"

"Why, of course you can learn that," said his mother. "It's very easy to learn to count three."

"How, mother?" asked little Richard.

"This way it goes—one, two, three," said his mother. "See, your tricycle has one, two, three wheels. Now run out to play and see if you can find anything that has one, two, three parts."

"That will be hard, I think," said little Richard.

"Just you try it," said his mother.

So off frisked little Richard in his little blue rompers and his big blue hat and his warm blue coat, for the days were cool.

Down the meadow lane he scampered first. "One, two, three," he said to himself; "one two, three," but he did not see anything that he could say "one, two three," about. The tall stalks of golden-rod along the way were brown from the nip of Jack Frost, and the dry grasses rustled by the stone wall, that was all.

Little Richard began to climb the bars at the end of the lane into the meadow, and that very minute he discovered something.

"One, two, three!" he shouted. "The bars are a one, two, three." And sure enough there were one, two, three wooden bars across the lane that led into the meadow.

Over in the meadow there did not seem to be any one, two, three's at all. There were just green grass and clover leaves.

"Oh," said little Richard, "I think Bunny would like some of this nice clover."

So he picked a great big handful of clover leaves for Bunny, and that very minute he discovered something.

"One, two, three!" he shouted. "The clover is a one, two, three."

And, sure enough, there were one, two, three little round green parts to every single clover leaf.

Just then a brown chipmunk ran along the stone wall, and began to chitter, chatter.

"I know," said little Richard, "you don't want me to get any nuts. But I know where the nut trees grow as well as you do."

Over the wall went little Richard into the woods where the hickory-nut trees and the butternut trees and the chestnut trees grew. There stood a big chestnut tree. Its branches were dotted with green burs like prickly round balls, and the ground beneath was sprinkled thickly with brown and green burs. Most of the brown burs were empty, for Jack Frost had nipped them open before they left the tree, and the nuts had tumbled out. Little Richard began to hunt among the fallen leaves for the little brown chestnuts, but he looked and he looked, and he could not find one.

"Greedy little squirrels," he said, "you have taken them all. I must come out earlier to get ahead of you."

He was so interested in hunting for chestnuts that he had forgotten all about one, two, three. But that very minute he discovered something.

"One, two, three!" he shouted. "The chestnuts are one, two, three."

And, sure enough, there were one, two, three brown, glossy chestnuts all nestled snugly side by side in a half-open bur with a lining like brown satin.

So he picked up the bur very carefully in order not to prick his fingers, and started for the house to show his mother the one, two, three clover and the one, two, three chestnuts, and to tell her about the one, two, three wooden bars.

On his way he stopped at the barn

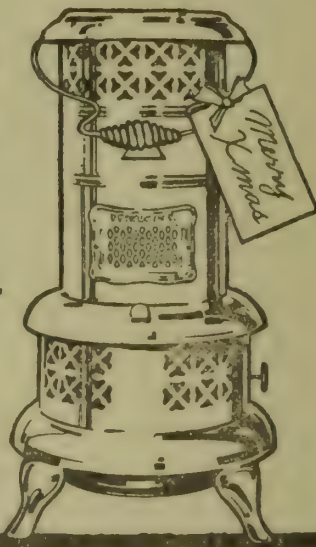
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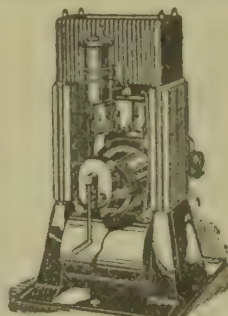
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to feed Bunny the clover. Close by the door-sill lay a yellow wasp, numb and nearly dead from the chilly fall air. Richard bent to pick it up, and that very minute he discovered something.

"One, two, three!" he shouted. "The wasp is a one, two, three."

And, sure enough, the wasp's little body was divided into three parts just as if a thread had been tied around it in two places.

Little Richard ran and gave Bunny his clover, and on his way out he tumbled over the milking stool. And that very minute he discovered something.

"One, two, three!" he shouted. "The milking stool is a one, two, three."

And, sure enough, the milking stool had three legs.

And before he had hardly picked himself up, he heard a little faint "mew, mew," from the hayloft.

"What's that?" said little Richard. "I think it's my kitty cat calling me."

So up the narrow stairs climbed little Richard into the great, dim, dusky haymow full of sweet-smelling hay.

"Mew," he heard again, and he stumbled over the hay to the place where the sound was.

"Oh, oh!" cried little Richard. For there was Mrs. Kitty and three dear little kittens.

Richard could hardly wait 'till reached the house. "O mother," he called, "come and see the new kitties." And he forgot all about one, two, three.

But a little later when Jerry came home from school and began to count so proudly, little Richard remembered.

"I can count three," he said. "O mother, lots of things are one, two, three."

Then he showed her the clover leaf with its three little green parts, and the prickly chestnut bur with its three little brown chestnuts, and the yellow wasp with a body in three little parts, and he told her about the three wooden bars, and the milking stool with three legs.

"That's just fine," said his mother. "And I know another one, two, three that you saw in the barn up in the hay."

"Oh, oh, yes," cried Richard. "I know one, two, three little new kit-

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tens, the little black one and the little striped one and the little gray one."

And, sure enough, there were one, two, three little kittens up in the bay with old Mrs. Kitty.

"It was such fun, mother, to learn to count one, two, three," said little Richard.—Emily Rose Bent, in the Mother's Magazine.

CARE OF THE HANDS.

As the cool days come on, more care of the skin is necessary if it is to be kept in good condition. An inexpensive lotion, composed of one ounce each of alcohol, glycerine, rose water and witch hazel, with half an ounce of bay rum, is excellent to use. These ingredients should be put in a bottle, and the juice of a lemon added. It is fine to use after the weekly wash, when the hands are dry and shiny from soap, as the acid of the lemon kills the effect of the soap, and the other ingredients are healing.

There are hand ailments where this lotion is more of an irritant than a comfort. Sometimes a deep crack comes near the nail and refuses to heal. For this, nothing is better than camphor ice, and it can be made at home. Take one ounce of gum camphor, two ounces of mutton tallow, and one ounce of vaseline; melt the tallow over the fire and add the crushed camphor, stirring constantly to prevent burning until the camphor is melted. Remove from fire and add the vaseline. Stir well and put in small jars or glasses with covers. When applying, rub well into the skin.

CIDER IN GOUT.

A bulletin issued by the Academy of Medicine, Paris, reports eight cases of gout in which cider was used with decided benefit. It is said to reduce the frequency of the attacks and modify the intensity of the pain. A mild cider, well made, but not too hard, was used.

Good Health.

[By H. E. Pastor, M. D.]

The Dope Habit.

Doping has come to be a necessary part of our daily existence, it seems. Temperate, rational living is too tame in this strenuous age. The monotony of life must needs be relieved. Those among us who count ourselves abstemious dope up with coffee and newspaper excitement in the morning and sooth our wrought-up nerves with strong tea, or a pipeful of tobacco at night, and, mayhap, take a mild sleeping potion before the sweet restorer, Sleep, brings oblivion. In extreme cases our men load up with alcohol in various seductive forms through the day and try to offset the effects with "bromo" or worse at night; while women fire their imaginations with lurid motion pictures of things that never happened, and then hasten home to quench the conflagration with copious draughts of tea, etc.

We are rapidly becoming a race of neurotics, surfeited with excitement-seeking, or with the pleasures of gormandizing and guzzling, and the befogged brain and worn-out nervous system seek relief by dosing up with Doctor Bunk's Headache Powders. Now, there isn't a headache powder on the market that doesn't contain one or more dangerous drugs. Nearly all are heart depressants, products of coal-tar distillation, as phenacetine, antipyrine, or perhaps acetanilid, or perhaps all combined. These drugs undoubtedly remove pain, but do so by lessening the reflex action of the spinal cord and deadening the sensibility of the sensory nerves. If acetanilid, for instance, is taken in overdoses, as it is sure to be if this drugging habit is long-continued, it breaks down the haemoglobin (red coloring matter) of the blood and thus destroys its oxygenating function, or may even cause death by overdepressing the heart's action. The more you take of these drugs the more you have to take to get the desired effect—and the last state is worse than the first.

Don't become a victim to drugs—drugs of any kind. True, drugs have a place in the treatment of disease, but they are not the whole thing, as many unsophisticated people seem to think. They are not even the important thing in correcting bodily derangements. Let drugs be the last thing you think of instead of the first. Headache powders especially are a delusion and a snare. Their labels and literature are utterly misleading. If you are troubled with headaches ascertain the cause and remove or avoid it. Don't become a drug fiend.

The Prune Has an Inning.

This is prune week, which should interest everybody, for everybody should eat prunes whether they grow them or not. People generally would be much better off physically if they ate more prunes and less of some other things too numerous to mention. As a nutritious article of diet the worth of the prune is recognized wherever people are civilized enough to know a good thing when they see it. Its medicinal value, of

which only it is permitted the writer to speak here, is that of a mild but efficacious laxative, and in this respect the prune is second only to the fig as a natural fruit laxative. Its bland and palatable qualities admirably adapt it to cases of constipation in children, even babies being benefited by occasional teaspoonful doses of the juice, which may be alternated with like doses of the juice of the orange, of which some mention was made in this column a few weeks ago. Wholesome as the prune is generally conceded to be, it should not be partaken of too freely, as, eaten to excess, it may induce

flatulent colic, owing to the indigestibility of its skin. The prune has recognition in the U. S. Pharmacopoeia, serving as an ingredient of the "Confectione Sennae," of which it forms 7 parts in 100, to 10 of senna. Chemically speaking, the prune contains sugar, malic acid, pectin (the "jelling" principle), albumen, and certain salts. But, after all, read reader, the benefit you will derive from the prune depends more on eating it regularly, though in moderation, than on a whole volume of technical verbiage. Pay homage to the prune by placing it on your menu every week in the year.

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SAN FRANCISCO.

San Francisco, Dec. 6, 1916.

WHEAT.

The Eastern market has shown some easiness, but is picking up on reports of secret buying for export. This market is very firm in comparison, with light offerings and considerable difficulty in bringing supplies from the north, but prices are unchanged. [First-hand prices on strictly first-class grain, San Francisco.]

Sonora wheat\$2.75@2.80
Northern clubNone offered
Calif. club, cti2.65@2.75
Northern Bluestem2.85@3.00
Northern RedNone offered

BARLEY.

The increase in "dry" territory is causing the brewing trade to hold off, and high prices are also curtailing the movement of feed, transactions locally being of little importance. Some poor feed has been offered recently at lower prices, while seed barley is very firm.

Seed, cti.\$ 2.50
Shipping, cti.\$2.35@2.40
Choice feed, cti.2.20@2.32

OATS.

There is still a demand for seed oats, and Texas red are again quoted to arrive, while black seed are higher. Red feed oats are in very fair demand, and good stock is firm.

Texas Red seed, cti.\$2.85@3.00
Red feed\$1.80@1.85
White2.15@2.20
Black seed3.50

CORN.

There is still practically no Eastern corn here, and prices in primary markets do not attract local buyers. California yellow is in active demand as quoted. Large crops of Egyptian are reported in some quarters, though much of the crop has been slightly damaged and is hard to sell at the quoted range. Demand, however, is strong.

[First-hand prices on strictly first-class grain, San Francisco.]

Eastern Yellow, ctiNone here
California2.40@2.50
Milo MaizeNominal
Egyptian, new2.25@2.35

BEANS.

The new crop is moving out of growers' hands with unusual rapidity, notwithstanding the firmness of prices, and buyers have so far been more concerned about supplies than the price paid. The car shortage greatly hampers shipments, and the movement would otherwise be even larger. Whites appear to have reached the top level, at least for the present; but the advance on the colored varieties continues, first-class red kidney beans having jumped sharply, while smaller advances are noted in pink and cranberry beans. Tepary beans have not advanced, and are extremely cheap as compared with other kinds. It looks as if some educational work would be required to get them started with the trade.

[On wharf, San Francisco.]

Bayos, per cti.\$5.75@6.00
Blackeyes5.00@5.10
Cranberry beans6.60@6.90
Horse beans3.25@3.50
Small Whites (south) new crop7.00@10.50
Large Whites, new crop8.10@9.50
Pinks6.50@6.80
Limas (south)6.65@6.85
Red Kidney9.00@11.00
Mexican Reds6.00@6.25
Tepary beans4.25@4.50

SEEDS.

Values for the lines quoted stand about as before, most descriptions being very scarce.

[Wholesale Prices, S. F.]

Alfalfa, per lb. (guaranteed) .18@19 c
Oregon Vetch4½@5 c
Mellilotus Indica7½c
Mellilotus Alba23 c
Bur clover, recleaned12½c

HAY.

Arrivals on the city market have dropped off again, owing to the impossibility to get cars; and most of the hay accessible to river transportation has already been moved. The same condition affects consuming markets in the country, where there is a very good demand, with great difficulty in making deliveries. Locally, the larger dealers are unable to get anything like the quantity normally required; and while the demand here is limited, the shortage has caused another rather sharp advance in prices. [Wholesale prices per ton, carload lots, San Francisco.]

Wheat, No. 1\$16.00@18.00
No. 214.00@16.00
Tame oats13.00@15.00
Wild oats13.00@15.00
Alfalfa12.00@15.00
Stock hay10.00@13.00
Straw, per bale60@.80

FEEDSTUFFS.

Beet Pulp, per ton\$27.00@28.00
Alfalfa meal, per ton20.00@21.00
Bran, per ton30.00@31.00
Oil Cake41.00@41.50
Cocoanut cake or meal31.00@32.00
Cracked corn50.00@52.00
Middlings39.00@40.00
Rolled Barley47.00@48.00
Tankage47.00@48.00
Rolled oats47.00@48.00
Rice middlings33.00@34.00

POTATOES, ONIONS, ETC.

Potatoes have been moving slowly for the last fortnight, and Salinas stock has eased off a little, though Delta potatoes are firm. Oregon stock is quite a factor in the local market at present. Onions remain steady, practically all supplies being taken from storage. Good celery is higher,

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

the bulk of the crop having been moved; while Los Angeles tomatoes find only light demand and are easier. Celery, Alameda, bunch15@20c
String beans10@15c
Lima beans8@10c
Peas, lb10@15c
Tomatoes, lugs, L. A.\$1.00@1.25
Rhubarb, lugs75@1.00
Potatoes, cti, Delta2.00@2.35
Salinas2.40@2.60
Oregon1.90@2.25
Onions3.00@3.25
Garlic, new crop, per lb.3@5c

POULTRY.

Demand from Eastern markets took up much of the stock usually shipped here for Thanksgiving, and local values were very firm up to the close, all attractive stock going at 30c. Late arrivals, however, found a slump, and prices now are too irregular to quote, as there is little demand. Chicken prices are unchanged, though Eastern hens are lower. Supplies are comparatively large, as feed prices are causing growers to cull their flocks very closely. This will no doubt result in lighter supplies of both poultry and eggs later on.
Turkeys, dressed, large, lb. .Nominal
Turkeys, live, lb.Nominal
Broilers, 18 lbs. to doz. and less, lb.26@28c
do, over 18 lbs. to doz.21@23c
Fryers20@22c
Hens, extra, per lb., colored20c
Small leghorn15@17c
Smooth Young Roosters, per lb. (3 lbs. and over)20@21c
Squabs, per lb.8@12c
Geese, per lb.16@17c
Old15@25c
Belgian Hares12@14c

BUTTER.

The outside demand has not yet reappeared, and prices have dropped a little from last week's level, though the market shows no real easiness and all offerings are readily disposed of. A renewal of shipping business is expected at any time.

	Thurs.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	35	35½	35½	35½	35½	35½
Prime 1sts	34½	34½	34½	35	35	35
Firsts	34	34	34	34½	34½	34½

EGGS.

The market dropped sharply after the holiday, and again this week, owing to an abrupt increase in arrivals. The decline brought out an Eastern demand the first of the week, and several cars went out, but there has been no further large demand from that direction. Unless more shipping trade develops soon, further declines will be in order.

	Thurs.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	44½	44½	45½	42	40	40
Sel. Pul.	38½	39	39	37	36½	36½

CHEESE.

Offerings of all varieties are light, and Y. A.'s and Monterey cheese show some firmness, but flats have eased off a little with light demand.

[S. F. Dairy Exchange prices.]

Y. A.'s fancy19 c
Fancy Calif. Flats, per lb18 c
Monterey Cheese17@18 c

Special Livestock Market Report.

San Francisco, Nov. 30, 1916.

No changes are indicated this week in our livestock quotations. The cattle market is strong, with most of the supplies from Northern California, Oregon, and Nevada. The best dairy cows go at the price of Number 2s. Sheep arrivals are mostly from packers' own feed lots, though a very few small lots are still being picked up. The hog market is firm, the supply liberal, and the quality good. Wool is practically all out of growers' hands except small lots of spring and fall wools in the San Joaquin Valley, some of which are moving at the prices quoted. Nevada wool is cleared up and next crop is being contracted at 27 cents.

[Prices paid for stock, live weight off cars, without feed or water, at Stock Yards, South S. F. Hog prices subject to seller standing one-half of all hogs condemned by government inspectors.]

Steers, No. 1	7½@7¼c
No. 2	6½@6¼c
Cows and Heifers	5½@5¼c
No. 2	5½@5¼c
Bulls and Stags	4½@5
Calves, light	8@8¼c
Medium	7@7¼c
Heavy	6½@7 c
HOGS, grain fed:	
100 to 150 lbs.	8½c
150 to 300 lbs.	9½
300 to 375 lbs.	9
SHEEP: Prime Wethers	7½
Lambs f. o. b. country points	\$5.75@6.25

Los Angeles, Nov. 29, 1916.

CATTLE: A very good demand was had the past week for all good to prime beef steers and fat cows and heifers, and the tone of the market was firmer. Under the influence of stronger markets East, feeders were offering cattle less freely and killers had to bid up full quotations to get

DECIDUOUS FRUITS.

Huckleberries are about cleaned up, and strawberries are becoming rather scarce. Casabas also are practically gone. Persimmons are in very fair supply and easier, being rather more of a feature than usual in this market. A good many pears are moving from storage. The northern apples have been slightly damaged by frost, and large shipments are being sent this way instead of to the Eastern markets, causing an easier feeling. California apples, however, continue quite firm and in good demand, and the average quality causes buyers to be very critical. Most of the stock is now in cold storage, less than 100 cars being left in growers' hands, and the storage stock is comparatively small. Strawberries, chest\$6.00@9.00
Cranberries, Cape Cod, bbl.11.00@11.50
Apples:
Christmas apples, box\$2.00@2.25

Pears, Winter Nellis2.25@2.75
Persimmons, box, dbl. layer65@.90
Pomegranates, lug75@1.00
Quinces, lug40@.50

DRIED FRUITS.

The market in most lines is growing rather uninteresting from the growers' standpoint, as the bulk of the crop is now in the hands of the trade. The general shortage, however,

ers apparently can be found almost regardless of price. Apples have taken another little jump, and are getting very closely cleaned up; while apricots are bringing as high as 16c, with practically nothing left in the country. All offerings of white and Calimyrna figs have been absorbed, and packers' holdings are running very low; while black figs are rapidly cleaning up. The prune situation is stronger than ever here, with only a very small tonnage left in growers' hands in any California producing districts. While the active buying season in the East is over, it is evident that there will be very little stock to meet the spring and summer requirements. Lake county pears are cleaning up well, bringing as high as 12½c; and peaches show a further advance.

[Net to growers, bulk basis, f. o. b. shipping point.]

Apples, new crop	8 @8¼c
Apricots, per lb. 1916	15 @16 c
Figs, white, 1916	None offered
Figs, blk	5½@6 c
Calimyrnas, 1916	None offered
Prunes, 4-size basis, 1916	6½@7 c
Pears	6½@7 c
Lake County Pears	11 @12½c
Peaches	7½@8 c

HONEY.

Little is now offered from the country, and water white extracted is about cleaned up everywhere, according to dealers. Prices are quite firm, but the only quotable advance is on dark extracted, which is in demand for manufacturing purposes, and is becoming quite scarce.

Water white, comb13@14c

Amber	8@9
Light Amber	10@12c
Water white, extraction	None offered
Light amber	6@7c
Dark	5@5½c

ALMONDS.

[Exchange prices.]

Nonpareils, lb.	20½c
L. N. L.	18 c
No. 1 Plus	17 c
Drakes	16 c
Languedoc	16 c

HOPS.

Market is dull, the increase in dry territory having made brewers very slow to buy, while the normal English demand for some 80,000 bales of Coast hops is cut off at present. Growers are showing a disposition to sell on any reasonable offer, and sales have been closed at a decline. Sacramento9@10½c
Mendocino10@11c

HIDES.

Everything in this line is very strong. No further change in prices reported.
Wet salted:
Cows23½@26 c
Light hides, 25 to 48 lbs.24½@26 c
Hides26 @29 c

HORSES.

The hay situation is embarrassing this market. Demand is light, and nothing worth mentioning has come in.
Batters, 1700 lbs. and up....\$ 250
Drafters, 1550 to 1650 lbs.150@200
Chunks, 1350 to 1500 lbs.150@175
Wagon horses, 1050 to 1350 lbs. 110@150
Green Mountain range horses, 950 to 1200 lbs.29@75

PETROLEUM.

Rd Crown gasoline, as well as naphtha and gas machine gasoline, have been advanced.
Rd Crown Gasoline, drums, etc., per gal20 c
Rd Crown Gasoline, cases, per gal28 c
Engine Distillate, drums, etc., per gal9½c
Engine Distillate, cases, per gal. 17½c
Pearl oil, bulk, per gal9 c
Pearl oil, cases, per gal17 c
Zerolene, lt., med., heavy, bbls., per gal41 c
Zerolene heavy duty oil, bbls., per gal51 c
cases, per gal61 c
Arctic cup grease (No. 0 to No. 5), 10 lbs., per lb.9 c
25 lbs., per lb.8½c
Zerolene, transmission, lubricant, 10 lbs., per case "A"\$1.35
25 lbs., per case "A"2.50

GROCERIES.

Flour has dropped a little north, but is unchanged here as yet. Hams have jumped ¼ to 1c per lb. Factory price on crackers has advanced. Low-grade canned salmon is advancing. Macaroni, spaghetti, etc., have been marked up a little.

LOS ANGELES.

Los Angeles, Dec. 5, 1916.

BUTTER.

Receipts of week ending Dec. 5, 1916—228,100 lbs.
Receipts of week ending Dec. 6, 1916—294,675 lbs.

A lower market was had the past week and trading only moderate. Receipts were only fair, but under a marked falling off in the shipping demand dealers on 'change were inclined to go slow and the day after Thanksgiving the market broke 2c and has ruled that much lower ever since. The home consumptive demand holds up fairly well, but it was not sufficiently strong to overcome the falling off in the outside movement. In San Francisco the market broke 1c on Friday, recovered ¼c on Saturday, but has remained steady ever since. Chicago declined 3c during the week on extras and New York 2½c under a boycott inaugurated against high prices in those markets.

We quote extra creamery	36c
Prime first	35c
First	33c
Wed. Thu. Fri. Sat. Mon. Tu	
1916	38 38 38 36 36 36
1915	28 28 28 26 26 26

EGGS.

Receipts (railroads) for week ending Dec. 5, 1916—695 cases.
Receipts (railroads) for week ending Dec. 6, 1916—610 cases.

With the Thanksgiving demand passed and eastern markets lower under a boycott against high prices, the market here since our last review has been both quiet and weaker. Receipts were light, but as there were more hen eggs and fewer pullet eggs coming in, dealers on 'change were inclined to hold back and do little. The high prices continue to affect home consumption, while speculation is out of the market. In San Francisco the market ruled fairly steady during the week up to Tuesday. Wednesday San Francisco broke 3½c and the market here 4c and no buyers on call at this reduction. Chicago continues steady with a week ago, while New York is off a cent.

We quote fresh ranch case count, 47c
Pullets, 38c, Candle 2c, and selected 2c over quotations.

Wed. Thu. Fri. Sat. Mon. Tu	
1916	45 45 45 45 45 41
1915	44 42 42 41 40 40

POULTRY.

Since Thanksgiving the market has quieted down perceptibly. There has been a dropping off in the receipts, however, as well as the demand and prices in consequence show no change. The tone of the market, however, is

rather weak than otherwise. Broilers and fryers, as well as roasters and turkeys and ducks have been selling slowly the past few days.

Broilers, 1 1/2 to 2 lbs.23@24c
Fryers, 2 1/2 to 3 lbs.20@22c
Hens, over 4 lbs.18@19c
Ducks17@18c
Geese16@17c
Roosters, 3 lbs. up. (soft bones) 18c
Turkeys, heavy, 12 lbs. and up. 23@24c
Turkeys, light21@22c
Squabs, live, per doz\$1.50@3.00
Dressed3.75@4.85

BEANS.

There was a more quiet tone to the market the past week. The approaching holidays and the coming of the new year making buyers more backward. The snap to the market noted heretofore being absent the past week. Holders, however, continue firm in their views. Hence the lighter trading.

Limas\$7.00@7.25
Large white\$9.25@9.50
Small white\$9.50@10.00
Pinks\$7.00@7.25
Blackeyes\$5.25@5.75
Tepary\$5.75@6.25

HAY.

The market just now is in a very

unsatisfactory condition. The scarcity of cars caused a number of shipments to come in the past week on open cars and they got caught in the rain and the hay damaged. Such receipts were very hard to move while real choice hay, under light offerings, met with a fair demand at old quotations.

[P. O. b. Los Angeles.]

Barley hay\$16.00@18.00
Oat18.00@20.00
Alfalfa, Northern15.00@16.00
Alfalfa, local17.00@18.00
Straw7.50@8.00

WALNUTS.

With the season closed and only a few outside scattering lots coming in and they mainly culls, there is nothing new to note. There are no more No. 1 walnuts in first hands. They are being bid for at 1/4c over the Association prices. Culls are selling at 5@6c per pound.

The associated prices this year and last are:

No. 11916, 1915.
No. 215.50c 13.50c
Budded12.50c 10.60c
Jumbos19.90c 17.00c
Jumbos17.50c 16.60c
Orchard run 3c less.
Culls, per lb.5@6c

vertising their poultry in our columns. She says of the Ferris people that "they are good, honest breeders."

Read our book offer in this issue. They are the standard in agricultural practice in the West. No better Christmas present can be had for the men or women folks on the farm. Send us your orders.

Classified Advertisements

MISCELLANEOUS.

REBUILT GAS ENGINES from 3 to 50 h.p. Thoroughly overhauled and guaranteed. We handle only high-grade engines. Write us your requirements. Motors, Gas Engines bought, sold and exchanged. Mechanical Installation Company, 181-89 Second St., San Francisco.

EVERY SIZE WROUGHT IRON WATER Pipe and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a Square Deal. Weissbaum Pipe Works, 160 Eleventh St., San Francisco.

SECOND HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHETER PIPE WORKS 306-8 Howard St., San Francisco.

AGENTS—Take orders for raincoats. Big commissions. Easy profits. Cooper made \$314 last month. We deliver and collect. Sample coat free. Comer Mfg. Co., 13 Cable St., Dayton, Ohio.

APPLES DIRECT FROM PRODUCER—Fancy grade, bulk pack. Per box: Newtown Pippins, 85c; Missouri Pippins, \$1; No. 2 grade, 60c. Edward A. Hall, E. F. D. 1, Watsonville, Cal.

FOR SALE—In Fernley Valley, 80-acre dairy farm, well stocked and improved. Price, \$14,000. Address O. P. McGarr, Fernley, Nevada.

BUY ROASTED COFFEE WHOLESALE—Best, 10 pounds, \$3.00 delivered. Order with remittance. WM. J. SCHROTH CO., 112-B Market St., San Francisco.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency. Savings and Loan Building, Stockton, California. Established fifty years.

"HOW TO LIVE ON LESS"—a guide to cheaper living. Wholesale catalogue free. Pacific Co-operative, A236 Commercial St., S. F.

TO REDUCE THE HIGH COST OF LIV-ING, send for our Wholesaler to Consumer Catalog. SMITHS' CASH STORE, 108 Cal St., San Francisco.

SEEDS, PLANTS AND TREES.

STRICTLY FANCY SEEDS—Alfalfa, Scarified Sweet Clover, Red Clover, Timothy, Rye Grass, etc. Free Bulletin—"Sweet Clover in the Northwest." Write for samples and prices. Ralph Waldo Elden, Central Point, Oregon.

FOR COVER CROP—Seed Horse Beans for sale at \$4 per 100 lbs. I. O. b. Oceano, San Luis Obispo county. Samples free. Send cash with order. Oceano Trading Co., Inc., Oceano Cal.

SUDAN GRASS SEED WANTED—This year's crop. Send sample and amount you can supply to J. P. Cundell, Lathrop, Cal.

MISSION OLIVE TREES—Raised from my own bearing trees. This is the only sure way to get what one wants. W. A. Hayne, Box 461, Marysville.

CELERY SEED FOR SALE—Dwarf Golden Heart variety. Produced from seed purchased from C. C. Morse & Co. Strictly fresh and clean. Price, per pound, \$1.50. James Mills Orchards' Corporation, Hamilton, Cal.

WALNUT TREES—Franquette, Mayette and Mammoth on Black Root; also Grafting Wood and Black Seedling Trees. Lowest prices. Mammoth Walnut Nurseries, Watsonville, Cal.

QUALITY TREES—Seedlings, 5c. Prunes, 10c. Walnuts, 30c. Cash Nurseries & Seed Store, Sebastopol, Cal.

WANTED.

WANTED—Young men and women to attend the Western Normal Courses—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A," Western Normal, 524 E Market St., Stockton, Cal.

PRUNING WANTED—By a thoroughly competent pruner; work on vines or trees. Address P. W. Brodt, 2150 Center St., Berkeley, Cal.

COUNTRY LANDS.

STANISLAUS FOOTHILL COUNTRY—After extensive search over California I purchased a year ago excellent 300 acres bench land bordering Stanislaus River, very attractive scenically on main highway S. F. to Yosemite. Soil and climate adapted to fruits, oranges, almonds and alfalfa—we are specializing on almonds and alfalfa. Tract watered by gravity ditch. Brother and self developing portion for own holding. Practically all balance sold to parties doing same. Will sell the three or four fine remaining tracts to desirable parties at very reasonable price and long time. Bank references. George S. Henry, C. E. Oakdale, Cal.

HUMBOLDT STOCK RANCH of about 1600 acres. Good family orchard some tan bark and fir. 200 acres can be farmed. 4 miles from N. W. P. R. E. A good stock ranch that will stand investigating. In order to settle an estate and to compromise litigation, this property has been placed in my hands to sell at \$8.00 per acre. C. E. Robertson, 105 Montgomery Street, San Francisco, Cal., or Bridgeville, Humboldt County, Cal.

WANTED—Reliable party with \$1,000 to \$1,500 for development purposes. Money secured. Have 95 acres bean, beet, and rice land. Can reside on property if desired. Plenty of water. H. Beckwith, Bethany.

ASK JOSEPH CLARK, Sacramento, about your nine rights. Information—reverted State and Government land. Any county. Booklet free.

HUMBOLDT STOCK RANCHES—CATTLE—Cattle correspondence solicited. C. E. Robertson, 105 Montgomery St., San Francisco.

40 ACRES choice level land. Improved. No alkali. Bargain price. Might trade. John Buck, Chowchilla.

Special Citrus and Deciduous Report.

Los Angeles, Dec. 5.

Shipments of oranges from Southern California from Nov. 1, to Nov. 27, 572 cars, and lemons 428 cars. Shipments for the same time last year 421 cars oranges and 319 cars lemons.

Shipments of oranges from Central California from November 1 to November 26, 607 cars and lemons 84 cars. Shipments the same time last year, 439 cars of oranges and 39 cars of lemons.

Shipments of oranges from Northern California from November 1 to November 26 were 353 cars of oranges and no lemons. Shipments the same time last year were 73 cars oranges and no lemons.

A fairly good market was had at the East the past week for oranges, but lemons were dull and market lower. The approaching Christmas holidays helped the orange market; then, too, a number of cars of new navel were in and the fruit coming to market was good, and being cheaper than Valencia as they attracted buyers. But with fewer offerings a weaker market may be looked for. Locally the market shows little change from a week ago. Few navels are arriving more freely and have crowded Valencia's pretty much out of the market. Local packers are paying now no more for them than new navels. New navels are being bought at 2@3c per pound in the grove and grapefruit 2@3c per pound at the grove. Both in very good demand at these prices. The fruit coming in is well colored and is testing

well. It will be noticed from the shipments that the early oranges are being marketed much more freely this year than last and so far prices are fairly satisfactory.

EASTERN AUCTION MARKETS.

New York, Dec. 4.—Five cars Valencia's, five cars California navels, two cars Arizona navels and three cars lemons sold. Valencia's higher, navels firm and lemons unchanged. Weather cloudy. Valencia's averaged \$2.20@7.30. Navels averaged \$2.25@4.05. Arizona navels averaged \$1.75@4.55. Lemons averaged \$2.25@3.00.

Boston, Dec. 4.—Market easier on Valencia's, but unchanged on lemons. Valencia's averaged \$3.30@4.30. Navels averaged \$3.80. Lemons averaged \$2.75 1/2 @ 3.25.

Philadelphia, Dec. 4.—Three cars sold. Market weaker on lemons. Lemons averaged \$2.15@2.35.

DECIDUOUS SHIPMENTS.

The final comparative statement of deciduous fruit shipments issued Dec. 2d, 1916, by the California Fruit Distributors, covering the last two seasons is as follows:

1915		1916	
205 1/4	Cherries	164	
392 1/4	Apricots	289 1/2	
1688 1/4	Peaches	1909 1/2	
2224 1/4	Plums	1998 1/2	
2645 1/4	Pears	3701	
9563 1/4	Grapes	9721	
58 1/4	Misc.	106 1/2	
16778 cars		17890 cars	

The Educational Department of the Sharpless Separator Co. of West Chester, Pa., has prepared a four-page circular, for free distribution, covering the question of cream separation. Teachers, county agents and creamery managers are urged to send for copies of these leaflets to distribute among their clientele.

Mrs. Swaysgood writes us that she notices with pleasure that the Ferris Poultry Ranch of Pomona is again ad-

WEEKLY BUTTER AVERAGES.

San Francisco		Los Angeles		
Week ending	1915	1916	1915	1916
July 3...	25.83	24.60	26.16	26.09
" 10...	26.21	26.40	26.00	26.60
" 17...	26.58	25.83	26.00	26.00
" 24...	25.41	26.00	25.50	26.00
" 31...	27.00	26.00	26.00	25.91
August 7...	27.00	26.16	26.00	26.00
" 14...	27.00	26.50	26.00	26.00
" 21...	27.50	26.50	26.09	27.95
" 28...	28.00	27.25	26.00	28.50
Sept. 4...	28.00	30.00	26.00	30.50
" 11...	28.00	30.20	26.00	32.00
" 18...	27.00	30.41	26.00	31.09
" 25...	26.50	30.41	26.00	30.50
Oct. 2...	25.91	31.66	26.00	32.16
" 9...	26.91	32.91	26.00	32.83
" 16...	27.00	33.50	26.00	33.50
" 23...	27.00	32.75	26.00	33.00
" 30...	27.00	32.59	26.00	33.00
Nov. 6...	26.55	32.66	26.00	33.00
" 13...	28.11	32.80	26.33	33.00
" 20...	29.59	35.25	28.60	35.66
" 27...	28.90	36.69	28.80	37.59
Dec. 4...	27.41	35.60	26.50	36.80
" 11...	27.33		23.83	

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.			
Week	San Francisco	Los Angeles	
July 3...	23.83	24.60	22.53 24.00
10...	25.50	26.30	25.00 24.00
17...	24.83	27.16	24.66 27.00
24...	25.41	28.20	25.50 28.00
31...	25.80	28.50	25.83 28.00
August 7...	30.50	31.00	28.00 29.16
14...	31.16	33.08	28.66 31.00
21...	31.25	33.09	30.16 31.83
28...	30.58	33.50	29.16 32.00
September 4...	30.08	36.12	30.16 32.00
11...	34.33	37.90	31.66 36.00
18...	37.98	38.83	33.37 37.00
25...	38.66	39.75	34.66 38.66
October 2...	40.08	39.75	37.33 40.50
9...	40.08	42.25	38.00 43.16
16...	45.50	48.50	40.00 49.32
23...	48.08	47.01	42.00 46.50
30...	48.58	47.09	42.83 43.33
November 6...	51.08	47.66	43.00 45.50
13...	54.25	49.50	45.33 48.00
20...	53.83	52.59	45.00 49.50
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11...	41.16		37.33

Publisher's Department.

A new nursery catalogue accompanied with price list has just been received from the Fresno Nursery Co. I don't know who did the printing, but the work done on the catalogue is very fine and no doubt Mr. Wilson is glad to send it out. It covers fruit trees, ornamentals, roses, plants, etc. Send for a copy.



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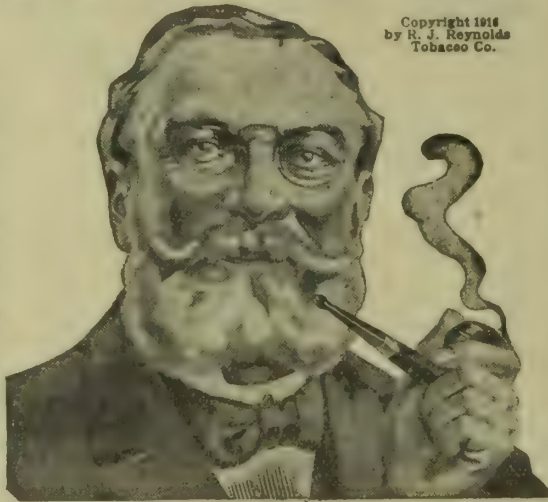
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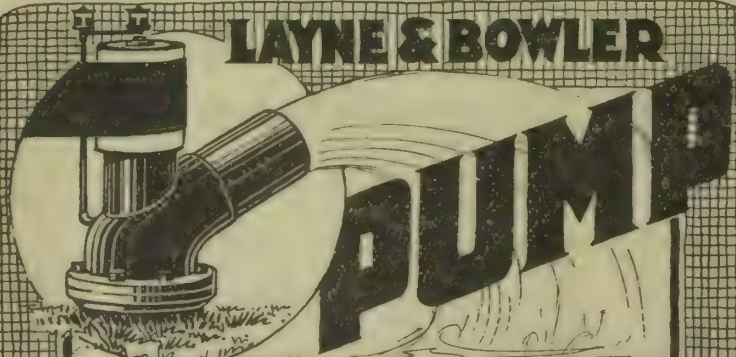
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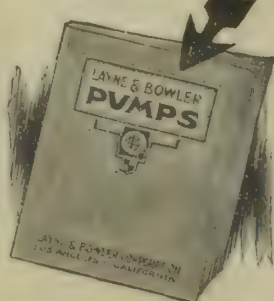
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Dormant Deciduous Fruit Pruning.

Winter-prune deciduous trees to produce good crops of good fruit every year, to support those crops, and to distribute fruit and leaves for maximum sun and air.

[Written for Pacific Rural Press.]

WHY should trees be pruned at all? It is contrary to Nature and does not Nature know best? Well, after all, Mother Nature provided mankind to prune and cultivate her orchard trees in order to bring out their greatest possibilities. And if mankind fails in Nature's plan, the tree sends up a wealth of spindly sticks with weak fruit buds. The outside sticks do some pruning by smothering the inside ones; and protect themselves by growing up out of reach. They set a multitude of fruit buds, and produce only flowers or small-sized fruit. With the stone fruits, this draws severely on the trees' energy to make a superfluity of pits. The tree in attempting to mature such an overabundance of small fruit, neglects to make fruit wood for the next year. So under Nature's plan, if unaided by man, we get irregular or alternate crops. And when we get the heavy crops the trees break down, partly because their framework has not been built strong.

Reasons for Pruning.—So one reason why we prune is to regulate the crop next season so we may get one the following season too: by reducing Nature's overabundance this year, we enable her to make fruit of greater size with a larger proportion edible and therefore more valuable.

But with proper pruning, a full crop does not break down the tree, because the pruning has been done from the first to make the tree stocky and strong, to balance it, and to expose the greatest potential fruit-bearing area to the sun and air, enabling leaves to digest the food sent up by the roots and add the most important ingredients of the fruits we eat.

The pruning of the trees' early years has spaced the branches, and made them grow diagonally upward and outward for greater strength and less inconvenience in cultivating than if they shoot horizontally from the trunk. Instead of allowing the tree to go unlimbitedly into the air, inviting wind damage and smothering the lower branches, the intelligent pruning produces strong fruit wood from the head up, and all within convenient reach. Instead of having an outer blanket of fruit wood over the tree, we get fruit all through the tree also.

Use Energy for Fruit.—A primary consideration in pruning a tree of bearing age, is to prevent its wasting its substance in riotous wood growth which has no value, costs much to remove, and takes many times more soil plant food than the same weight of fruit which would have money value.

An old tree or one weakened by injury, disease, or bad soil conditions, produces proportionately less wood growth and more fruit wood than a

younger or more vigorous tree, which had not been so weakened.

Prune According to Vigor.—So the first thing to note in winter pruning is the vigor displayed during the previous season's growth and to determine on a severe or light cutting back, accordingly. The heavy cutting back produces more new growth. The amount of this desired is determined partly by the increased fruit desired when it shall bear, and partly by the intensity of sunshine in summer which must be prevented, by sufficient twig and leaf growth, from sunburning the bark of the limbs.

Unless the cut is made close above a vigorous branch which will take the sap pressure, several new shoots will come from close to the cut. All

but one or two of these must be removed later. These shoots do not support themselves at first, but draw on the elaborated food supplied from the old leaves, either during the current season or during the previous season, having been stored in the tree during the intervening winter. This food might be supplied to fruits if the luxuriant new growth did not take it away from them. From many standpoints excess wood growth seems worse than useless.

To avoid getting it on a tree where it grew last season, cut back less. If wood is too thick for the good of inside and lower fruit wood, thin it out by cutting it off at its junction. We have the word of observant growers that thus you will get considerably less total length of new wood, but what grows will be stockier.

Regulate Fruit Wood.—Enough wood growth must be made each year to set and mature all the fruit buds needed for the future crop. This is true whether the buds are borne on new twigs or old spurs; and it is generally true in both cases that one year is consumed in making the fruit bud which is to bear the following year.

Apples, pears, plums, etc., bear partly on terminal or axillary fruit buds, and partly on spurs, which are themselves simply very short-jointed twigs on which annual growth must be made, often while maturing fruit, to bear the fruit bud for next year's crop.

Peaches, etc., bear on the longer jointed twigs which make fruit buds the year they grow. New twig growth on apricots has buds which produce spurs the following year, which produce fruit the year after that, and each year thereafter.

So each kind of fruit has its own habits of fruit bud location and formation which must be known before the tree can be pruned intelligently. And often, the different varieties of the same kind of fruit require notably different pruning. This is especially true of peaches and plums.

Reduce Disease by Pruning.—An important purpose of pruning not mentioned above, is to reduce damage due to disease and insect pests. Aphis eggs are quite largely pruned off in winter and should be burned. Certain other worms, etc., which live far out on the branches are cleared off by this means. Blighted twigs of walnuts, pears, peaches, etc., can be pruned out, and we know one grower at least who uses pruning to reduce pear thrips. It certainly allows better work for spraying where

(Continued on page 670.)



Upper: A Beautifully Pruned Young Almond Orchard in Butte County. Center: A Solano County Apricot Orchard Headed Higher than Peach or Cherry, Etc., Trees Should Be, but Apricot Trunks Resist Sunburn Better Than Those Fruits. Lower: A Young Peach Orchard in Tuolumne County, Ready for Pruning, and Generally Pretty Well Headed.

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EDITORIALS

CALIFORNIA VICTRIX.

OF COURSE the University Farm "victory" at Chicago is not the only pebble on the California beach, even though we do amuse ourselves by rolling it around on a later page of this issue. The sweep of the Bishop Brothers' San Ramon Shropshires through the field of garlands hung up for that breed at Chicago is as significant as the rush of Professor True's steers because it demonstrates that notable victories belong not alone to institutions with battalions of State-aided instructors and students, but can be reached just as well by private breeders who put in money enough to get first-class foundation stock and then handle it right, under the favoring natural conditions of California. Californians will not be true to themselves nor to the State if they do not follow up these victories. What has been done this year will cause this country and the world at large to sit up and take notice. In the future these great geographical bodies should be shown what California really can do through the whole gamut of pure breeding, whether its masterful creations be decorated with hair, wool or feathers. A single charge has put our rivals on the run: it will be our own fault if they are not kept going.

We make this prominent mention of these Chicago victories, although details are given fully elsewhere in this and last week's issues, thus hoping to penetrate the consciousness of some readers who have formed the habit of going to sleep in the middle of this page and of dropping the paper into the fireplace before which they are dozing. Of course they ought to know that the later pages of each issue are not as soporific as this one, but judging by the chestnuts which readers shake down in questions, etc., they are slow to learn the truth. It would be reasonable to put editorial comments on the last page where they might have a soothing effect on minds uplifted by the stirring facts and experiences which our associates describe, but the last page is the best-seller we have, and all stuff which does not pay has to be put inside and disposed of as soon as possible. And so, right here, we exalt the Chicago victories and exhort readers to study well their dimensions and significances. It is surely not necessary for the reader to fall asleep in the first column.

WHAT PRUNE GROWERS SHOULD BE DOING.

THE organization-preliminaries of the Prune and Apricot Growers' Association seem to be going on very satisfactorily. Forceful exhortations and demonstrations are resulting in wide consent to membership, as they should. It is therefore timely, perhaps, for us to suggest that signing contracts and subscribing for stock does not complete the growers' duty to the success of the effort. In all districts there should be either formal assemblies, or informal discussions among signers, to determine how their interests may be best represented in the association which will soon be taking on final form. It is expected that signing representing more than \$500,000 capital

stock will be secured this month. This fact will justify organization and continuation of efforts for completing requisite capitalization by March next. As soon as the fact is announced each district will be called upon to select its representatives on the board of trustees. These trustees are expected to represent the best knowledge and conviction of their district growers as to how the organization shall be equipped with officers and with policies of operation. Manifestly each district, to get recognition for its convictions, should select its best men to secure such recognition. They may be the largest growers or they may not, for it is a choice of men, not of tons of prunes. They should be quick-seeing, broad-minded and clear-speaking men who can fitly represent district points of view. They must of course be prune-growers, members of the association and residents of the district, but beyond that they should be able men among men. There are seven districts and each district has two trustees, except the Santa Clara district (Contra Costa, Alameda, Santa Clara and San Benito counties) which, by virtue of its proportion of the crop produced, has twelve. This district has 79,000 out of the 132,000 acres of bearing prunes and apricots in the State. The board of trustees has entrusted to it the formative influence of the organization because it is authorized to appoint a board of 13 directors who shall select the officers and supervise their operations. These directors may be chosen for their business ability and knowledge of cured fruit conditions, situations and trade. They need not be growers and each of them needs to hold but one share of stock, which may be issued by the trustees for purposes of legal qualification, and they need not be district residents. This explains why the districts should lose no time in considering what men they desire for trustees. They constitute the last chance the district has to embody its particular views and interests as a district, if it has any which are particular. After the movement passes the trustees its only point of view will be the good of the whole producing interests of prunes and apricots, though of course it may be expected to remain alert for important considerations from all sources just as any controlling business agency ought to be. We have to suggest then that each of the seven districts, if it has not already done so, should begin at once, by public assembly or otherwise, to decide for itself who are best qualified in various ways to act as its representatives on the board of trustees. It should not be left to a hurried getting-together and action after the formal call for choice of trustees shall be issued by the organizers.

RECRUDESCENCE.

THIS old world is surely sorely disappointing many of its recent admirers who, a few years ago, did not hesitate to proclaim it jogging along quite fast toward spirituality. They used to expend much profound sympathy upon the primeval man who had to devote most of his time chasing food rather than emotions, and in picturing the fast approaching moment when mankind would give no thought to sustenance because it could swallow tabloid meals between great drafts of esthetic ecstasy. Instead of realizing this blissful state we see rich and poor, bond and free, struggling against each other for the time-honored ailments of their grandfathers, like a lot of slum-kids at a fresh-air picnic, and all popular journals treating food questions as most favored sensation. Instead then of rising above the spiritually debasing activity of primeval man we find the present generation plunged into a recrudescence of it. No one can tell what will come of it. It bids fair to revolutionize the science of economics, the art of government, to swamp universal literature and almost to constitute itself a new religion for those "whose end is destruction and whose God is their belly." For it really does seem to us that the end and purpose of much of the current agitation is destruction and, in the long run, not calculated to appease the hungry god whom these agitators worship. For what will be the ultimate effect of arbitrary embargoes, price-fixing, food dictators and the like? We can see only one, which may be lasting, and that is the discouragement of food producers and the reduction of production. The way to get plenty of food for the world is to make

farming a good, profitable and inviting business. Many apostles of these new food-cults seem to think that farmers will of course go on producing; that they are a sort of perpetual motion in that line and need no external moving force. Such a notion is the blindest blunder in the world. All the farmer has to do to starve the world is to do nothing. It is very dangerous to place the farmer in sight of that operation. And the farmer is the only person in the world, except the hunter and the fisherman, who can starve every one else and live himself, because he is the only producer who can eat up his own product and keep alive upon it. All popular attitudes and legislative acts which rob the farmer of proper incentive to production are suicidal to all who cherish them—remotely, perhaps, but surely: with acceleration dependent upon degree of reduction in the incentive. And, when you get a certain distance along that road, personal struggle will arise between the starving food-seeker and the food-grower for his own subsistence, and primeval man will again live upon the earth.

PROPER ATTITUDE TOWARD THE FARMER.

IN THE mass of economic nonsense which food agitators, regulators and prohibitors are crowding into the columns of popular journals it is encouraging to find the words of a wise man who knows the attitude on the part of the public which will lead the farmer to the production of incalculable amounts of food supplies—lead him perhaps even to overproduction and his own embarrassment through unprofitability, but still lead him where no regulation can possibly drive him. W. B. Farley, who is described as "one of the oldest produce merchants in the San Francisco wholesale produce section," gives the Bulletin this gleam of profound truth:

"The farmer is at last getting a fair compensation for lean years. Prosperity for the farmer will eventually mean prosperity for the entire country and the kind of prosperity that counts. It means many things for the farmer to have a prosperous year, such as the present one has been. He will at last be able to pay off mortgages, invest in new machinery and to put more enthusiasm in his work than ever before.

"The big manufacturing States are calling for an embargo on foodstuffs. Before we talk of an embargo on farm products, let us talk of an embargo on steel, leather, lumber, farming implements, fertilizer and clothing. The big manufacturers have been busy selling steel products and all kinds of manufactured goods abroad for high prices. Now that the farmer is getting a price for his output in foreign markets they call loudly for an embargo. No one can say absolutely that a food crisis is facing the country. After all these years of debts and mortgages, why not allow the farmer at least a short time in which to balance his accounts and get ready for a new and better start?"

That is the stuff which the public ought to be fed upon until it gets strength enough to see straight. Be glad the farmer is making some money. Clear the track to markets where he can get more of what belongs to him. Make capital available to him for less than the pawn-broking to which he has always been subjected, has exacted. Make farming business more profitable than it has been and you will get more producing capital in it, more men and effort in it and more food out of it. Rastus! yo' heah muh, chile?

WELL, WHAT IS THE MATTER?

OF COURSE justice to the farmer does not mean injustice to anybody: it means justice to everybody. It is very possible that in current discussions some one is trying to make the farmer the scape-goat to cause the public to load upon him the sins of others. We are not discussing that question: we are merely insisting that unfairness to farmers which may embargo or dictate them out of business is no way to get more food. Farmers are not to blame for higher prices: so far as they are getting them, they are needed and deserved. The gouge upon consumers does not profit the farmer: it may hurt him before the season is over. He has no interest or sympathy with the gouging. As we write it is telegraphed from Washington that information gathered by Government officials conducting nation-wide inquiry into high cost of living points to the conclusion that soaring prices of certain necessities of

life were due, in part at least, to the manipulations of speculators who combined to force quotations upward. These combinations are believed by the Government investigators to have been criminal in character, rather spasmodic and rather short-lived. If this is the case, legislation can outlaw and proscribe them. They are an outrage on the

farmers as they are on all other people. So far as higher prices are due to natural and economic conditions they are incurable by legislation except that which enables them to operate without hindrance. There is only one safe way to get more and cheaper food and that is to help the farmer make more money!

ing water for a few seconds and allowing it to dry before closing up again in the cans. Or you can use carbon bisulphide—packing the cans in a tight chest, putting a saucer-full of bisulphide on top and a cover over the chest. When the liquid has vaporized spread out the fruit in the air (where no moth can reach it) until the odor disappears. Do not have any fire within reach of the fumes.

By
the Editor

QUERIES AND REPLIES

Inquirers Must
Give Full Name
and Address

Killing Fungus in the Oak.

To the Editor: In connection with the fungus in the oak, which seriously endangers fruit trees planted on oak clearings, I wish to ask if it is possible to introduce some solution into the circulation of sap that will reach every root and branch to kill the fungus so that the roots will have no more effect on the soil surrounding than ordinary decaying wood? By boring, slanting holes into the center of oak tree could a solution of concentrated lye or strong nitrate of soda be introduced so it would get into the circulation strong enough to kill the tree and roots both, inside of a year, by a sort of slow poisoning process? Large amounts of fine land are unsuited for many orchard trees because the effect of oak roots persists for years after the tree has been burned up. Do the roots still act, throwing oak sap into the soil; if so, will nitrate of soda counteract it? The idea is to use sap circulation to kill everything pertaining to the tree and by doing it slowly perhaps reach every part more effectually. Can you suggest any chemical that could be used for the purpose better than concentrated lye or nitrate of soda? How strong a solution is needed and what time of year should it be put in, or should it begin with the growing season and last until leaves have fallen, keeping holes filled often with whatever solution is used?—F. F. Britton, San Jose.

When such an idea comes into the mind the test of it is not reached through theoretical discussion, but through an effort to do the thing thought of. Many things have been found practically possible which have theoretically been pronounced otherwise. Therefore we suggest a few things without attempting to answer the main question of our correspondent.

First: There would probably be nothing gained by the effort to get into the center of the tree. The central wood is relatively inactive in sap movement. The chief upward movement is just beneath the bark in the early part of the growing season. The chief downward movement is also near the outer rim of the stem and forms the layer of "new wood" in the latter part of the growing season. In the case of a deciduous exogenous tree, these movements are more definitely seasonal than in an evergreen. Theoretically, then, the poison should be brought into contact with the wood just beneath the bark: in the spring to reach the top: in the late summer to reach the roots.

Second: It has been shown by experiments that by removing a piece of bark and keeping a killing solution in contact with the wound (by contriving a container against the tree and keeping it supplied) a part of the top of the tree can be killed: Theoretically the same could be done for the root by application to the downward flow of sap, but we do not know that it ever has been. Possibly it might be automatically prevented, because if you kill the top quickly there would be, theoretically, no downward flow. It would be a puzzle perhaps; for if you could kill the root first there would be no upward flow and the top might have to die for the lack of sap and not from poison, which would leave the joke on you with no chance for repartee. This shows that any amount of discussion could give you nothing but a "working hypothesis" for trying to do it. Therefore you must put your questions practically to the tree—which will probably have more to say about it than we have, because it knows more.

Third: The substances which are perhaps more offensive to growing cells than those you mention are bluestone, potassium cyanide, and white arsenic. We doubt if the solutions should be very strong, for if they are the tree would be able to sacrifice a few million cells around the point of your attack and thus check your offensive because dead cells would preclude movement. Thus again the tree might leave the joke on you.

Fourth: It is not a matter of oak sap. The injury is done to following fruit trees by a specific fungus (*Armillaria mellea*) which causes a parasitic disease of the oak itself and subsists on old roots left in the ground until they are completely decayed—thus lying in wait to attack any fruit-tree root which penetrates to its sphere of influence.

What Fruits to Plant.

To the Editor: I contemplate planting an orchard this spring. The land is best adapted to apricots, almonds and figs. Which would you advise planting? My idea, of course, is to plant the tree which will be most profitable in future years.—Subscriber, Esparto.

We print the question chiefly for the opportunity of saying that we do not undertake to answer queries of its type. Readers must carefully consider all that we are able to get for them from week to week about the actual behavior of the different fruits in the orchard and market experiences of those whose testimony we are able to secure. An intelligent reader should sift the testimony and decide for himself how he will invest his money or his life. He should no more ask us what fruit he should grow than what girl he should marry. He has to live with both, not we. We know well enough what fruit we would plant and what kind of a girl we would marry, but we will not allow you to put over on us your risk of insolvency and the divorce court. How do we know but what you will deserve both, and we are inclined to think you would if you should be content to follow our advice. And now, lest this should make you mad enough to stop your paper, we will say: "Plant apricots and God bless your union!"

Growing Globe Artichokes.

To the Editor: What kind of soil and climate are best adapted to the artichoke and what is the best variety to plant for profit? Will they grow on red soil which is well drained?—E. W. M., Marysville.

Although globe artichokes can be grown with good market-gardening conditions anywhere in our valleys and foothills for a local supply, the conditions which the commercial growers choose are a good, cool, foggy climate for summer growth and a mild winter temperature so the plants will bud when the buds are highest-priced, and that is during the winter months. For this reason the shipping supplies are chiefly grown near the coast in central and southern California. For such free vegetation as they require to bear profitably, a strong loam amply reinforced with stable manure and a good water supply to push growth are considered requisite. Such upland as you probably indicate would need much mellowing with manure and water always ready to keep the plant growing. Your dangers would be too dry summer heat. Plant a few in your garden and see how they act before going farther. You also need to see if you know how to handle the plants: there are some smart tricks in it. The Large Green Paris is chiefly grown.

Worming Dried Fruit.

To the Editor: I have dried figs, peaches and raisins for home use. They are in the hinge-top 5-gallon tin cans. How can I keep worms from getting into them? I found some small moths in them a few days ago. Can I use carbon bisulphide? If so, how?—E. B. H., Woodlake.

If the moths you found were of the right kind, as they probably were, the fruit will soon be crawling around. It does not matter what you put it in if you do it after the moth has had a shot at it. You must kill the eggs and worms already hatched. You can do this by heating thoroughly in an oven, not hot enough for burning, or by dipping in boil-

Rate of Sowing Grasses.

To the Editor: How much will it take of either seed to one acre of land as follows: timothy and clover and redtop: of each or all together as a mixture?—I. M., Sierraville.

It depends upon the condition of the ground and of the weather. A common rating, for each by itself, is timothy 20 lbs.; clover, red 15 lbs., white 10 lbs.; red top 40 lbs. Red top is seldom sown by itself; with timothy it is usually put in at the rate of one-fourth as much as of timothy. A mixture of the above per acre might be timothy 12 lbs., red top 5 lbs., clover 5 lbs. You cannot hit it exactly; whichever way you do it, you will think you might have done better with a little more of this or that, and this will depend more on how good the seed is and how good the conditions for a catch than on a little difference in the quantity. Readers will notice that the enquirer lives in a mountain valley. Neither timothy nor the clovers will be worth sowing in lower situations without irrigation—except near the north coast.

More Important Than Price in Beans.

To the Editor: Which are the two best market beans to plant as to price and yield—one white and one brown, say the Red Kidney?—W. C. Watsonville.

As our market reports have shown, the Red Kidney and the large and small white have led the price list notably for some months and are usually ahead. When it comes to growing beans it is however rather more important which beans give the best crop on your locality than which make the best quotation. Therefore it is important that you should get pointers from some one who knows beans under your particular conditions of soil and climate. Make friends with an experienced grower in your neighborhood.

Perennial Rye Grass Will Do It.

To the Editor: I have a field that gets very wet in winter; it has got good drainage, but drains do not do much good for water will stand on it in a few feet from a drain for two or three days after a rain. It is light red poor soil. Is there any grass that would stand this and do for cow hay? I tried timothy, but it dies out in the summer. We have very dry weather from the last of June until the middle of October.—A. H., Garberville.

The conditions are particularly unsuited to timothy. Sow perennial rye grass. It will endure the soggy soil and overflow and on such land will probably find enough moisture to hold life through your drouth, which is not a very long drouth for California. The grass would not be offended if you take up the drains and see if they are filled up or are water-trapped by sags on the grade.

Nuts on Orange Land.

To the Editor: Is there any reason why walnuts and almonds should not do well on land near Lindsay, which is suitable for oranges?—A. B. G., Lindsay.

Probably not. In some citrus districts at the south almonds seem to be upset by temperature conditions which interfere with their regular deciduous periods of rest and activity and do not bear well. So far as we know, the conditions north of Tehachapi favor more regular periods of activity and dormancy for both deciduous and evergreen trees.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., December 12, 1916.

STATIONS	Past Week	Rainfall Data		Temperature Data	
		Seasonal To Date	Normal To Date	Max'm	Min'm
Eureka .....	.46	7.68	12.43	54	30
Red Bluff .....	.00	6.99	7.18	62	28
Sacramento .....	.00	3.59	4.80	58	32
San Francisco .....	.01	5.69	5.34	60	42
San Jose .....	.00	3.30	4.02	62	38
Fresno .....	.01	2.21	2.52	58	30
Independence .....	.00	1.12	2.44	72	..
San Luis Obispo .....	.00	6.58	4.24	72	34
Los Angeles .....	.00	4.27	3.03	72	44
San Diego .....	.08	1.38	1.80	64	42

Fruit Trees Planted Last Season.

[Written for Pacific Rural Press.]

A table of the number of acres of each kind of fruit in each county was published in our issue of May 6 with corrections of the almond acreage in the issue of June 17. These did not include last season's planting, which is given as nearly accurate as possible from estimates made for Pacific Rural Press by county horticultural commissioners. Those omitted did not report, for one reason or another. The estimates of fruit planting are usually made on the basis of nursery trees

inspected by the horticultural commissioners under the horticultural laws. Complications arise where nursery trees are shipped into a county and then out again—also where many fruit growers raise their own trees, also where nurseries ship to substations in other counties and burn all trees left over at the end of the season. There is also no feasible way of determining how many are planted in old orchards where occasional trees have been taken out.

We have expanded Napa Horticultural Commissioner J. J. Fox's suggestion of estimating 100 trees per acre except as noted below, where the estimates came to us in number of trees. This probably makes a conservative average allowance for distances and replants. We have also figured on 25 fig and walnut trees per acre, 700 grape vines, and 2000 berry vines. Where only "citrus" trees were reported, the figures were credited to oranges. These assumptions lead to certain errors, but form a fair relative basis. Note that figures for non-bearing acreage cannot be compared with the rest.

ACRES FRUIT TREES PLANTED LAST SEASON.

COUNTY	Almonds	Apples	Apricots	Berries	Cherries	Figs	Grapes	Lemons	Olive	Oranges	Peaches	Pears	Plums	Prunes	Walnuts
Butte N	1317.0	330.6	8.2		38.3	67.0	7.3	37.0	1512.0	122.5	226.5	304.6	67.5	2229.1	227.0
Eldorado	21.9	2.5	1.0		8.9	1.0	.2		.5		5.0	113.9	24.7		6.4
Humboldt		55.5	1.7	8.7	3.9	1.4					7.8	4.0	5.3	.5	29.0
Imperial		5.5	4.8		5.0	12.0	3.0	12.6	10.3	2.9	7.7	1.8	.4		.3
Kern*	35.0	70.0	20.0			40.0	3.0		335.0		40.0	50.0	20.0	70.0	154.0
Kingst			357.4			17.0	85.0		9.1		181.6			413.5	
Lake	89.9	5.9			1.7		1.3		1.3		6.4	278.0		161.1	165.0
Los Angeles		560.0	400.0					1145.0		3536.0	550.0	1250.0			4000.0
Madera*	10.0	15.0	50.0	2.0	2.0	140.0	160.0		125.0	3.0	100.9	59.9	10.0	50.0	12.0
Mendocino		38.7			14.9						21.3	406.5	24.3	283.4	166.4
Merced	630.0	5.0	25.0		1.0	306.0	175.0	2.0	41.0	3.0	73.0	5.0	50.0	50.0	27.0
Monterey*	65.0	15.0	320.0	30.0	8.0		1.4		2.0		5.0	15.0		5.0	76.6
Napa	148.5	102.7	17.2	14.0	44.5	1.4	5.1	4.0	1.6	4.6	39.5	174.1	98.3	138.1	43.0
Nevada*	1.0	19.0	1.5		4.0						15.5	308.0	18.5		1900.0
Orange N.		230.0	200.0					1550.0		6500.0					
Placer	76.3	7.3	9.5		48.2		3.6			10.9	208.0	530.0	488.8		
Riverside N*	5620.0	2530.8	3366.1		334.0		97.9	2377.9	515.5	3116.0	1070.7	644.6		329.1	1600.0
Sacramento	185.0								109.3	56.7	58.2	155.4	129.5	291.5	
San Benito		281.0										200.0		421.5	
San Joaquin	115.2	9.2	41.9	7	85.0	31.6	33.5	1.2	48.6	7.6	123.6	130.1	48.9	111.9	222.8
Santa Barbara		13.0	4.5		5.2	16.0				6.0	10.0	4.7	4.1	2.0	20.0
Santa Clara N.		310.0	320.0		2000.0	60.0		5.0	51.0		200.0	223.0	153.0	1250.0	280.0
Shasta		9.8	3.3		3.7	9.4	23.4		81.2		176.2	7.3	115.9	178.0	17.0
Sonoma†		101.5	40.7		81.8				24.5	83.1	216.2	28.8	2093.5		
Tulare†	88.8	12.7	119.5	25.0	5.4	656.8	257.5	18.2	99.5	318.0	221.8	19.6	124.3	1118.3	126.4
Yolo†	740.4	3.0	27.5		1.1	73.6	64.0	4.7	6.8	9.8	28.8	157.7	29.7	219.7	11.2
Yuba*	15.0	30.0			5.0		1575.0		305.0	10.0	55.0	245.0		365.0	10.0

*Reported as acreage. N—non-bearing acreage. †Approximations made by estimating what proportion of imports and nursery stock raised in the county were planted there. ‡Imported trees and vines on the acreage basis as noted.

Whose No. 1 Prune is It?

To the Editor: The great interest in the "No. 1 prune" mentioned in your issue Nov. 25 leads me to seek to straighten out the tangle, into which it is getting as to name. Two nurserymen claim the origination and name; one under "—'s No. 1," another under "Improved French No. 1." As a matter of fact the several original trees in Suisun valley cannot be traced to any nursery now known. Why you call it "Sharpe's No. 1" is a mystery to me as I never heard that name in connection with it, and it bids fair to stick.

It is no more French than it is Imperial, Clairac or Robe de Sergeant, the French prune of commerce being Petite d'Agen (smaller than 60s to 70s) and a larger strain either Prune d'Ent, or Pymirole. I thank you for your good opinion of samples I sent. Frank Owen. Napa.

[We perhaps merely added to the confusion over the identity of the variety which Mr. Owen sent us by calling it "Sharpe's No. 1." We knew it came from the Suisun-Vacaville district and M. Sharpe's "No. 1" was the only one we knew of that number in that district and tried to make the mention more definite by treating the fruit as that variety. That may have been a serious mistake on our part. Perhaps if you interest your horticultural commissioner, Mr. Fox, in establishing the identity of your strain as related to others with which it is getting confused, a definite settlement can be reached. Mr. Fox of Napa and Mr. J. W. Mills, Farm Adviser of Solano county, can get together all the facts and give us a decision.

It will hardly do to make the term prune d'Agen only apply to small prunes. "Petite d'Agen" is

a name which never existed except in California. A selected French prune which is large may be just as true prune d'Agen as an unselected one which is small. And a selection from the French prune does not, by fact of size, become Imperial, Clairac, etc. The matter ought to be taken up seriously and the identity of all these prune varieties straightened out and kept straight hereafter. —Editor.]

MIXING FRUIT VARIETIES.

To the Editor: Would you advise planting a different variety of pear for a pollinizer in a large block of Bartlett's? Is it advisable to plant mixed varieties of trees in large blocks?—J. C. B., Sebastopol.

The Bartlett needs no pollinizer. Many varieties of other fruits do. In selecting varieties for interpollenization, pick those that bloom at the same time and one of which produces plenty of vigorous pollen. Except for this purpose and for soil and drainage differences, mixing varieties is not economical. Trees are much more conveniently pruned, sprayed, cultivated, and fruit harvested, in solid blocks of one variety. Where interplanted for pollenization do not alternate single rows, but pairs of rows or only one row of the pollinizer per two or three of the desired fruit, or graft a branch of the pollinizing variety into the trees.

PICKING LEMONS GREEN.

To the Editor: I have some lemons; want to keep for home use. Tell me how to care for them to keep

them from getting dry and hard. Should they be gathered while they are green or after they have turned yellow?—H. W. L. R., Fresno.

Pick your lemons before they begin to turn from the dark green to the silvery tone, and do not let any of them turn yellow on the trees.

Keep them in a uniformly cool temperature in the dark where there is more or less ventilation. A lemon is nearly dead when it has turned yellow on the tree, while it is full of life if picked absolutely green; and will develop acid, flavor, and a thin, beautifully yellow, pliable skin, if kept as suggested.

Commercially, they are laid onto trays, each tray holding one layer of lemons so that the air can circulate over them. They are kept either in ventilated basements or under canvas which can be raised at night.

YOUNG PRUNE PRUNING.

To the Editor: I am coming back to you again for information on pruning the two-year-old French prune. I got instructions through you last year on the first pruning of my orchard and it has proved more than satisfactory.—R. T. M., Los Molinos.

Your object still is to make a sturdy tree. Cut back half to two-thirds of the new growth according to the vigor shown. Make cuts just above a strong lateral, but leave no stubs. Thin out to balance the tree, aiming to leave about twice as many branches as before, sloping diagonally upward. If the trees are especially vigorous do not cut back so heavily and let them bear a little fruit next summer if they have the buds.

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Quick Citrus Organization.

[Written for Pacific Rural Press.]

Thirty-four citrus growers near Redlands organized the "Crown Jewel Groves Inc." Oct. 18, 1915. On January 6, 1916, after their new packing house had been running some time, they held a formal opening which was attended by officials of the California Fruit Growers' Exchange through which their fruit is marketed, of the Pacific Electric on which the house is located, of the Southern Pacific, and the Redlands Chamber of Commerce.

Practically all the members had been shipping through concerns outside the Exchange. They had appointed a committee of growers to determine whether the Exchange was bringing better returns. Finding that the Exchange houses were really paying the growers about 15 cents per hundred pounds more than the independents, they quickly signed up about 505 acres. Stock is issued to the growers in proportion to the fruit they ship, but no stock can be sold. It is a non-profit corporation of growers. The fruit from about 55 acres besides that signed up was shipped through their new house during the past season and a total of 540 acres are signed up for the forthcoming season.

The plant cost \$15,000 and will have a capacity of five cars per day when another sizer is installed.

To Basement from Orchard.—A distinctive feature and a most valuable one where there is no pre-cooling plant, is the concrete underground store room, for fruit as it comes from the orchards. It is unloaded onto gravity conveyors which carry it into the basement where it is distributed by roller conveyors, which are themselves movable on casters. These enable the boxes to be placed in piles with just one little lift. The storeroom is ventilated at night and may be closed in daytime.

When fruit is to be held before packing, it does not suffer the hot changing temperature as it does in most packing houses, and shows correspondingly less decay. There is storage room for 9000 boxes of fruit and six or seven carloads of shook, besides the box-making machines.

While packing goes on on the main

floor over the storeroom, a truckman downstairs sets the boxes of fruit onto an inclined conveyor from which the boxes load themselves into a continuously running elevator. This is a self-dumper, emptying the fruit into the washing tank. All fruit is washed by soaking awhile in a tank whence an apron belt carries it out and dumps it onto several cylindrical brushes all turning in the same direction under continuous jets of fresh water. The brushes slope, and the fruit is helped along by auger projections of the bristles. Thence it is run through canvas towels onto roller aprons and through a series of eight hooded driers through each of which air is forced by large fans. This dries the fruit; and it is sized, packed, and loaded as usual.

The packing house is exceptionally light, having 36 windows each 3x3 set into a vertical offset in the roof facing north, besides the open sides. The hardwood floors are easily kept clean. Conduits protect electric wires for lights, etc. Its location in the center of its members' orchards saves much hauling, and the Exchange takes the worry of marketing. J. D. Langford, one of the leading organizers of the M. O. D. and the leading salesman of that organization for the past five years, has been appointed manager of the Crown Jewel Co. for the season of 1916-17, and will market the fruit from his 100-acre orange grove through the Crown Jewel Co.

No one knows better than Mr. Langford the value of co-operative marketing. For five years he fought the Exchange in the San Francisco market and opened it to the M. O. D. with the sale of 254 carloads of oranges in a single season, but in that long fight he found the Exchange, with its overwhelming supply of fruit, its immense advertising strength, its well-trained corps of salesmen and its ability to keep its customers well supplied with the very best fruit at all seasons of the year, so manifestly the soul of the citrus sales department of California that he was forced by the logic of the sales situation to cast his fortune with the Exchange.

Strongest Grape Canes Pruned Longest.

[Written for Pacific Rural Press.]

In pruning Muscat and Malaga grapes, the strongest canes should be left longest. If they happen to be all on the same side, that side will overbear next year, while the other side catches up in vigor. Cutting strong fat canes short reduces fruit possibilities, for it does not help whatever weakling spurs are also left and it throws the strong sap flow into fewer buds causing coulure. Cut the fat canes long for fruit and then if there are not enough for renewal spurs also, the slender canes may be used.

Enough fruit wood should be left to use the vine's energy in producing fruit rather than in producing useless watersprouts and cane growth. Judge this by last year's performance and the treatment the vineyard is to get the coming year. Get the desired amount of fruit

wood on many spurs rather than on a few, for if too long they may get knocked off in cultivation and then there might not be enough left. Save an equal number of renewal spurs of one bud each, as you have of fruit spurs, so there will be sure to be enough to leave at next pruning.

Such is the philosophy of Frank Henry, whose instructions A. B. Cate of Fresno county followed to get 18,300 trays of Muscats from 37 acres about 30 years old. For that crop, he pruned the weaker vines in February, leaving the stronger ones till March so they would bleed some and be held back from excessive sap flow to the blossoms. He left 8 to 15 fruit spurs per vine and an equal number of one-bud renewals, with the remarkable result in production here stated.

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Training Thompson Vines.

[Written for Pacific Rural Press.]

If Thompson grapes have enough water at the right time, they should be spread out to get maximum air and sun. Since Thompson, rightly pruned and cared for, will bear a good bunch at almost every node, it is an advantage to have a few canes well spread out, rather than more shorter ones more bunched up. To get the maximum air and sun, a fan-shaped training on two wires is proving best and most generally practiced. Those who permit their Thompson trunks to get tall lose some of this advantage. Where the vines are consistently headed near the ground, the shoots may be spread with considerable precision.

Spindling canes should always be either cut off entirely or cut off for renewal spurs, if there are enough strong fat canes left. There should be enough of these to set enough fruit so that all the vine energy will be devoted to fruit rather than to watersprouts. In Mr. Schlueter's vineyard, many vines were left with a dozen canes, filling all space between vines, which are 10x12 feet apart.

The easiest, quickest system of tying and untying Thompsons that we have seen is practiced by J. A. Schlueter and a number of others in Fresno county. No strings are used, yet under a 6000 tray crop on 8½ acres in 1916, not a tie pulled out even when the wire trellis broke down under weight of crop.

Last season, two No. 14 wires were used, being stapled to the sides of the stakes. Wires all over the vineyard broke in two, while lots of the staples were pulled out. This season, the top wires will be replaced by No. 11, stapled on tops of the stakes, and the No. 14 used for lower wires in young vineyard.

The tie used was figured out by Frank Henry. It avoids need of strings, may be quickly put up and quickly taken down at next pruning, yet never loosens.

If the vine has been trained right from the start, it will have three or four shoots left to grow in the second season. If they made good growth 5 to 6 feet long, two of them are left in pruning for the 3rd year, while one or two are cut back to two buds for renewal spurs. The two left are cut back to two feet long. This severe pruning is designed to encourage growth of a crown of large diameter not over six inches from the ground. A two-inch pipe will carry more water than a one-inch pipe. So a trunk of large circumference can carry more sap than a smaller one.

The two canes two feet long will bear as much crop as if they were four feet, according to Mr. Henry, for the roots can support only so much. If the canes were left four feet long, the top buds would grow leaving the others dormant and useless. At the end of this third season, these two canes should be cut back for renewal spurs and three or four canes left from the renewal spurs for fruit the following season.

At this pruning for the fourth season the wires should be run along the stakes, the first wire about three feet high, the top one perhaps five

feet above ground. The fruit canes will be carried diagonally to the top wire past the lower wire on the side against which each cane will naturally press and tied to the top wire. The "Henry tie" consists in bending the end of the first cane back toward the top of the stake, over the wire and under it, letting it rest on top of the stake or against its side. It is cut off just beyond the stake. The second cane is treated the same way from the opposite side of the stake.

Before there is any weight of crop to pull it loose, shoots will have grown over the wire in such a way as to hold the canes in place.

The third cane is cut considerably longer than the first and second so it may be run out to the wires at an angle about 45 degrees, then bent back over the top wire and under it so the end of the cane will catch against the bend of the second cane.

On mature vines, with as many as a dozen canes, the angle at which the intermediate canes are evenly spaced from crown to wire, so that the outside canes on mature vines will meet their neighbors at the centers of the top wire is about 45 degrees if the vines are 10 feet apart and the top wire 5 feet high.

At the winter pruning, canes which have borne are cut back to renewal spurs or to the crown. They are easily taken down from the wires by cutting the season's growth off, and loosening the ends of the canes. Then the canes that grew from the renewal spurs are "tied" in the same way.

DORMANT DECIDUOUS FRUIT PRUNING.

(Continued from first page.)

pruning can be done, and it opens up the trees so certain fungous diseases find little encouragement.

When to Prune.—It is generally believed that pruning late in the dormant season has some effect in preventing early growth which is undesirable in frosty locations. Late pruning is also desirable from the standpoint of early healing to prevent rot and dying back, especially in soft-wooded varieties and in large wounds. The latter, however, should always be covered either with lead-oil paint or asphaltum, the latter probably being safest. Some people delay pruning till the buds swell to indicate those which have wintered well and are most likely to produce strong bloom.

With some fruits, notably the apricots, much pruning is done before the leaves fall. This is claimed to strengthen the fruit buds, if it does not induce new wood growth. It has the advantage of all early pruning that it is sure to get done, while weather and ground are good, and before winter spraying.

Use of Shears.—A horticultural commissioner lost his reputation with a wide-awake grower in California, because in attempting to give him a pruning lesson, he set one jaw of the shears in the crotch and made a bad bruise, a ragged cut, and a stub. Wherever possible, even at the cost of convenience, the jaws of the shears should be applied to both sides of the branch to be cut, with the handles beneath. And even at the cost of much energy and time, no short stubs should be left, but the cuts made close to junctions. This prevents loss of many of the most fruitful years of the tree's life.

P. J. S. Montgomery, who owns a big orange grove near Porterville, claims to have found a remedy for June orange drop. He has submitted his findings to the horticultural authorities at the State University at Berkeley, and they have agreed that he is right. He says that the drop is caused by a peculiar fungus growth at the stem of each tiny green orange, and that sunshine, following a period of dampness, is the cause of the fungus. Last spring he treated a part of his orchard with a fungicide, and later in the season sprayed it again. On these trees thus tested, he says, practically every orange remained.

STUART PRUNE

ORIGINATED BY J. F. STUART, RIPON, CAL.

Twenty-seven dried prunes to the pound.

This prune is a cross of the French prune and the Tragedy prune into the Silver prune—the Silver being the mother-prune.

The market price of this prune is 12½¢ per pound.

The University test is 53.5 per cent sugar. It drops from the trees and processes like the French; has a very delicious flavor; is black when dried; the wood is hard like the French; is a prolific bearer and dries down very heavy. Small pit.

We are exclusive owners. 5000 budded trees in stock for sale this season. Also plenty wood for grafting.

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NOTES ON INTERPOLLINATION.

[Written for Pacific Rural Press.]

Many varieties of fruit bloom but do not set fruit because they do not pollinize themselves. They need other varieties of the same kind of fruit nearby so that the pollen may be blown by wind or carried by insects to their blossoms. Locality and climatic conditions have something to do with this. We do not attempt to deal with the subject fully here, but give random notes picked up from our travels. Varieties to be useful for interpollination must have blossoms open at the same time.

Almonds.—While the Nonpareil often pollinizes itself, a block on the James ranch in Sacramento county never bore for six years. A graft of Ne Plus was inserted into each tree of every third row, and thereafter they bore heavily, according to Elmore Chase. The Texas Prolific is one of the best pollinizers, according to J. P. Dargitz of San Joaquin county, though most of its bloom there comes two weeks later than Nonpareil.

Prunes.—It is very advantageous to graft Robe de Sergeant into Imperial prune trees to make the latter bear, as experienced by Wm. Grant of Vaca Valley.

Cherries.—E. H. Goepfert of Vaca Valley has recently planted 1000 Chapman and Burbank cherry trees in alternate pairs of rows of each variety for pollinization because the Chapman in his experience is a heavy bearer and the Burbank light. He has been growing cherries many years. The Rockport is the best pollinizer he has found, and he expects to graft that variety into all shy-bearing trees which bloom about the same time. A block of 300 Rockports always gives him a heavy crop; and the cherry trees next to them always bear well. H. A. Bassford, who has one of the biggest orchards in Vaca Valley and has been raising cherries for 30 years, regarded alternate rows of different varieties a great secret of regular bearing of good crops. Republican, Bing, and Royal Annes work well together.

Plums.—Wickson seems a shy bearer in some districts, but M. Sharpe of Vaca Valley has a block of 600 trees surrounded by pears which he told us a year or two ago had borne consistently, and as well in the center as at the edge. A crop of 2400 crates had been taken from them. His neighbors, also, had some big blocks of good-bearing Wickson plums. In Placer county where Wickson does not generally bear well, Climax and Santa Rosa are good to help. Mr. Bassford regards the Apple plum, one of the old introductions of Burbank, as a fine fertilizer for Wickson, also the Satsuma. Dukes and Diamonds work well together for him; also Formosa and Santa Rosa. C. V. Freed of Placer county believed that grafting Clymans into Tragedy made the Tragedy bear. He also found that Hinori mixed with Tragedy made the Tragedies full.

So far as can be learned the heavy and almost Statewide frost did not injure the lemon and orange crops at Santa Barbara.

Roeding's Page

ON TREES

PEARS

PROF. WICKSON, in his book on "California Fruits," makes the following introductory remarks about the pear:

"The oldest deciduous fruit trees in California are pear trees, as has been stated in the account of fruits at the old missions, and some of the trees are still bearing, though it is a century and a third since their planting."

It is very gratifying, indeed, to have this encouraging statement from Prof. Wickson. Strange as it may seem, there is not a single line of fruit growing which has been attempted in California, no matter what the obstacles may have been in the beginning, or which may have arisen as the industry has been successfully launched, that has not gone on developing just the same, in spite of any deterrent influence which might have had a tendency to make the business unprofitable.

Climatic Advantages.

This is accounted for through the fact that California, with its great variety of climate and soil conditions, offers advantages which are not found in any other state in the Union.

Scientific methods of control and the fact that in practically all the coast counties no serious results have been apparent from the attacks of blight, probably accounts for the building up of the pear industry, in spite of the very serious obstacle that has menaced it. Another factor which has

caused the grower to take such a deep interest in pear culture, has been brought about by the fact that possibly in no other place outside of the Pacific Coast states does the grand old standard "BARTLETT PEAR" reach such perfection.

Heavy Bearers.

The trees bear enormously, and they seldom suffer from frost damage, due to late blooming. The fruit is harvested, depending on

the localities, from July to October, and the tremendous demand for it for shipping and canning and its delectability, even when dried, all combine to make it an all-around pre-eminent fruit.

True, there are other varieties, such as the Doyenne du Comice, Glout Morceau, Howell, P. Barry, Winter Bartlett, Winter Nells, and several others, all of which have their place as market varieties in the fresh state.

Is it any wonder when year after year the exceedingly high prices which are paid for fresh pears on the Eastern market, the prevailing satisfactory prices paid by the canners one year with another, and the ready sale of dried pears at very remunerative prices in localities where they cannot be marketed fresh, due to unsatisfactory transportation facilities, that the interest in this industry has never waned?

No Over-production.

In the year 1900 California, according to a statistical report, produced something over 7000 tons of dried pears. This gradually fell off from 1000 to 1500 tons per annum until the year 1911, since which there has been a steady increase, and the output at this time is something over 5000 tons annually of the dried fruit alone.

Lack of space on this page forbids further mention of varieties, planting, pruning, etc., but we will be glad to correspond freely with interested growers.



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How California Could Help Colonization.

[Compiled for Pacific Rural Press.]

[In the issues of this journal for November 11 and 18 outlines were given of original investigation into the methods and results of recent private and corporate efforts at land subdivision and settlement in California. These results were attained by joint undertaking of the State Commission on Rural Credit and Land Settlement, the Agricultural College of the University and the Commonwealth Club of San Francisco—the last-named furnishing funds to meet expenses and the others the services of the investigators and interpreters. The results of the inquiry will be published in detail by the Commonwealth Club and by the State, in the form of a report of the State Commission to the governor, which will soon appear. From advance sheets of this document we compile an outline of what the State is recommended to do, through provision by the incoming legislature. The members of the State Commission whose report we are abstracting are Dr. Elwood Mead (chairman), Harris Weinstock, David P. Barrows, Mortimer Fleishhacker and Chester Rowell. D. N. Morgan is secretary of the Commission.—Editor.]

A State Need.—The colonization and development of the unpeopled farm lands of California is of such importance to all the people of the State that it should not be left to the separate action of landowners, but should be shaped in part by the carefully thought out, purposeful action of all the people. This means that the State should have a land settlement policy and deal with this matter as a public problem.

By regarding colonization and the creation of rural communities as a trust, we may create agricultural colonies filled with people who will make this a State where the best people in this country will want to live. We may only do this, however, if the diversion of our rivers, the selection of land for colonies, and the methods of development are planned and directed by the best thought and intelligence of the time. We shall achieve nothing by leaving these things to blind chance.

State Supervision of Settlement.—It is believed that every interest which needs consideration would be benefited by providing for state supervision of colonization. There is some difficulty in accomplishing this because it ought not to embrace ordinary sales of land from one person to another, but only include those enterprises which assume sufficient magnitude to have public importance and in which settlers who are unacquainted with local conditions are sought from the outside or from a particular neighborhood. Such supervision should aim to accomplish the following results:

1. To provide that adequate attention has been given to water supplies and drainage in irrigated areas.
2. That the land is suited to the purposes for which it is being sold.
3. That there is no misrepresentation in the advertising.

It should also aim to aid those engaged in colonization by pointing out features in the plan they are following which are likely to lead

to failure. Such state supervision would in no way hamper development, but by preventing misrepresentation and giving new colonization enterprises the benefit of a wider experience would protect them from mistakes and also safeguard the settler.

It would promote development by strengthening confidence in our advertising statements abroad, but it will not of itself lead to the adoption of the best features of the land settlement systems of other countries.

In the past settlers and land settlement have been helped by the large increase in land prices which accompanied development. This made it possible to borrow money for improvements or to sell a part of the original purchase for nearly the first cost of the whole area. This aid can not be relied upon in the future and we must replace it by a more generous personal credit system and by introducing more efficient and cheaper methods of preparing farms for intensive cultivation.

The experience of other countries and of some colonization enterprises in this country indicates that it is cheaper for an organization having ample capital to level and seed the land and finance the building of houses than to leave the work to the individual settler.

Longer Terms for Payment Necessary.—The experience of other countries is to the effect that a longer time in which to pay for farms than has been given in California is desirable. The tendency in Canada is to make the payment period not less than twenty years. In European countries it varies from thirty to seventy-five years.

The following suggestions are made as to the future financing of settlers in California:

1. Give twenty to thirty years' time in which to pay for land.
2. After the initial payment require no further payment on principal for the first two years, but stipulate in the selling contract the character of the improvements which must be made.
3. Have the payments of land amortized and the amount of the annual or semi-annual payments equal throughout the entire period.

It also seems desirable that the State should aid colonization by establishing one or more offices in the State where information regarding land in approved colony enterprises could be obtained.

Colonization by the State.—It is believed that over a considerable part of this country the different States will soon have joined other enlightened countries in making colonization a public matter. In the East it will be done to lessen tenant farming and improve agricultural practices; in the West as the best method of rapidly settling unoccupied and uncultivated land. The tendency towards the adoption of this policy in the West is shown by the decision of the United States Reclamation Service to level and improve farms before offering them for settlement.

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progress too slow if it depended entirely on action by the State, but the State can do more than any other single influence to promote the adoption of right policies by making a demonstration in colonization for the purpose of showing how superior carefully thought out development is to that where only local or immediate benefits are considered.

The State which blazes the trail in scientific colonization will secure a prominence and establish a moral leadership that will be of great value in attracting desirable settlers. No State has more to gain from such leadership than has California. If the State were to purchase, subdivide, and settle 10,000 acres, its action would be watched by the whole world. It is entirely feasible to make this educational demonstration commercially profitable. It can be made to pay its way, so as to cost the taxpayer nothing. Such result has been achieved in the countries whose State systems have been held up as examples; there is no reason to doubt our ability to be equally efficient and successful.

How It May be Had.—An area of about 10,000 acres is suggested, because this area can be more economically and effectively managed than a smaller one; and its results would be of more general value. A larger area is not advised because of the cost.

Out of such an area there would have to be deducted, let us say, 300 acres for roads, canals, schoolhouses, and recreation grounds; 100 acres for farm laborers' allotments and a few small orchards and gardens. This would leave 9,600 acres, or enough for about two hundred farms varying in size from 20 to 100 acres.

The value of this demonstration would be increased by restricting settlement to qualified applicants between the ages of eighteen and thirty, men of experience and training, no one to be eligible who owns farm land elsewhere in the State, nor who has not had at least one year's farming experience, and who can not within six months become an actual resident and cultivator of his farm.

In planning colonies the State should follow the main working features of the plans which have succeeded best elsewhere. We believe that if the plans included the following, the results would be entirely satisfactory:

The land to be sold on thirty-six years' time, with an initial cash payment of 5 per cent, with interest payments of $4\frac{1}{2}$ per cent and amortized annual payments of principal of $1\frac{1}{2}$ per cent beginning at the end of the fourth year, the settler to pay for his land and have a clear title in the payment period by paying $4\frac{1}{2}$ per cent on the cost the first four years and 6 per cent on the cost of the remaining thirty-two years. Each settler should be required to have capital enough to pay, in cash, one-fourth the cost of all improvements made by the State; payment of the remainder of the cost of improvements to be amortized and bear the same interest as the payments on land. With these terms of payment for land and improvements it is believed that existing financial institutions can give whatever credit is necessary in buying equipment, including dairy cows.

Selection of Colonists.—The selection of colonists should be entrusted to a board, the subsequent business management to be in the hands of a single competent superintendent reporting to this board. The State Agricultural College should make systematic provision for giving advice and information regarding farm management and cultivation. The superintendent would give advice about buying livestock and equipping farms. The State should, by contract, build houses, level land for irrigation or loan money to settlers on insurable improvements carried out under the direction and to the satisfaction of the authorities in control, a conservative maximum limit to be fixed.

The prices of farms after subdivision should be so adjusted as to pay for land lost in roads and canals, also interest on the cost of the land between time of subdivision and time of settlement and all other incidental expenses. In Australia 15 per cent was sufficient to cover the above items.

The selection of the land should be entrusted to an expert committee, the purpose being not to enhance or depress prices, but to buy land at its productive value. If this were understood, it would be a guarantee to settlers that they were getting their money's worth. The character of various State commissions shows that there will be no difficulty in the appointment of one in whom the public would have implicit confidence, and who would see that a price was paid for land which would be fair to landowners and settlers alike.

Making settlement a public matter and using the wisdom and experience of the world in shaping our methods and policies will not only attract people here, but will do more to make California a desirable place to live in and secure a better use of our resources than can be accomplished in any other way.

DO YOU KNOW YOUR YEAR'S RECEIPTS?

A farmer is sometimes disappointed with the results of a year's work because the cash receipts for that particular year are low. A careful inventory of capital on hand will often show him that he has done very well. Records gathered from about 700 Missouri farms show that about 25 per cent of the total receipts from these farms was from increase in young stock, feed, crops held for sale, and other items of farm capital.

The record of a young Missouri farmer who is keeping cost accounts in co-operation with the Agricultural College, showed a total capital of \$5577 on March 1, 1914. His inventory showed he owed \$4000 of this. March 1, 1915, his inventory showed a total capital of \$5526.96, but he owed for only \$2410 of this. He was worth \$3116.96 March 1, 1915, making a gain of 1539.96 for the year.

A new Government Station is being opened at Martinez which is to work on cereals and forage crops. Messrs. Urban and Packard have been transferred from the South Pasadena station, which has been discontinued, to have charge of the new work.

TALKS ON Nitrogenous Fertilization

Number 3

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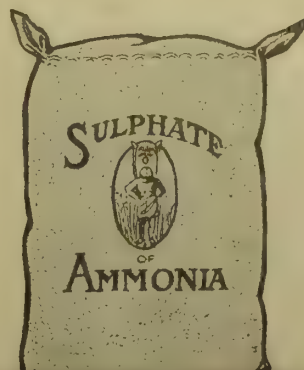
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Possibilities of Rice Flour.

[Written for Pacific Rural Press.]

"We have 50 salesmen on the road soliciting orders for our goods and most of them report a heavy demand for rice flour from retail dealers and bakeries. This demand has been increasing so rapidly that we are preparing to manufacture rice flour in large quantities."

This was the statement of district manager of a large milling company, when asked as to the commercial aspects of rice flour, which is exciting no small amount of interest in rice-growing districts of the State at this time.

"Our original idea in making what we term 'rice bread' was to supply our customers with a novelty—consumers always want something new—and we thought it would soon run its course, but instead we find a steadily increasing trade for it. From the start we have had a big run on it from our farmer trade, every rice grower apparently deeming it good business to eat rice bread."

The second speaker was proprietor of a bakery in Yolo county, who continued: "So far there has been no economy to us in using rice flour, as we have had to use flour of last year's milling, bought early in the fall when wheat flour was cheaper than it now is, but we hope to get it for less money, as soon as the new crop is milled, than the present price of wheat flour."

"We can only use a relatively small amount of the rice flour though, from 14 to 20 per cent of all the flour used in bread-making, as larger amounts make the bread soggy. It is more difficult to make 'rice bread' than wheat bread and it takes some practice to get used to it. The chief advantage of 'rice bread' is its moisture-keeping qualities. It does not dry out nearly so fast as wheat flour bread and we

have a nice trade from families where the children have to carry their lunches to school. A number of customers also buy it exclusively for breakfast toast, as it browns nicely on the outside, yet remains soft on the inside. We expected that our 'rice bread' sales would cut in on our other sales, but find this is not the case. We sell as much wheat bread as ever."

The history of rice flour in this country seems to be a short one and therefore it is difficult to tell its economic possibilities. So far as the writer has been able to learn, a California miller was the first one to manufacture it in commercial quantities, using broken rice known to the trade as "screenings" and "brewer's rice" and putting it through the same milling process as wheat.

Ordinarily its price will be little if any less than wheat flour, according to our miller informant, for the reason that there is usually a market for the broken grain among the brewers. There are on the average 10 per cent of screenings and from three to four per cent of brewer's grain in each 100 pounds of paddy. At the present time these broken grains have a market value to the brewer of about three cents a pound, while rice flour has been quoted this fall at \$3.90 a cwt. This difference of almost a dollar a hundred makes it profitable for the mill to turn the product out as flour at a price which in ordinary times corresponds very closely to that of wheat flour.

In view of these conditions and the further fact that commercial rice is too expensive to use in flour-making as a competitor to wheat flour, it seems evident that any great success in the promotion of rice flour will result chiefly from the creation of a taste for it among consumers who prefer it to wheat bread.

Uncle Sam Potatoes.

To the Editor:

Where can I get pure seed potatoes of the Uncle Sam variety? I have had great success with them in Contra Costa county, but the last seed proved to be something else, probably a mixture. Would like to plant in March or not later than mid-April, and dig in June or not later than August. The soil is silty sediment, twelve feet underlaid with water-bearing gravel. The Uncle Sam potatoes cook up dry and mealy, so much so that I have received many inquiries for that sort. Several others proved to be poorer bearers, some of them running very much to tops, and making long, stringy potatoes.

[Answered by W. V. Shear, State Inspector of Certified Seed Potatoes, Stockton.]

This variety, under this name, is grown only in a very limited way. It is, to all intents and purposes, the same as the Gold Coin and Green Mountain, the latter name being the proper one as it is the oldest. I have a very fine lot of this seed grown in Contra Costa county and which will yield about twelve tons per acre this year. They are now (Dec. 7) being harvested and I intend planting a good many of them myself for medium early crop. They are a standard variety of exceptionally good quality and good yielders.

They are not extra early, but their greater productiveness over the earlier varieties make them a profitable kind to use.

I shall be pleased to co-operate with you in the matter of good seed potatoes. The question of varieties is such a complicated one—a single variety often being sold under several different names—that it is very difficult for any one but an expert to make anything out of potato varieties.

NOTES ON OLIVE PRUNING.

[Written for Pacific Rural Press.]

In pruning olives, if there is lots of new wood, thin it out and cut it back so there will not be too much crop. An overheavy setting of fruit means not only small fruit but also not enough wood growth for following year's crop. These principles are pointed out by Horticultural Inspector Elmore Chase of the Fair Oaks district of Sacramento county. This is especially necessary with Manzanillos, according to T. J. Meader of the same district. G. L. Camden notes that olives do not mature to good quality if there is too heavy a crop. For young olive trees,

E. K. Carnes believes in leaving all the brush on the first year, to make the framework stocky.

The preliminary report of the Department of Agriculture at Washington shows that the total crop of sugar-beets of the country this year

was 6,671,000 tons against 6,150,293 tons last year. Average price this year \$6.17 per ton against \$5.67 per ton last year. Of this amount California raised 1,433,000 tons against 1,249,111 tons last year and growers received this year \$6.44 per ton for their beets against \$5.86 per ton last year.

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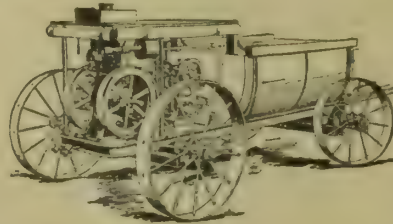
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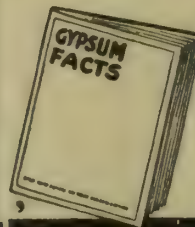
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United States Fertilizer Investigations.

The annual report of the Chief of the Bureau of Soils, U. S. Department of Agriculture, announces that the fertilizer investigations of that bureau have been established as a separate administrative unit. The work of the division is divided along three lines which deal respectively with the three fertilizer ingredients—potash, nitrogen, and phosphates.

Potash.—A plant will be erected on the southern Pacific coast to experiment on a commercial scale with the problem of extracting potash from kelp. This experimental plant is made possible by a special appropriation of \$175,000 for this purpose. The bureau also is co-operating with cement mills and blast furnaces to determine by analysis whether the potash now lost warrants the necessary expense to recover it. It is investigating the question of extracting potash from wool scourings and is making an effort to get in touch with companies in the country which are engaged in cleaning raw wool on a large scale. The bureau also has published a number of alunite determinations dealing with various methods of treating alunite for potash.

Nitrogen.—The bureau has equipped a laboratory at Arlington (Va.) Experiment Farm, with apparatus for testing the different methods proposed for fixing atmospheric nitrogen; and contracts have been let for much additional equipment to extend this work.

In connection with the work on phosphates, an electrical furnace has been in operation working on the problem of volatilizing phosphoric acid and fixing nitrogen in one operation. Apparatus has also been installed for experimenting with the Ostwald process of oxidizing ammonia for the production of nitric acid. Both these projects are attended with technical difficulties and no important results can yet be announced.

Investigations on city wastes have been continued and an apparatus and processes for rendering garbage and other similar wastes have been devised, which it is believed will prove superior to those now in use for this purpose. A full report on city wastes is now in course of preparation. Some work also has been done in determining the availability of various nitrogenous fertilizer materials when applied to the soil, and this work is being continued.

A study of the subject of ammonia from the by-product coke ovens has been made and published.

Phosphates.—At the Arlington laboratory an electric furnace has been installed and work on the volatilization of phosphoric acid from phosphate rock has been begun. A Cottrell precipitator was installed and while minor adjustments remain to be made, the essential fact that phosphoric acid may be economically collected in this way has been demonstrated.

A process for producing sulphuric acid has been perfected and patented which gives promise of being much more satisfactory than the process now in use.

General.—The problem of producing concentrated fertilizers containing all three fertilizer ingredients or

any two of them has been attacked from several directions; and methods have been worked out in the laboratory for producing ammonium-potassium-phosphate, potassium-phosphate, and ammonium-phosphate by processes which are new and very promising. Patents on all these processes, for the benefit of the people of the United States, have either been secured or have been applied for.

FORMALIN TREATMENT FOR POTATO.

To the Editor: In your book, "Second Thousand Questions," you say to use formalin for soaking seed potatoes to prevent scabbing in very rich ground. How do you use the formalin and where can I get it?—M. McD., Schad.

Get it at your drug store. Soak the whole potatoes for two hours in a solution of 30 gallons water per pint of formalin. Then cut and plant; or dry the tubers if they are to be kept long before planting. It is not poison, and will prevent scab

if the soil has not been infected within two or three years and if the potatoes are not re-infected by using old boxes or sacks, etc. Scabby potatoes fed raw to livestock will infect the soil through the manure.

APRICOT TREES



Mr. Leonard Coates.

No more profitable fruit to raise in suitable location than

APRICOTS

We have a good stock
Also of

CHERRIES,
PEACHES,
ALMONDS,
PRUNES,
PEARS,
APPLES,
BERRIES, ETC.

Our Ornamental Stock larger than ever. Landscape Gardeners would do well to write.

Our COATES FRENCH PRUNE TREES are selling fast.

Leonard Coates Nursery Co.

Morgan Hill,

California.



POWER

Plow deep if you want to increase the fertility of your soil. Subsoil, if you want to break up the hardpan. Build gopher ditches if you want to drain. But you must have POWER—unusual power—for this heavy work.

You can't do such work with horses. You can't do it satisfactorily with other tractors. With the Caterpillar you CAN do it. The Caterpillar has the POWER for heavy work, the dependability that makes the work run smoothly, saves delays, at a minimum cost for operating and upkeep.

Holt construction explains why the Caterpillar wins out in competition—explains why the Caterpillar saves money for the farmer by doing more work at less cost—explains Caterpillar endurance—explains why the Caterpillar

was awarded the Grand Prize at both California expositions.

Catalog 343 tells you the things you want to know about tractors and about the Caterpillar in particular. It tells how the Caterpillar tracks prevent soil-packing, prevent waste of power from slippage. It tells about the famous Holt engine, the simple, easily understood and cared-for construction throughout—in fact the things that have made the Caterpillar the leading tractor in the United States today. Write today for Catalog O 343.

CATERPILLAR

Reg. U.S. Pat Off.

THE HOLT MANUFACTURING CO., INC.

STOCKTON, CAL.

SAN FRANCISCO, CAL.
SPOKANE, WASH.

LOS ANGELES, CAL.
PORTLAND, ORE.

Mechanical Power on the Farm.

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of your experiences and troubles.

LAND CLEARING METHODS.

[By Thos. Cunningham, Farm Manager for Western Fuel Co.]

There is on each acre of land a given quantity of wood to extract from the ground and burn. There is also a given quantity of soil to handle in grading and leveling the ground to make it suitable for farm implements to do their work on. All this work requires power to accomplish, whether it be machine power, horse power, manual labor or explosive powders. We cannot get away from these facts.

Methods of Stumping.—Stumping may be divided into five distinct methods: (1) By burning in the ground; (2) destroying by chemicals; (3) digging out by manual labor; (4) by blasting and then burning; (5) by pulling the stumps and then burning.

Burning in the ground has been advocated and experimented with in several ways, the principal ones being "the charpit method," the "forced draft method," and the "air-tight dome method." The charpit method requires much preparation in the way of gathering sufficient small wood to give the fire a proper start and also in banking with dirt. Again, not all soils are suitable for use in banking with dirt. There must be sufficient clay in the soil to allow it to bake, otherwise it will fall in and smother the fire. Also, it is only in the very dry

considered as a practical proposition.

Pulling and Blasting Combined.

—In an experience gained by clearing some four hundred acres of land I have come to the conclusion that a combination of pulling and blasting is the only practical way to clear land. That is to say pull out the smaller stumps whole. Then blast the larger stumps and pull out the remaining portions, if any, and burn.

powder manufacturers.

Stump Pullers.—Gasoline and steam donkey outfits have their use in sections where labor is not easily procurable, but the cost of the outfit is heavy. Their bulk and weight makes their transportation from one point to another extremely costly. The operating gangs of such outfits are high-priced men.

The cost of upkeep in the way of cables, blocks, etc., is high. When the power is suddenly applied to a heavy inert mass, such as a stump, the sudden jerk places a tremendous strain on ropes, blocks, etc., causing many breakages and delays. Delays with a high-priced gang mean additional cost. Theoretically, there

12 feet up the tree. I took hold of the lever and pulled the tree down myself in eight minutes. I bought the machine on the spot and have pulled the stumps from 30 acres of land with it since, the machine costing nothing for repairs.

While pulling a stump I keep a man with a mattock knocking the dirt from the roots as the stump is raised and allowing it to fall back into the hole made by lifting of the stump. By doing this the ground is left nearly level and requires very little grading afterwards. The slow traveling movement of the pulling cable allows time for the roots to worm themselves clear of the soil, and thus make a clean extraction.



and resinous stumps that the fire will follow the roots below plow depth. I have seen demonstrators of the forced draft on green fir stumps give up in disgust.

The air-tight dome method is similar to the charpit method, only that instead of banking with dirt an air-tight dome made of sheet metal is placed over the stump.

Destroying by chemicals has been advocated. A hole is bored in the stump and equal portions of nitric acid and sulphuric acid are poured in. Then the opening is tightly plugged. It has been claimed that this method will destroy a stump in the course of two or three months, but I understand the U. S. Department of Agriculture has investigated this method and met little success. Digging out by manual labor is too slow and costly to be even

Blasting.—In preparing to blast a stump, dig well under the body of the stump, taking care to have the powder placed under the point of greatest resistance. In case the center of the stump is weak leaving a foot to eighteen inches of soil between the powder and the body of the stump distributes the energy created by the explosion of the powder more evenly over the root system and tends to prevent breaking of roots in the ground. Another very helpful plan in blasting is to wind a piece of old wire cable round the top of the stump before blasting. This holds the top of the stump together and gives a cleaner upward lift. In blasting stumps do not use high percentage quick-acting dynamite. Use stumping powder, or lower percentage dynamite which is manufactured by all responsible

is no necessity for a sudden jerk with these engines, as they are supplied with a friction gear, but did you ever watch the sudden slam and then the quiver of the suddenly tightened rope on a donkey engine?

Horsepower pullers are not subjected to such strains when the team is handled carefully; they produce tremendous power, and the team is handy to move the outfits.

One hand-power stumping machine we have in mind weighs about 171 pounds and can be wheeled around like a barn truck. It is built on the double-action pawl and ratchet principle. I heard about this machine last fall and traveled twenty miles to see it, very skeptical as to the stories I had heard about it. The agent attached it to a standing tree (fir) about 36 inches in diameter, placing the cable about

THE LATEST VINEYARD TRACTOR.

[Written for Pacific Rural Press.]

The latest in tractors, a machine that will not be on the market for twelve months, is the 1700-pound wheel type made by R. Hamilton, an orchardist of Sonoma county.

A high-speed motor is mounted between two wheels about 2 1/2 feet in diameter and 3 feet apart. All gearings are in oil. On the rims of the wheels, sharpened U bolts with legs eight inches long are fastened for grousers. These are kept from plugging up with mud by a fixed arm which cleans out mud, if any collects. Bands may be quickly bolted over the grousers for road work, but its purpose is for 5- and 10-acre vineyards and its speed only 1/2 to 2 1/2 miles per hour.

On the back of its frame is a quarter-circle cog in which the steering gear works. The steering gear and the driver rest principally on two smaller wheels and "the tail wags the dog." The plow is raised and lowered by the engine operator from his seat while running. There are four axes for the tractor and its plow to turn on, thus keeping a more even traction on the turns, and enabling the machine to turn in a very small circle. The wheel base is just about four feet.

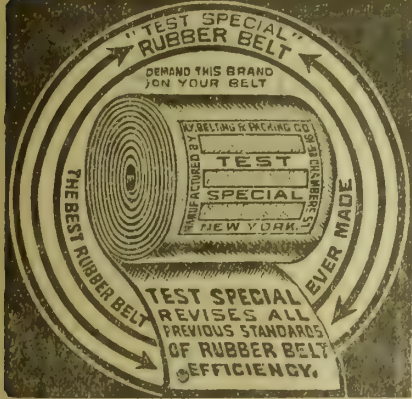
Mr. Hamilton showed his machine in public for the first time at the State Fruit Growers' Convention, Napa. It pulled two 10-inch moldboards easily in the orchard demonstration and did not get stuck in the artificial mudhole made in the field to show that it "did not need web feet." He claimed it would pull two ten-inch plows up a 10 per cent grade in dirt such as ordinary fruit growers consider in condition for plowing. He had worked this machine satisfactorily for six weeks.

GASOLINE MIXED WITH KEROSENE.

To the Editor: Gasoline leaked onto a container of coal oil on which

Belting

That Must Make Good



When you buy a rubber belt you should know what service it will give you or have the belt service guaranteed by a responsible firm who will make good in case the belt falls down. Every belt-buyer should know how to judge a rubber belt, and we would like to send you a free sample of **Test Special** together with our folder that will tell you just how to judge a rubber belt so that you may know just what service you will get from any belt you buy.

Fill out the coupon and mail it to us and we will recommend a belt that we will unqualifiedly guarantee to do your work satisfactorily. We have had seventy years' manufacturing and selling experience.

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Established 1846
FILL OUT THIS COUPON—MAIL IT TODAY

New York Belting & Packing Co.,
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Send me samples of Belting that you will guarantee to give satisfactory service on my work and quote prices delivered at

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Gasoline Engine _____
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Diameter { Driving Pulley _____
in inches { Driven Pulley _____

Kind of { Cross _____
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Width of Belt _____ Ply _____

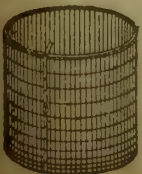
Distance Between _____
Centers of Pulleys {

Revolutions per Min. _____
of Driving Pulley {

Kind of Mach- _____
inery Driven {

My Dealer's Name _____
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A pocket memo booklet giving speed and power tables will be sent FREE to all who mail this coupon.



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SILOS**
Steel and Wood.
Windmills, Frames,
and Towers,
Water Troughs,
Prices the lowest.
640 So. Center St.
BROWN & DYSON
STOCKTON, CAL.

the cap was not tightly screwed down. How can I determine the condition of the oil?—M. G., Lincoln.

By the gravity and flashpoint tests, one of which requires a special instrument which you might borrow from a garage, and the other of which requires an accurate thermometer and lots of care. Heating the oil to the point where its gasoline would be evaporated, stirring it, and not exposing it to the flame but doing the work well away from any buildings, would make the kerosene safe to use, but we would let John D. do it. To use this oil as you now have it, on a tractor, would require a special carbureter which would have to be specially adjusted.

A CONVENIENT FEED TRUCK.

[Written for Pacific Rural Press.]

Some of the most practical and convenient equipment we have ever seen on ranches was home designed and home made. Such is the case with the hog-feeding and mixing truck on the S. G. Owens ranch in Madera county.

This truck closely resembles the old-fashioned push cart, having two iron wheels from which are extended on either side a one-inch pipe. This pipe forms the underneath support of the truck and extends out from the axle, being bent at the ends so as to form a handle, behind the truck bed.

On top of this framework has been fastened a galvanized iron tank, 18 inches high, four feet long, 20 inches wide across the bottom and 26 inches across the top, with the top edges bent over to give it strength.

This holds three sacks of feed and is water-tight so that mixing can be done any place as well as feeding, it being narrow enough that it can be wheeled down between the farrowing pens, and large enough that all of the grain ration for each feeding can be mixed and loaded at once.

BRIDGE RAILINGS.

To the Editor: Is there no law to compel railings on bridges which are 4 to 8 feet above ground?—J. D. P., Laton.

State Highway Engineer A. B. Fletcher writes: "We know of no statute requiring the construction of railings on bridges. There may be county or local ordinances.

TRACTOR POINTERS.

Be careful not to get too much priming in the cylinders.

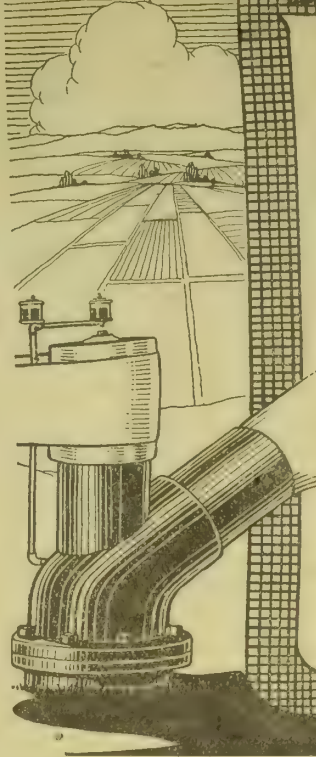
Too much oil collects dirt, but too little oil makes big repair bills.

Spend as much time per week overhauling your tractor as you used to spend per day harnessing horses.

Gas savers give manufacturers lots of work reboring cylinders and making other repairs; but when they do it they plug the hole drilled for the gas saver and solder it. The extra air admitted through the gas saver overbalances the carburetor adjustment and makes a lean mixture which heats up the cylinder and gives you "the quickest boiling motor." If air is leaking in and the motor overheating, it must be quickly remedied.

Gaskets at the intake to the cylinder must be absolutely air-tight or your explosive mixture will be di-

Layne & Bowler PUMP



A Dependable Water Supply

You cannot afford to gamble an entire season's crop against an uncertain pump. You must be insured against water shortage and keep things growing, by using a dependable pumping system. The Layne & Bowler Pump has demonstrated under all conditions its ability to produce more water economically than other systems. "If there is any water in the ground, the Layne & Bowler Pump is sure to get it." Built to meet all conditions—to overcome every pumping difficulty; constructed to produce more water at less expense.

Write for Catalog No. 25. It gives complete information.

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Saves the Bearings

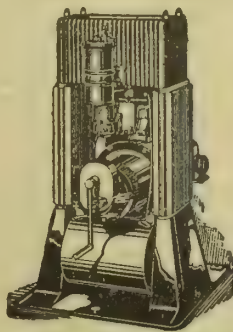
Zerolene is made from Asphalt-base crude. Its lubricating value is not affected by the heat of the motor.



ZEROLENE

the Standard Oil for Motor Cars

Sold by dealers everywhere and at all Service Stations of the Standard Oil Company (California)



Uni-Lectric
GASOLINE-ELECTRIC UNIT
LIGHTING SYSTEM

Electricity for Farm Homes

At one-third cost of juice from Power Company (this includes interest on cost of plant). It is the simplest and most economical plant on the market. **No Batteries - No Switchboard - No Rheostat.** Will operate 50 lights 7½ hours for 11c. Will also operate electric fans, irons, small motors, etc. If your buildings are not wired, send us plans and we will give you full instructions so that you can wire them yourselves. Material furnished at lowest cost.

Karl A. Hedberg
ELECTRICAL ENGINEER.

104 Clay Street,

San Francisco, Cal.

For Every Purpose NEW Second Hand and NEW
Threads & Couplings Hot Asphaltum Dipped
P I P E
Fittings and Screw Casings Valves Guaranteed for Pressure
Pacific Pipe Co.
Main and Howard Streets, San Francisco, Calif.

luted with uncontrollable air. Test them by putting oil over them and, then turning the motor over.

If there is a whistling noise at

the butterfly valve in the intake it indicates a leak which must be stopped. All air should go in through the carburetor.

General Agricultural Review.

FIELD NOTES.

On January 1, 1917, there will be a Tournament of Roses in Pasadena.

Turlock shipped 1,340 carloads of cantaloupes during the past season.

The barley supply this season in Calif. is reported to be much below that of last.

Prices of celery are the highest ever known in that industry, ranging about 40 cents per dozen.

Rice culture has extended into the southern section of the San Joaquin valley.

A new packing and shipping house will be established in Placerville by the Pioneer Fruit Company.

Frank Vegar of Lordsburg is exhibiting a pumpkin vine in the Chamber of Commerce at Pomona that is 90 feet long.

It is said that eight large plants have been erected in Southern California for the extracting of potash from kelp.

The Department of Commerce, Bureau of Census, reports that 14,707 bales of cotton had been ginned prior to November 14, 1916.

Italian rice is said to be best adapted to San Joaquin conditions according to Farm Adviser Frank F. Lyons. The Japanese variety does not thrive well.

Oakdale farmers have started plowing again, though some of them are worrying about the extra fifty cents an acre the seed is costing. Seed barley is selling at \$2.40.

The Spreckels' Sugar Company at Salinas had a record season. It was a fortunate one for the beet farmer as the rains did not interfere with the harvesting of the beets.

One hundred and ninety thousand sacks of early rice were produced on the 5,000 acres of the Dodge Rice Company's ranch, between Chico and Butte City, this season.

Asparagus experts have found that there is a large area of low land, sub-irrigated, in the Turlock District, which is suited to the production of asparagus.

George P. Weldon, Chief Deputy

State Horticultural Commissioner, is at work on a pure-seed measure which will be submitted to the next Legislature for enactment into law.

It is announced from China that the American Beet Sugar Company there has advanced the wages of its laborers 2½¢ per hour, making an increase of \$1.50@1.80 per week.

The San Fernando Valley bean crop this year is said to have been the largest ever raised and it was sold at good paying prices. It is put at 2,580,000 pounds.

The marketing of Milo Maize from the Imperial Valley has started in earnest. No less than thirty-seven cars were shipped from Brawley last week.

Porterville appeared in the State markets for the first time this year as a commercial producer of beans. First shipments of 2,000 sacks of the tepary variety, raised west of here, were made to San Francisco.

It is said that the largest sugar beet crop ever raised in the San Fernando valley has just been harvested—163,469,715 tons. Plowing has already been commenced for next year's crop.

Chico farmers are agitating for an appropriation by the State with which to conduct an investigation of the yellow star thistle, which is thought to be too large a problem for the individual farmers to solve.

Eighty-six sacks of pink beans, bringing him exactly \$571.76, or \$95 an acre, was the harvest reaped by Joe Glines, an Oakdale rancher, from six acres on the old T. F. Snedigar place in Langworth, this season.

Potatoes have been a source of wealth in Humboldt county this year. C. W. Travis, who was the first superintendent of the old Visalia-Tulare railroad, says one neighbor of his sold \$1,600 worth of potatoes from eight acres and kept seven tons for seed.

Farmers of the Pixley district, encouraged by the present war-time price of barley, are planting this grain heavily. The Farm Lands Investment Co. are sowing eleven hundred acres, Hazleton & Manley five hundred acres and A. D. Cooksey four hundred acres.

On the first of December there were in the warehouses at Stockton, San Francisco and Porta Costa, 58,577 tons of barley, as against 85,331 tons on the same date last year. Stocks of wheat also show a shortage this year, there being something over 14,000 tons on hand, as against 23,000 tons on the same date a year ago.

Officials of the Farm Loan Board at Washington announced a week ago that more than 50,000 farmers have applied for mortgage loans aggregating approximately \$150,000,000, or more than seventeen times the amount of money which will be immediately available for loans upon the organization of the twelve farm loan banks. Most of the applications have come from the South and West.

An offer from the Sterns-Roger Manufacturing Company of Denver, which has established several sugar mills in Colorado and Utah, to erect a beet sugar factory in Riverside, providing 10,000 acres of beets can be signed up under lease of several years to insure it an adequate supply of raw material, has stimulated widespread interest in the project at Riverside.

It was stated at the recent meeting of hop growers in Sacramento that New York hops have been selling for a price of 55 cents per pound while the California product is being sold to dealers at 10½ cents and 11 cents. The reason advanced for this condition was that the dealers, during the present year, want to encourage the New York growers with large prices so that they may con-

tinue in business, thereby holding them in competition with California growers.

DECIDUOUS FRUITS.

The prospects for a season of heavy tree planting are not good around Stockton.

The prune men of Healdsburg are falling into line in good shape in support of the Prune and Apricot Growers, Incorporated.

Spraying and pruning in the orchards are now in progress, and the outlook for the next season's fruit crop is good.

The work of organizing the prune and apricot growers is progressing satisfactorily in the face of opposition offered by the packers.

There has been shipped from Vacaville this year 100 tons of dried apricots, 225 tons of dried peaches and 3,000 tons of prunes. Good prices were obtained.

Farm Adviser Niles P. Searles has completed arrangements for a series of field and pruning demonstrations in Yolo county, beginning Monday, December 18, and lasting through until Friday, 22.

The Government Station at Walnut Creek, which has done good work in the past in thrips investigation, has been discontinued. A. L. Nougaret of the station will go to Fresno to make further investigation of the mealy bug.

Absence of pear blight is pointed out by C. W. Beers, County Horticultural Commissioner, as a reason for the encouragement of pear-growing in the vicinity of Santa Barbara. Mr. Beers says that the present high price of pears warrants the planting of pear trees in any district where no blight is found.

CITRUS, NUTS, SEMI-TROPICAL.

The Olive Products Company of Oroville began crushing olives in its new plant last Monday.

Mayor Frank Clinton of Ontario, a well-known orange grower, died last week, aged 61 years.

Two cars of Lindsay oranges were turned back from Barstow because they did not come up to the 8-to-1 test.

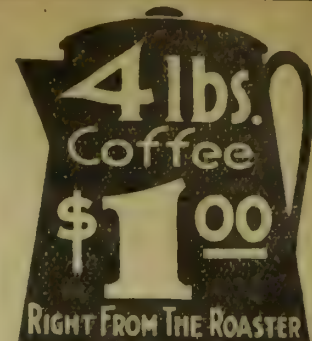
Shipments of oranges from Porterville, despite the shortage of cars, had reached 1046 cars up to December 3.

Riverside went through the coldest night of the season with no damage whatever to citrus fruits; though the thermometer touched 27 degrees for a brief period in some sections.

Orland oranges are among the finest in northern California, both in color and flavor, according to one of the expert packers who are handling the local crop.

The warehouse of the Santa Barbara Walnut Growers' Association in Carpinteria has handled approximately one hundred and fifty tons of walnuts this season.

Orange growers on the Orland project have organized the Orland Citrus Association which will work with the California Citrus Exchange, through which organization the output of this district is marketed.



3½ lbs., \$1.00; 3 lbs., \$1.00
NO MONEY FOR COFFEE!

WILSON'S OFFER—
Wilson will parcel post any of the above grades, all charges paid. You use 1 lb. If it is unsatisfactory, return the rest, and Wilson will send you postage.
MIND YOU, NO CHARGE FOR THE POUND USED.
If you are pleased and keep the coffee, you agree to send the \$1.00 within 10 days.

IS THAT FAIR?
When ordering, kindly state how you want coffee ground—fine, medium, pulverized, or in the whole bean.

WILSON'S
968-970 Market St., San Francisco

Orchard Heating

WITH

BOLTON Orchard Heaters

PREVENTS

Frost Damage

IN YOUR ORCHARD

1 and 2 Gallon Capacity.
SEND FOR BOOKLET.

The
FROST PREVENTION CO.

Merchants' Nat. Bank Bldg.,
San Francisco, Cal.

Budded Avocado Trees

Write for new descriptive Catalog. Largest and most complete stock in California.

Newbery-Sherlock,
R. F. D. No. 2, Pasadena, Calif.

In Ventura the thermometers in the big lemon groves at Limoneira registered 29 degrees during the heaviest frost. All the smudge pots owned by the big ranch were fired up and ready for business.

A GOOD CHRISTMAS BOOK.

If you are a lover of flowers, or some one you know is a gardener, why not make yourself or the other party a Christmas present that will be useful, distinctive and one that will be a joy for years to come to its owner?

CALIFORNIA GARDEN FLOWERS, TREES, SHRUBS, AND VINES.

Is nicely printed and illustrated, bound in cloth, and tells what you want to know when you work with flowers.

Read what last Sunday's Oakland Tribune says of this book:

WICKSON GIVES USEFUL ADVICE.

Of all the garden books best worth the reader's time, whether he is seriously planning to make his garden enclosure bloom as the rose, or has merely a cursory interest in flowers, Professor E. J. Wickson's "California Garden Flowers" is without a peer. It is written with a love of the tiniest flower and the most stately palm, and with the experience born of experience in the bay region with the use of the hoe and spade.

Price, \$1.50, postpaid.

Pacific Rural Press, San Francisco.

CORY'S MAMMOTH

THORNLESS

Blackberry

No briars to tear the hands or clothing—an economy at harvest. The earliest berry to ripen—a guarantee of profit at market. A prolific bearer of gigantic fruit—insuring quantity. A luscious, almost seedless berry of unsurpassed flavor—the final requisite.

Thornless Quality

Is guaranteed. Affidavits furnished. Supply limited. Booking orders now. State quantity and ask for prices.

Ekstein Nursery Co., Modesto, Cal.
SOLE DISTRIBUTORS.

SEED POTATOES.

H. A. Hyde, Watsonville.

After digging and checking orders booked, I find I have 4000 sacks to offer. Advise wiring.
Small Stock American Wonder.
Burbank California Certified.
Oregon Stock Hill selection as follows:

Burbank, High-Top Burbank, White Star, Multnomah, Snow.

Several hundred acres of the 3,500 acreage of the Italian Vineyard and Wine Company, at Wineville, and on the eastern outskirts of Cucamonga, will be planted during the next few months to walnuts.

Almond nursery stock is in such demand that the price of the trees has jumped several cents during the past week. They are being set out in large numbers in Butte and Colusa counties.

Frost is said to have caused some damage to oranges in the section around Porterville and Lindsay. The damage in most cases was in orchards on the lowlands, the fruit in the higher section of the foothills escaping.

The recent rains were general throughout Southern California and are said to have done much good. The citrus fruit trees were given new life and the oranges and lemons washed of dust and the late oranges and lemons rounded out by the increased moisture.

State Horticultural Commissioner George H. Hecke has issued a formal order exempting Arizona from the quarantine established by California on the citrus canker, Arizona having adopted rigorous preventive measures to rid the State of the pest.

Word comes from Oxnard that the first shipment of lemons from Pleasant Valley, near Camarillo, was made last week by W. P. Daily. Mr. Daily has had lemon trees in his yard for over twelve years, which have never been hurt by frost. The big freeze of 1913 did not touch the trees, and this first caused the belief that in Pleasant Valley was a new frostless belt for lemons.

The first carload of Sunkist (8-to-1) Navel oranges sent East this season were shipped on November 9 from Thermalito, one of the most northerly orange-growing sections in the State. This carload and the three others which followed from Thermalito on Nov. 12, and Nov. 14, were all sold at \$4.35 for the "Gold of Ophir" brand (fancy) and \$4.00 for the "Table Mountain" brand (choice)—three of them at Omaha and one at Albert Lea, Minn.

The 7th national orange show, to be held in San Bernardino Feb. 20-28, will conduct an extensive automobile and industrial display. Additions to the industrial features of the orange show have been brought about by requests from citrus fruit sections all over the State. The citrus fruit section will contain nothing but the millions of oranges and lemons in competition for the world's prizes. California this season will ship close to \$50,000,000 in citrus fruits, it is estimated.

GRAPES.

Prof. F. T. Bioletti will visit Hanford December 20 to instruct growers in methods of pruning. He will give practical demonstration of vine pruning.

J. W. Jeffreys, the viticultural expert, has been sent by the Viticultural Commission to Dinuba. Very little of the new disease has as yet appeared among the vineyards of that section, but inasmuch as the new disease has appeared in vineyards of the valley, a careful investigation will be made by Mr. Jeffreys there.

MISCELLANEOUS.

The car shortage is being relieved and crops are moving rapidly to market.

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WRITE

J.B. WAGNER
Rhubarb, Berry & Cactus Specialist
PASADENA, CALIFORNIA

Farmers of San Joaquin county have already made application for \$215,000 from the Federal farm loan banks, it is estimated.

The Winters Canning Company of Suisun packed over 60,000 cases of fruit and about 15,000 cases of tomatoes, all of which is under contract for sale for good prices.

The balance of \$750,000 due on the famous Fair ranch, near Knights Landing, and several thousand acres of land adjoining, which was sold in 1913, has just been paid.

The cost of making sales of government timber on the National Forests in California was cut from 39 cents to 31 cents a thousand feet recently.

Over 5,000 letters of inquiry have been received by the U. C. Horticulture-Pomology division and as many answers returned to the questions sent, says the Univ. Farm Agrícola.

The State budget board, consisting of three members of the Board of Control and State Controller John S. Chambers, has tentatively agreed to include in the budget to be submitted to the Legislature bills calling for \$300,000 to erect a fireproof main pavilion for the State Fair and \$62,500 for the purchase of additional grounds for the State Agricultural Park, in Sacramento.

Ventura county thinks the office of county farm adviser does not produce results commensurate with an annual maintenance outlay of \$2,000, according to the county supervisors, who have abolished the position, effective January 1. Ventura is the first county in the State to drop this new feature of government. The work of the bureau will hereafter be handled by Horticultural Commissioner Brock.

That the landowners of the Orland Federal Project may have an equal opportunity to take advantage of the rural credits act with the rest of the farmers of the country, a petition is being circulated by the local Farm Loan Association asking Secretary Lane, the Federal Farm Loan Board and Congressman Kent to use their influence in amending the act. The law was passed so that Federal projects are barred from loans inasmuch as the project was built with Federal bonds.

ALPAUGH IRRIGATION PROGRESS.

The farmers of Alpaugh a little over a year ago united in forming what is now known as the Alpaugh Irrigation District for the purpose of bringing water from Smyrna, a distance of ten miles, to be used for irrigation purposes on their respective farms. At Smyrna they have eight electric pumping plants, of which five are ready for business and the other three should be very soon.

The main canal banks have been reinforced and the 70,000-gallon tank completed. Four-fifths of the pipe is laid and pumps and engines are being installed at their domestic station. The entire system is scheduled for completion by Dec. 15. At the last monthly meeting which was held Dec. 4, the District farmers seemed enthusiastic over their enterprise.

TULARE COUNTY CITRUS FAIR.

The Tulare County Citrus Fair opened at Visalia on Wednesday of last week. President Wilson at the White House pressed a button which switched on the lights in the big tent that holds the exhibits from the various sections of the county. These exhibits, made up not only of citrus fruits, but deciduous fruits and farm products in general, were very artistic and of real educational value as well.

The livestock show, though an afterthought and hurriedly gotten up, was a credit to the breeders of the county and especially to the promoters, Arlington Smith and John P. Walker. A full description of this feature, together with awards, will appear in next week's issue. An excellent showing of poultry was another interesting feature.

R. D. Robertson of the U. S. Dept. of Agriculture, investigating the rice industry in this State, reports the acreage devoted to that cereal in 1916 was as follows: In Sacramento valley 64,000 acres, and in the San Joaquin 3,200 acres. The prospects are for a considerably larger

acreage in the Sacramento section next season, possibly 75,000 acres will be seeded. The marketing association planned to handle this season's crop did not materialize, owing to the fact that Orientals having leased land refused to sell their rice through the exchange.

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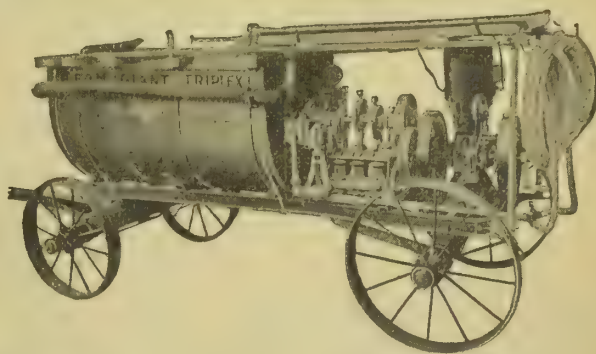
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Livestock Facts and Fancies---XII.

[By the Editor.]

The sweeping victory of University of California Farm exhibits in their classes at the Chicago fat stock show was set forth by this journal in its last issue. This fact is very sig-

nificant in many ways and we expect to draw many lessons from it, from time to time, as they seem pertinent. Just now it occurs to us to write a little about its general significance as manifesting, the triumph of the educational effort which has been put forth in this country, during the last two or three decades, for the development and advancement of the livestock industry. We undertake no analyses of causes, agencies, methods and effects. Such effort belongs to some profound specialist. It is for us merely to glance at the fact through the eyes of a common observer.

We remember the tumult which followed the first victory of a student-fed steer at a fat stock show in competition with farm-fed entries. If our memory is accurate it was the students of the Iowa Agricultural College who put over this outrage on the practical men and the latter surely did raise much of a rumpus. "It is unfair," said they, "for a lot of kids coached by a lot of visionary professors to pick a 'feeder' and feed stuff which the State paid for, to invade the domain of practical men who had to buy feed and pay taxes. What was the college for, anyway? Was it to help the farmers or beat them out of their boots?"—and much more like that. Of course the issue raised against academic freedom in selecting ways and means of instruction was really laughable, but it blinded a lot of people for a time. Then, gradually a few things dawned upon the intelligence of the practical men of the Middle West. It occurred to them that they had tried at first to impeach college instruction in agriculture as "theoretical" and "scientific" and had threatened to choke the public funds out of it because it was not "practical." They remembered that the educators had replied: "If you will give us money

stormed the legislatures to get the money to show farmers how they could make more money. Finally they had the vision to see that they

were now proclaiming unfair the very thing that they had demanded from the college, viz.: a demonstration that instruction could come through with practical results. The first student-fed prize-winning steer was the concrete evidence that the college not only knew how, theoretically, but could do things, in knowledge and handling of animals, which could beat the knowledge and practice of the men who were doing the business the best they knew how at that date. They saw that if the science of the college could not beat them, it would not be worth the money they had paid to get it; and they realized also that the only way such science could demonstrate its power was to let it get into the ring with them and knock them out. And, as the record of creation says: "It was so."

The first student victory in selection and nutrition of feeders, and the last one by the University Farm (which is said to be the broadest victory of its kind ever attained) are the ripe fruit of college effort in research and instruction in the

principles and practices of animal industry, but it is not the only fruit which has been borne upon this tree of special knowledge. The effort to which it belongs has created a splendid American literature of domestic animals and their profitable breeding, feeding and care. It has through books, bulletins and farm papers, made the reasons and methods of better animal industries familiar to all reading farmers and has modified and improved all their operations with livestock. It has illuminated dark places and made crooked ways straight for the advancement of livestock production which superior profits invite and which increasing consumption demands. It really constitutes a condition of preparedness which will enable American agriculture to embrace its opportunity and do its duty with farm animals and their products. We doubt if this qualification of the American farmer could have advanced so fast and so far, in fact we doubt if his attitude toward such advancement would have been so eager and masterful as it is today, if the early students had not led their proud product into the show ring and challenged the attention of the public by their unique victory.

In this writer the achievement of the University Farm students awakens many memories. We have spoken of the early opposition of practical men to placing University products to commercial test as though it were peculiar to the Middle West, but it

instruction in milk handling with text books and laboratory outfit alone, but must have cows, and so bought a few and started a small dairy in the Berkeley hills. When it had cows properly tested, fed and massaged it got a lot of milk which was certified, pasteurized or whatnot and offered for sale on its own delivery route at a price considerably higher than other local dairies charged so that no complaint for underselling could be made. An Oakland lawyer, scenting fees from a scrap, charged the local milk-sellers \$20 per, for a co-operative effort to enjoin the University from selling, and the case came into Court. The University contended that the proper way to handle and sell milk was an important part of its dairy instruction—was, in fact, the only way to determine that its instruction was complete and practical. The judge held that the University had an incontestible right to carry on and carry out its courses of instruction as it desired and chucked the lawyer and his case out of court. A little later, when the University Farm, provided by the legislature of 1905, was equipped with a commercial creamery, in order that dairy instruction might be complete, there was objection raised by adjacent creameries that the State ought not to compete with them in buying milk and selling products. This objection did not reach to the court house because an argument was made that the University Farm could not buy milk to play with, but must use it on a commercial basis to make its instruction complete. This satisfied the objectors and dairy producers generally. They had previously contended that the dairy instruction was not practical, and they soon recognized the fact that they must take the risk of making it practical and withdrew their objections to the University running a real creamery, as it has done ever since that time. Then the question of showing the University Farm stock at State fairs arose, and



California Favorite, Grand Champion Fat Steer International Livestock Exposition, Chicago, 1916. Sired by the Hereford Prince Lad 11th and out of Glenbrook's Marvel, a Shorthorn. Dropped October 15, 1915. Weight over 1400 pounds. Won again 223 entries from U. S. and Canada. Sold for \$1980, or \$1.75 per pound, the highest price ever paid for a prize steer. Was Grand Champion California State Fair, 1916. Bred and raised by University of California.



Fourteen prizes, including a grand prize, were awarded to sheep from the Bishop ranch of San Ramon, at the International Livestock Show, of Chicago. The grand prize was awarded to five yearling rams competing with entries from Great Britain, Australia, South America, Canada, and nearly every State in the Union.

has its history in California also. More than a decade ago the College of Agriculture at Berkeley decided that it could not give practical in-



"University of California Jock," Reserve Grand Champion Fat Steer, International Livestock Exposition, 1916. Purebred Aberdeen Angus, two years old. Weight, 1850. Was P. P. I. E. Grand Champion. Bred and Raised by University of California.

they were shown at first as "for exhibition only." But this was soon seen to be child's play, for there was no test as to actual, comparative character of the exhibits and the State Board of Agriculture ordered them into the regular classes and declared them entitled to all the money they could win from the judges—"and it was so."

And so we came to have in California "academic freedom" in agriculture, a little later but in the same

way as they have it in the Middle West. And so we came also to the brave and reasonable conclusion, on the part of private breeders, that the "perfessers" and the "kids" of the various farm schools shall have perfect right to carry their jobs to their logical conclusions, even if they should wax the ears, horns and tails off from all the privately owned stock they come up against. And that seems to be about what the University Farm stock did last week in Chicago.

Shorthorns Invade Race-horse Home.

[Written for Pacific Rural Press.]

Exit the race horse; enter the Shorthorn cow and Duroc hog. Such is the brief history of the Ormondale company's 1400-acre ranch in the heart of the millionaire colony a few miles west of Stanford University.

In the height of the race horse's popularity Ormondale Farm was known around the globe for its superior quality of horses. Of course that is all over now; but Superintendent Jas. MacDonald believes that there are certain characteristics of the race horse that are comparable to beef cattle.

He believes, for instance, that the feeds grown on the low rolling hills, supplemented with corn silage and other irrigable crops which can be grown on the level lands of the ranch, will develop good sound bone in cattle as it did in horses. Of course there is a difference in the required size of bone but this is a matter of breeding. That was considered when the foundation herd of registered Shorthorns was founded a year ago from the herds of Frank Brown and A. D. Dunn in the Northwest and the T. B. Gibson Est. of Yolo county.

Heavy-boned, thick-meated cattle of Scotch breeding were the kind selected, the herd sire, Golden Goods Jr., a grandson of Choice Goods, weighing 2500 pounds and capable of carrying more flesh for show purposes.

To further strengthen the bone and size qualifications of their herd Mr. MacDonald believes that good care should be given the calf; for unless an animal is given a chance to develop when a youngster, it is pretty apt to be undersized later. With that idea in mind one of the old horse barns has been made into a comfortable cattle stable, having a well-drained concrete floor and mangers, and steel stanchions. Here the breeding cows are fed silage and chopped oat hay and the calves given an opportunity for rapid development on mill feeds as a supplement to their mothers' milk.

In clear weather this barn is not used, the cattle being allowed the run of the various paddocks that formerly served the same purpose for horses. Here troughs are provided for silage.

What this system accomplishes is shown by the bone and growth of the yearling calves now on the place. Almost without exception they are growthy, heavy-boned, straight calves that show a liberal response to past care.

While not so extensively interested in Duroc Jersey hogs as in cattle, it is the intention to breed and feed for bone and early maturing qualities with them also. As with the Shorthorns, the hogs were selected for bone and size as well as type and these qualities will be perpetuated by further selection and good feeding.

From a standpoint of both its present and past history the operations on this ranch are of interest, as it indicates the disposition of men with land and means to do constructive breeding of livestock, a factor which will play an important part in California's future prosperity.

LAST CUTTING OF ALFALFA FOR HORSES.

To the Editor: Several of my neighbors refuse to feed the last cutting of alfalfa to horses, claiming it will sometimes kill them.—G. M. H., Ripon.

Last cutting alfalfa has no injurious effect if dried and fed as the other cuttings, according to Dr. H. B. Wintringham of Petaluma. Mr. Hamlin, who feeds the horses at University Farm and had three years' experience with blooded horses in Nevada, says that no damage comes except scouring where the alfalfa was immature when cut, or improperly dried, due to the poor drying weather so late in the season. The scouring seems to do no particular injury. But be careful about pasturing frosted alfalfa.

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Live Stock and Dairy Notes.

Livestock breeders all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

THE DAIRY.

A. A. Jenkins of Tulare advises us that he has recently sold to E. D. Whaley, a Jersey bull sired by Gertie's Lad and out of Victor Lady Carolyn.

E. A. Noyes, a farmer and stockman of Sutter City, recently received from Omaha two thoroughbred milk cows with which to improve the general grade of his herd.

The herd of imported Guernseys acquired during the past year by B. Nixon for his Revada Farm in Napa county is growing in size, a nice lot of heifer and bull calves having been dropped during the past few months.

The directors of the Exeter Creamery have declared a dividend of eight per cent, after paying off a balance of more than \$2,000 since the first of the year. The monthly business now exceeds \$16,000.

The Northern California Milk Dealers' Association will embrace thirteen counties; namely, Amador, Butte, Colusa, El Dorado, Glenn, Placer, Sacramento, Solano, Sutter, Tehama, Yolo and Yuba. It is proposed to contract for the production of at least 30,000 of the cows.

To the long list of records already to the credit of the dairy herd of A. W. Morris & Sons of Woodland has been added a State record for production of butterfat in an official seven days' test. The new record holder is a splendid young cow, Aaggie Acme of Riverside 2nd.

This State is not buying tuberculosis cows, is the warning issued by Dr. Charles Keane, State Veterinarian, who says that self-styled agents of the State have appeared at several places and have attempted through misrepresentation to bargain with dairymen for cows condemned under the tuberculin test.

The Modesto Creamery has taken the lead in sharing profits with its patrons by announcing a reduction in interest rates on loans to ranchers from 8 to 7 per cent on all loans now outstanding and on all new loans. The creamery has now at loan \$100,000 among the ranchers, which has been used in building up dairy herds.

The cow-testing association organized by the Imperial County Farm Bureau is the largest in the world, according to the Bureau of Animal Industry of the United States Department of Agriculture. The Federal Department says the largest association in the United States of which it has record has 2,500 cows on test. The Imperial Valley Association has approximately 4,000.

Harold McAlister of the firm of McAlister & Sons informs us that he has secured a son of Winnie Korndyke Cornucopia De Kol, the cow owned by the J. S. Gibson Co. of Williams who recently broke the 300-day milk record by producing 27,079 pounds of milk and 1020 pounds of butter. Mr. McAlister states that they are breeding this young bull to their best heifers.

Alexander and Kellogg of Suisun report the recent purchase of 11 cows and a bull of the Dairy Shorthorn type from Frank Pear of New York. These cattle were the tops of a recent importation from England, five of them under six years old having milking records of 9,000 pounds or more and two four-year-olds having records of better than 7,000 pounds of milk each. The bull is a yearling with exceptionally good records on both his dam's and sire's side.

BEEF CATTLE.

Wm. Bond of Alameda Co. has secured a new herd sire from C. A. Saunders, Manila, Ia.

W. Mayo Newhall has recently purchased in the East two Shorthorn and two Hereford bulls. These

bulls will be used on his highly graded herds of Hereford and Shorthorn cows.

A. E. Noyes and Son of Sutter City have just received two three-year-old registered Hereford cows from the East to add to their foundation herd of Herefords.

Careful observation of the Nebraska cattle reported recently in the Kansas City stockyards as suffering with sore mouths has failed to reveal certain typical symptoms of foot-and-mouth disease.

D. A. Vaughn, a pioneer cattleman of the Visalia district, has received lately seven thoroughbred Hereford bulls from Iowa and Nebraska. Owing to the strong movement in the cattle business toward thoroughbreds, they are increasingly hard to get.

Recent sales of registered Shorthorns by H. L. and E. H. Murphy of Sacramento county include nine head of females to Jesse Bennett of Chico and five head of bulls to cattlemen in Modoc and Merced counties. Their last importation from the East contains a lot of good thick-meated, heavy-boned range bulls.

W. M. Dunlap has recently returned from the East with a mixed lot of 62 head of Shorthorn and Hereford cattle to fill orders for the following: W. Bemmerly of Yolo county, Stanford University, W. Mayo Newhall, Frankenhimer Bros., Stockton; Howard Tilton, Gilroy, and Cutler Bros., Visalia.

Frankenhimer Bros. of Stockton have just received a shipment of 12 registered Shorthorn cows and a Shorthorn herd sire from the East which will be added to their present herd of Shorthorns. The herd sire is of straight Scotch breeding and the cows are Scotch topped. None of the shipment is over six years old.

Chas. Hawkins, manager of the Pacheco Cattle Co., has just returned from an extended tour through the Middle West where he purchased a carload of registered Shorthorns to add to his already large herd. Included in the lot were two heifers and a bull from the Thompson herd and four heifers from the Bellows herd.

California Favorite, awarded the grand steer championship of the International Livestock Exposition at Chicago, was sold at auction Dec. 7, to a Detroit packing firm for \$1,960. The price is declared to be the highest ever paid for beef. The price per pound was \$1.75. The steer was raised by the University of California State Farm, Davis.

T. S. Glide of Davis recently purchased a yearling Shorthorn bull from C. A. Saunders, Manila, Iowa, and also last week bought at Portland a Canadian bull of straight Scotch breeding. This animal topped the sale, bringing \$1350. The bull from Saunders was sired by Cumberland Type, dam was sired by Villager and second dam by Bapton Diamond. Two fine animals to help improve his already fine breeding herd.

W. Bemmerly of Yolo has just received the yearling Hereford bull Bonnie Brae 96th from the herd of Wm. Andrews and Son of Morse, Iowa. This youngster is a half brother of the \$11,000 bull Bonnie Brae 3rd, owned by O. Harris and Son. An own sister of this bull has been shown by the Andrews in their aged herd this fall. Mr. Bemmerly also purchased a four-year-old cow from the Andrews herd, a half sister to his bull.

The winning of the sweepstakes prize last week at the International Livestock Show in Chicago by a yearling Hereford-Shorthorn steer bred and fed by the University of California carries with it an impor-

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MAKE BIG MONEY with our big-type Poland-Chinas. Smooth, easy feeders that make greatest weight in shortest time at lowest cost, topping the market at 225 lbs. in 6 months. 800 head, both sexes, all ages, reasonable prices. Some fine bred sows and gilts, and top young boars. Best Eastern blood lines. Satisfaction guaranteed. Ranch in Tulare county, but address owner, B. H. Whitten, Route 5, Box 647, Los Angeles.

GRAND CHAMPION SUPERBA POLANDS—A few choice spring Superba boars ready for service. Sows bred to Superba for fall litters. Prices reasonably low. Rough's Greenfield, Arlington Station, Riverside, Cal.

REGISTERED POLAND-CHINA BOARS of serviceable age. A Wonder and Chief Picture breeding. Every animal guaranteed. Price \$25. Bar N. Ranch, E. A. Noyes & Son, Props., Sutter, Cal.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated, purchaser to return crates. E. A. Hall, Watsonville, Cal.

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REGISTERED POLAND-CHINAS—Prolific, profitable porkers. Choice boars now ready for service, \$25 each. Weanlings, \$15. Dr. J. A. Crawshaw, Hanford, Cal.

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REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

POLAND CHINA HOGS FOR SALE—Registration papers furnished free. C. A. Cooler, Durham, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 27A, Davis, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

AMAWAGE FARMS—Poland-China hogs and Holstein cattle. G. H. Loughery, Visalia, Cal.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

REAROS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for Fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

A PICTURE FOR A POSTAL—If you are interested in good Berkshires, we shall be pleased to send you by return mail a photo of a representative animal from our herd, together with some facts about the natural conditions under which these hogs are raised. Write your wants to Butte City Ranch, Home of Good Berkshires, Box P, Butte City, Cal.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Merckesael, Berlin, Cal.

WINONA BERKSHIRES—Three July 27, 1916, daughters of Winona Violet Champion, out of Rookwood Lady 106th, a sister of Laurel Champion. Winona Ranch, E. I. A. Box 105, Grants Pass, Ore.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Remus, Santa Rosa, Cal.

BARGAINS IN BERKSHIRES—Write today for our Special List of high-class boars and open gilts. Both the offerings and prices will please you. Silver Birch Farms, Box P. P., Newport, Wash.

CHOICE REGISTERED BERKSHIRES—Exceptionally fine pigs, \$15 each. Unrelated trios, \$40. Boars, sows, and gilts at reasonable prices. W. H. Waugh, Riverside, Cal.

REGISTERED BERKSHIRES of prize-winning blood. Write for description and photos. Imperial Stock Farm, Morcan Hill, Cal.

REGISTERED BERKSHIRES—For sale bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

SPECIAL—Six good service boars and a few sows in pig to Premier Leader due to farrow in October. Geo. M. York & Son, Berkshire breeders, Modesto, Cal.

IMMUNIZED NORMANDY BERKSHIRES.—Good type. Breeding stock, any age, for sale at all times. Cast iron guarantee. Arlington Smith, Visalia, Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Perris, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

BERKSHIRES—Carruthers Farms, Mayfield, Cal. Second annual sale, August 2, 1917.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Weanling pigs, \$10 each. G. A. Casser, R. 7 San Jose.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

CHAS. GOODMAN—Breeder of high-class Berkshire Swine. Willams, Cal.

Duroc-Jerseys.

DUROC JERSEYS—My hogs won highest honors at State Fair, taking first prize herd, first prize sow, second prize boar. Were the largest of their age exhibited. Stock all ages for sale. Prices reasonable. Breeding and satisfaction guaranteed. Haden Smith, Route 1, Box 84D, Woodland.

RANCHO RUBIUS DUROCS—About closed out. A few extra good sows, choice July gilts and weanling pigs, both sexes. Your last chance for high-class stock at common prices. Remember breeding stock will be scarce next year. Elmer Lamb, Ceres, Cal.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

DUROC JERSEYS—Herd boars. E. N.'s Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

REGISTERED DUROCS—Service boars and open gilts from High Model, Defender and Crimson Wonder stock. River Bend Farm, St. Helena, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boulder & Son, Napa.

HEAVY BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denair, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hardwick.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class pure-bred hogs both sexes, any age.

DON HERMANOS REGISTERED DUROCS—Davenport & Johnson, Ukiah, Cal.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROC-JERSEY SWINE—Frederick M. Johnson, Napa, Cal.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

Yorkshires.

LARGE YORKSHIRES—Choice spring boars, gilts, and weaned pigs from Champion sow P. P. I. B., or from breeding of champion boar and sow, Sacramento, 1916. If you see them grow you will like them. Riverina Farms, Paradise Road, Modesto, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

Chester Whites.

BILLIKEN HERD OF CHESTER WHITE Swine—Registered and Cholera immune. 4 bred gilts due to farrow the latter part of January. 10 young boars of service and 20 open gilts that will be bred to suit the buyer. Write for the booklet "Chester Whites" and find out what the breed is and what they are doing. This herd represents the very best blood lines the breed produces. C. B. Cunningham, Mills, Sacramento County, Cal.

REGISTERED IMPROVED CHESTER Whites—Grizzly Bear Ranch, East Auburn, Cal.

Essex.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

DAIRY CATTLE.

Holsteins.

REGISTERED HOLSTEINS—Herd sire King Korndyke Hengerveld Ormsby 7th, 86623. His full sister as Junior 3-year-old made \$2.04 lbs. butter in 7 days. The record of his dam and his sire's dam averaged 30.98. George Kounias, Modesto, Cal.

REGISTERED HOLSTEIN BULL CALVES—Sired by Lorena Korndyke Alcarra, whose dam made 29.75 pounds butter fat in seven days as a four-year-old. J. M. Campbell, Merced, Cal.

25 HIGH-GRADE HOLSTEIN Heifers, sired All tuberculin tested. Also 35 yearling heifers sired by same bull. Terms and prices apply to W. H. Nichols, 2552 Haste St., Berkeley, Cal.

FOR SALE—Purebred Holstein Bull—"El Sur Capitán"—under 3. Three-quarters black. Healthy. Good-tempered. Sure stock-getter. Price \$150. H. P. Rosenberg, Box 540, Mill Valley.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Cream-elle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

REGISTERED BULLS by King Korndyke Pontine and out of A. B. O. cows. A splendid selection old enough for service. Write or call. J. H. Harlan, Woodland, Cal.

A NICE YOUNG SON from El Prado Farm Colantha and from a 24.26 lb. dam. J. W. Renoit, Breeder of Registered Holsteins, Route C, Modesto, Cal.

TULARE GUERNSEY AND HOLSTEIN
Farm is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

THE MCCLLOUD RIVER LUMBER CO., McCloud, Cal.—Highclass thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

THE HENDERSON CO.—Breeders and importers. Registered Holsteins. Sacramento Bank Bldg., Sacramento.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons, Corp., Importers and Breeders. Woodland, Cal.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

BREEDERS OF REGISTERED HOLSTEIN CATTLE—McAlister & Sons, Chico, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O dams. B. F. Anderson, Modesto, Cal.

REGISTERED HOLSTEIN BULLS, \$50 to \$150. Glorietta Stock Farm, Woodland, Cal.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route E, Modesto, Cal.

A. R. O. HERD OF HOLSTEINS—Alex Whaley, Tulare, Calif.

Jerseys.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3 lbs. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

VENADERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly record. Guy H. Miller, Route 1, Modesto, Cal.

JERSEY BULLS—Serviceable age. Sons of Gertie's Lad, who has two daughters that made over 600 lbs. butter as two-year-olds. A. A. Jenkins, Tulare.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

YOUNG REGISTERED JERSEY BULL CALVES at reasonable prices. O. J. Ames, Oakdale.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

Other Breeds.

PACIFIC GUERNSEY HERD—Cattle selected from best imported and Advanced Register Stock. Now offering choice bulls. C. S. Rasmussen, Lodi, Cal.

EDGEMOOR FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgemoor Farm, Santee, Cal.

BREEDERS OF REGISTERED SHORT-HORNS—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

FOR SALE—Registered Bull, 3 years. Teake Lyons De Kol 2nd. Dam Aggie Cornucopia Rosa. Box 166, Livingston, Cal.

FINE YOUNG REGISTERED GUERNSEY Bull—\$85. Registration papers sent on request. K. L. Evans, Gilroy, Cal.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

BEEF CATTLE.

1500 HEAD HIGH GRADE HEREFORD cows. Some calves by their side. 300 head fine yearling steers. 200 mixed weaned calves. Sixty head exceptionally well-bred grade Hereford bulls. Ten head of very choice registered Hereford bulls ready for service. G. R. Patton, Porterville.

SCOTCH AND SCOTCH-TOPPED SHORT-HORNS—We have the largest herd of straight Scotch cows in California. Foundation stock of both sexes for sale; also a choice lot of range bulls. Barco Ranch, Hollister, Cal.

REGISTERED YEARLING SHORTHORN Bulls—Heavy-boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

FAIR OAKS RANCH, Willits, Cal.—Young registered Shorthorn bulls for sale. Sired by Landseer 379318, grandson of Imported Villager 295884.

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

CROLEY'S CALF FEED with skim milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Benarto, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords, Newman, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms, Mayfield, Cal.

SHEEP AND GOATS.

FOR SALE—GOATS—Grade Toggenburgs, bred to registered Toggenburg buck. Call or write, Geo. Langlois, Auburn, Cal.

tant lesson to the cattle men of this State. This steer was fed barley instead of corn in fattening and it proves that corn is not essential in making choice beef and that other grain if properly fed can be made to take its place. It also confirms something that was known before to cattle feeders of the Central West, that cross-breeds make better beefs than purebreds. This was demonstrated at the Kansas City Fat Stock Show in 1885 when a cross-bred Galloway-Shorthorn steer bred and fed by M. R. Platt carried off the sweepstakes prize in a hotly contested and good-size ring of Herefords, Shorthorns, Galloways and Aberdeen-Angus and cross-breeds.

SWINE AND SWINEMEN.

Allen Thompson of Tulare county states that he has just sold four bred Jersey gilts and a boar to Fitz Ranch and a boar to C. E. Thornton.

Allen Thompson of Tulare reports the following sales: To the Fitzwilliam Ranch, Burrell, Calif., four bred gilts and one boar; to C. E. Thornton, Visalia, one bred gilt.

A recent addition to the Berkshire herd of Homer Hewins at Calistoga is a gilt, sired by Laurel Champion. This gilt was purchased from Winona Farms, Grants Pass, Oregon.

William Bernstein of Hanford has just shipped one of his purebred Poland-China hogs to Honolulu, where it will head the herd of John T. Baker, a prominent Hawaiian hog breeder.

J. L. Dickenson, Duroc breeder of Tulare county, exhibited a registered sow Cherry Girl by name at the Visalia Fair recently, that farrowed 56 pigs and raised 44 of them between Jan. 27, 1914, and Sept. 26, 1916.

The Berkshire sow, Miss Villa, purchased by Frank Brush of Sonoma county from D. D. Warnock, during the State Fair at Sacramento, is being bred to Grand Leader second, grand champion Berkshire at the Panama-Pacific, having been shipped to Grapeville Farms at Escalon during the present month.

A. B. Humphrey, Berkshire breeder of San Joaquin county, announces that he contemplates turning off about 500 head of purebred Berkshires a year for pork in the future.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Rambouillet and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

KAUPKE BROS., Woodland, Cal.—Breeders and Importers of Hampshire sheep.

BISHOP BROS., San Ramon, Cal.—Breeders and Importers Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets. Hanford, Cal.

HORSES AND MULES.

HORSES FOR SALE—All or any part 170 head. Imported Percheron stallion. 50 grade Percheron mares. 30 three-year-old colts, broke and mated; \$250 to \$300 ap. span. 30 two-year-olds; 30 one-year-olds; 30 nine months old. S. L. Skaggs, Madera, Cal.

STOCKTON PERCHERONS again winners at Sacramento. Get next brother farmer. H. G. Learned, Producer, Stockton.

REGISTERED SHIRES—Black Hawk Stock Farm. Importers and Breeders, Easton & Ward, Proprietors, Burlingame, Cal.

REGISTERED IMPORTED PERCHERON Stallion for sale cheap. Hewitt & Hewitt, Dixon, Cal.

MISCELLANEOUS.

SAN FRANCISCO LIVESTOCK EXPORT Co., Eugene R. Croley, Manager, solicits foreign orders for purebred registered and merit breeding animals and fowls. California has great diversity of climatic and other conditions that enable us to select animals that have been raised under conditions similar to those of the location for which they are intended. We should be informed regarding these conditions and be allowed ample time to make selections. Nearly all disappointments in buying afar are the result of insufficient information as to conditions or to lack of time for proper selection. Our plan and terms for "raising animals to order" to fit into peculiar foreign conditions is worth investigating. References: Dun or Bradstreet, or San Francisco banks. Office 319 Underwood Building, 525 Market St., San Francisco.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

STOCK RANCHES AND FREE RANGE—Different counties. Write for free booklet. Joseph Clark, Sacramento.

D. O. LIVELY, 216 Hobart Building, San Francisco, buys and sells livestock—any kind—any quantity.

DUROCS AND GUERNSEY BULL CALVES sired by 900-lb. boar. Ed. E. Johnson, Furlock, Cal.

FIRST RURAL PRESS PRIZE FOR BEST COWS AWARDED.

Just as we go to press we are advised by Prof. F. W. Woll of the University of California that the Pacific Rural Press monthly prize of \$25 for the best five grade cows entered in the California State Dairy Cow Competition has been awarded to the Napa State Hospital at Napa, for the month of November. This was made possible by securing an average monthly production for the five head of 1276.8 pounds of milk and 46.587 pounds butterfat. Full details as to breeding and feeding methods at this institution will appear in these columns next week.

With that end in view he is fattening a carload of choice Berkshires at the present time and is constructing a modern fattening barn.

Manager Owen Duffey of the Napa State Hospital states that buildings have recently been completed at that institution which will allow for the curing of the hams and bacons of all the hogs grown by them. As these hogs are grown entirely on garbage and refuse from the institution, they represent a direct saving of many thousands of dollars to the State annually.

W. H. Browning of Woodland has made recent sales of registered Poland China hogs to the following: six bred gilts and a boar to Dr. G. L. Stevenson of Sacramento, four sows and two boars to Peter Sax and Sons for exportation to Panama, and four bred biltis and a boar to Scott-Magner-Miller of San Francisco. Mr. Browning says that his fall litters sired by a son of Model Major are the best lot he has ever had.

Arlington Smith of Visalia has recently added to his already choice herd of registered Berkshires the sow Clementina, champion aged sow at the Alameda, Stanislaus, Fresno and Kings county fairs and second in her class at the State Fair this year. She was purchased from H. L. and E. H. Murphy of Perkins, Sacramento county. Mr. Smith also purchased a choice show gilt secured by Messrs. Murphy at the National Swine Show at Omaha.

Murphy Bros. of Perkins, Sacramento county, have recently sold a registered Berkshire service boar to Calaveras county and a sow to Yolo county. In their recent importation from the East they brought a senior yearling service boar second prize winner at the National Swine Show. This boar was bred by Iowana Farms and will be used as herd sire on the 15 outstanding brood sows which are now included in the H. L. and E. H. Murphy purebred herd.

HORSES.

The Belgian stallion owned by Ruby & Bowers, who have California headquarters at Davis, repeated his previous performance at other 1916 livestock shows by winning grand championship at the Pacific International Livestock Show at Portland last week.

Four hundred and thirty separate Percherons were entered at the International Livestock Show at Chicago, the exhibits coming from 15 different states. This is the largest number of entries from the East that the Percheron Show at the International has ever had, and indicates an awakening interest in draft horse breeding.

SHEEP.

Sheep prices made further advances in Portland when a mixed load of yearlings, lambs and ewes brought \$8.50, an advance of fully 25 cents.

Most of the older and larger sheep breeders report that they are sold out of service bucks for the season, one large breeder stating that he has but ten head left at this time.

John Zalud of Porterville and Henry Gardner of Fresno have just brought 3,000 ewes into McFarland from El Paso, Texas. Twenty-four cars were used in transporting the lot. The ewes will be kept on range at McFarland until after lambing.

While in the East last week W. S. Guilford purchased for the Butte City Ranch 75 head of purebred

Shropshire sheep. These with the over 40 head of purebred Shorthorns just secured, and the Berkshire hogs already there, places the Butte City ranch in the list of fine stock farms.

Kaupke Bros. of Woodland report a larger demand for Hampshire sheep than they are able to fill. They say the demand elsewhere is equally as heavy and that it is impossible to secure purebreds for importation at prices that most sheepmen in California are willing to pay.

Huston and Hammond of Yolo county are establishing a flock of registered Shropshire sheep on their ranch four miles north of Winters. The foundation flock was secured from the Howard Cattle Co. and Knollin and Finch, and numbers about 150 head of females at this time.

Bean growers in Yuba county are finding sheep a profitable market for their bean straw, one farmer stating that by stacking his bean straw for summer feed and using volunteer green feed for winter he is able to keep a flock of 100 head of ewes. It is becoming a common sight to see a small flock of sheep on general farms in some of the districts adjacent to Marysville.

The Nevada sheep business is looking up. W. H. Moffatt and H. E. Humphrey of the Union Land and Cattle Company of Reno and the H. Moffatt Company of San Francisco, have bought the Big Smoke ranch, sixty miles north of Reno, the reported price being over \$2,000,000. The purchase includes 50,000 sheep at \$7 a head and unborn lambs at \$5 a head.

Land that has been harvested is not safe for sheep unless great care is exercised to see that they do not eat too much of the cereal, says the Chico Enterprise. Sheep that were recently turned in on some rice land died to the number of thirty. There was too much rice handy for them. A large quantity had not been harvested because it had been blown down. The sheep ate this greedily. It is claimed that in a well-harvested field, where the stock had to forage for the rice, it is impossible for them to eat too much.

20-35
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BALL TREAD TRACTORS
To Own a
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is a mark of
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The Yuba catalogue is a reference book every farmer should have.
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SAN FRANCISCO, CALIF.

Better Crops by Cattle Breeding.

[Written for Pacific Rural Press.]

To market the products of their land in the finished stage and return fertility to the soil which many years of grain farming had taken from it, was the intention of the J. H. Harlan Company when they established a herd of registered Holstein cattle on their 480-acre ranch in Yolo county several years ago.

How well they have succeeded is demonstrated by the average increase in the grain yields, which amounts to 10 sacks an acre more now than previously and to the fact that they now market a large part of their annual crops by selling purebred Holstein cattle and milk.

The cows have, of course, been the controlling factor in the improved yields as they have furnished an immense amount of fertilizer, also they have called for alfalfa, which in itself has done much good in the soil-building process.

This may be seen by a field of 50 acres which was seeded to alfalfa, but which was plowed up four years ago. Since then it has been planted to summer crops, having been seeded last winter to barley, which was harvested in July and which yielded 34 sacks of grain to the acre. As soon as possible the land was irrigated, plowed and planted to Indian corn. After planting the corn was irrigated once, before it became too large to prohibit further cultivation; and while planting was too late to allow of perfect ripening, the field was expected to furnish plenty of

silage to fill the two 200-ton-capacity silos which are on the ranch.

Formerly this late corn would have been of little if any value, but with the herd of Holsteins on the ranch to consume it in place of green cut alfalfa which is fed during the summer seasons, it will be converted into butterfat and registered bull calves, both of which find a ready market.

But increased yields of field crops would not alone solve the problem of efficient management if it were not for the producing ability of the cattle.

In this respect the company has been fortunate in either owning or having the use of herd sires such as King Meade of Riverside, King Korndyke Pontiac and Prince Gelsche Walker, all bulls of well-known quality among Holstein breeders of the State. To further strengthen this breeding, Prince Butterboy Walker, a son of Prince Gelsche Walker and King Meade Zampa, a son of King Meade of Riverside, are being used as herd sires.

Next in importance to breeding is the official testing, on this ranch, about half of the female herd having A. R. O. records and all of them to be tested eventually. It is the practice to test all cows that freshen in the fall, winter and spring months under conditions much the same as those in use on the well-maintained dairy rather than under the forced methods of some breeding farms.

Self-Oiler for Hogs.

[Written for Pacific Rural Press.]

Crude oil will perhaps always be used more extensively than anything else in California by hog raisers for lice and fleas because of its cheapness and availability.

When used on rubbing posts or poured on the wallow it is effective; but both of these methods of application have been improved by Dr. Crawshaw of Kings county, breeder of Poland Chinas, who has a home-made rubbing post that is both unique and useful.

This is made with two pieces of well-casing and a substantially-set fence post. The smaller piece of casing is six inches in diameter and about three feet high, fitting closely over the fence post.

The larger or outside casing is eight inches in diameter; and when in place extends above the top of the inner casing about two inches. This outer casing is perforated with small holes.

When both casings are in place the inch space between them is packed solid with cotton waste, up to the top of the inside casing on top of which is set a lard bucket filled with crude oil and having perforations in the bottom that will allow the oil to drip from the bucket onto the cotton waste.

When completed, the waste is saturated with oil from the top and a bucket of oil set in position. The perforations in the outside casing allow the oil to trickle down the outside and the constant rubbing of the hogs against the casing further squeezes the oil out through the perforations. When once saturated

the slow dripping from the bucket furnishes all of the oil required and only needs refilling once in a while.

HORSE BEANS FOR COWS.

To the Editor: Does feeding green horse-bean plants to dairy cows have an injurious effect on the flavor of milk or butter?—P. H. T., Gualala.

[Answered by W. J. Hanna, Gilroy.]

My experience is that green horse-bean plants are beneficial. Several years ago I broadcasted a mixture of horsebeans and barley in my young orchard. It made good growth, and before plowing in the spring I cut and fed it. The cows cleaned it up well and increased their milk. We noticed no bad effects on the milk or cream. I have noticed that both the cows and the hogs prefer the green barely or alfalfa to the green horsebeans.

The same time I fed the horsebeans I put part of it in the silo with a filling of alfalfa. But did not find any difference when I fed it out. I believe the horse beans green would make good silage. The cured horse beans are fine grain for dairy cows. They will increase the milk flow and the quality of the cream.

I should like to know Mr. Teck's opinion after he feeds the horse beans.

Among the bull calves born during the past few months on Nevada Farm at Yountville, Napa county, are several likely show prospects for next year. Most of them also combine the blood of high record Island dams and bulls.

50c BUTTER

Makes Imperative the Use of an Improved

DE LAVAL

CREAM SEPARATOR

WITH the certainty of the highest prices ever known for butter this winter, no producer of cream can afford to run another month without a modern De Laval Cream Separator.

This is true whether you have no separator, or an inferior make of machine, or even an old model De Laval machine.

The waste of butter-fat is relatively greatest in winter, either with gravity skimming or a poor separator.

At present cream and butter prices, a new De Laval machine will almost surely save its cost within three months, and go on doing so thereafter.



There can surely be no good reason to delay the purchase another week, and if it may not be convenient to pay cash it may be purchased on such terms that the machine will easily pay for itself.

See your De Laval agent immediately, or, if you don't know him, address the nearest De Laval main office as below for any desired particulars.

De Laval Dairy Supply Co.

LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST. We specialize in Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Send for special catalog.

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50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

Breed for Butterfat



The quickest and surest way to make your Holstein herd more profitable in spite of high cost of feed is to introduce blood from high-testing ancestry.

My herd has a larger percentage of high-testing cows than any other herd in the State.

Beryl Clothilde Hengerveld, Champion in Butter-fat Contest, Sacramento, 5-day record, 21.11 pounds, test 4.7 per cent.

My young herd bull, DUTCHLAND SIR PIETERTJE CREAMELLE, has high-test breeding, and is transmitting this breeding to his sons and daughters. Your tested daughters have records averaging 21 pounds, all testing better than 4%. One of these, Clothilde Pontiac Creamelle, is California Champion 2-year-old, with a record of 22.52 pounds at 2 years 1 month; test 4.72%.

Have a few fine young bulls that will soon be ready for service.

WRITE OR CALL AND SEE THEM.

F. STENZEL

Breeder of High-Test Holsteins.

SAN LORENZO,

CALIFORNIA

SHORTHORNS

35 Choice Service Bulls
15 SCOTCH AND SCOTCH-TOPPED COWS AND HEIFERS.

All registered and tuberculin tested.

A Few Choice Berkshires of Either Sex for Sale.

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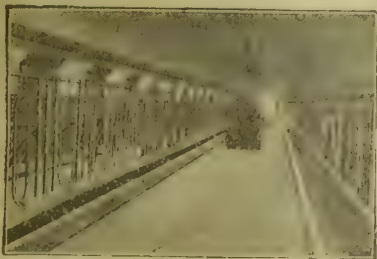


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STATE DAIRY COW COMPETITION.

As has been previously announced, the State Dairy Cow Competition conducted by the College of Agriculture opened November, this year. Nearly 250 entry blanks were sent out during the month in response to requests from 26 different dairy farmers. Entry blanks for 40 cows had been returned last Wednesday by 10 farmers, five of whom have never had their cows tested before. Twelve of the farmers who requested entry blanks and four of those who have entered their cows so far, are owners of grade herds, which is a very hopeful sign. No conclusion can be drawn from the figures given in regard to the total number of entries that there will be in the Competition during the coming months or by the time entries close. It is evident, however, that the opening date of the Competition (November 1), did not come right for many of the best cows owned by some of our breeders, and also that the largest increase in entries will come in the spring when the cows of most dairy farmers in the State freshen. As entries are open until May 1st, next year, these farmers will be amply able to enter their cows in the Competition, and a very large participation may be confidently expected by the time entries close.

IDENTIFYING GRADE COWS.

[Written for Pacific Rural Press.]

The identification of grade cows in a large dairy herd is a source of annoyance that is usually hard to overcome; and such was the experience on the Crescent Creamery's dairy in Los Angeles county before the present system of chain-and-brass-tag was put into use.

Previous to that, ear tags of various makes were used but were being continually lost, also they were disliked because one must be close to them to read the number.

As all cows in this herd of 265 head are kept close track of because of the monthly weighing and testing of milk, it was necessary that some scheme be devised that would insure sure and easy identification.

Finally, round brass tags were secured on which the number of each cow is stamped with a set of steel dies; that is kept at the milking stable. If the cow be a Holstein an H is placed in front of the number, if a Guernsey a G and if a Jersey a J. By this means the breed of the cow can be told at the main office in Los Angeles with ease.

This tag is then hung on a light but stout chain which hangs around the cow's neck, the tag always being in plain view both in barn and corral. Since they were put in use there has never been a case of lost identification, according to Mr. Carver, manager of the dairy.

What is probably one of the greatest Duroc Jersey boars ever imported to California from the Middle West is the senior yearling boar Uneeda Wonder, jointly owned by Haden Smith of Woodland and H. P. Slocum and Son of Willows. He is a grandson of Crimson Wonder and has a good show record in the East himself. He is the kind of an animal that thorough inspection fails to find a hole in and should have a big influence on the Duroc breed of the State.

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Best bred son of Tilly Alcartra.

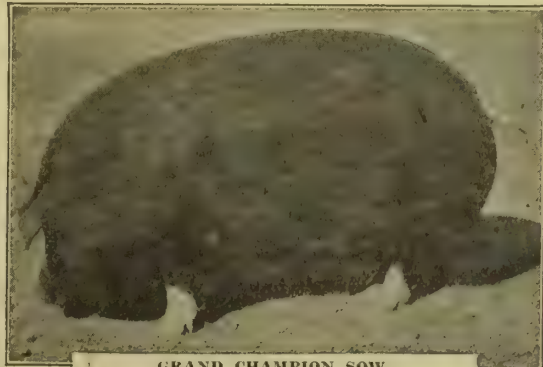
Our supply of these young sires is always limited, but we have a few now which we are offering at very reasonable prices.

Write us at once, or call and see the herd.

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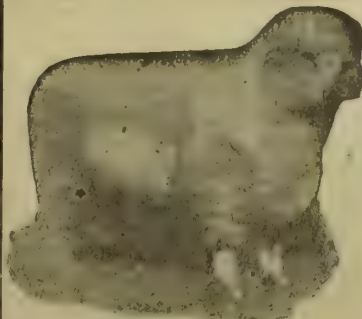
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GRAND CHAMPION SOW.
P. P. I. E. 1915; Sacramento 1916.

For many years, at widely separated show rings, under many different judges of varying type ideals, my Poland Chinas have been consistent prize-winners. My herd is large, and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished. Young Stock, \$30 Up. M. BASSETT, Bx. 1, Hanford, Cal.



Champion Ram P. P. I. E.

San Ramon Shropshires WINNINGS P. P. I. E., 1915.

Aged Ram, First and Second. Yearling Ram, First. Ram Lamb, First, Second, and Third. Champion Ram, Yearling Ewe, Second. Ewe Lamb, Second and Third. Get of Sire, First. Pen of three Lambs, bred by Exhibitor, First and Fourth. Pen of Four Rams, bred by Exhibitor, First and Fourth. Flock, any age, Second. Flock, any age, bred by Exhibitor, Second. Flock, one year old, First. Flock, one year old, bred by Exhibitor, First. Flock under one year, First. Flock under one year, bred by Exhibitor, First. Produce of Ewe, First, Second and Third. Premier Championship for Breeder. Premier Championship for Exhibitor. A total, including American Shropshire Specials, of 15 Firsts, 9 Seconds, and 6 Championships.

Purebred Registered Rams and Ewes.

Individuals or Carload Lots.

BISHOP BROS., Agents. SAN RAMON.

Contra Costa County, California.

California Hog Book

BY W. S. GUILFORD.
Price, \$2.00 per Copy. Postpaid.

California's Longest Milk Route.

[Written for Pacific Rural Press.]

Probably the longest milk route in the West is the one maintained by the Peacock Dairy of Kern county whose distributing system is spread over New Mexico, Arizona and California and for the most part the destination of every can shipped is a desert railroad station.

For a great many years the milk from this dairy has been sold to the Harvey Company who operate railroad eating houses along the line of the Santa Fe railroad, and it is needless to say that their requirements as to richness, purity and sweetness have at all times been stringent.

For that reason the methods employed on the dairy are of unusual interest, especially to the dairyman who finds it difficult to get his product even to customers in adjacent towns without complaint, in the summer months, of sour milk.

Richness.—Supplying a particular trade as they do, it is necessary to have a high testing milk and for that reason purebred Jersey bulls have been in use on the ranch for a great many years. Of the 125 head practically all are highly bred grade Jerseys, three bulls being in use at all times.

As a result of this continuous breeding the average herd test is 4.2 per cent all of the time and sometimes runs higher. The milk flow is also heavy, due to the fact that for years it has been the practice to select large, vigorous herd sires who have transmitted, in the majority of cases, both size of body and quantity of milk. With 40 heifers in the herd of 145 that were being milked in August, the average daily milk flow per cow was 20 pounds, thus making an average herd production of a pound of butter a day.

Sanitation.—Cleanliness is an important consideration here, for dirty milk could never be shipped such long distances with any degree of success.

The milking stable is built along sanitary, but economical, lines, having a well-drained concrete floor and good rain-proof roof. Except for low side walls made of common lumber there is no other attempt at enclosure. In fact the chief consideration was to have plenty of air and light and this is amply provided by the open sides.

A brine cooler for the milk to run over as soon as drawn from the cow and plenty of steam and hot water provided by an oil-fired boiler, constitute the main points in the milk room, for thorough cooling and perfect sterilization are essential factors in long-distance shipments of milk.

Shipping.—The matter of transporting the milk from farm to eating house deserves special emphasis in this firm's operations, for it is the one point on which the long route's success is founded.

The brine cooling is the first step in the shipping process. Then it is aerated and the animal heat taken out. From the cooler it runs into milk cans of various sizes, according to the size of the order to be filled. These cans are then placed in a re-

frigerator room where they are held till delivery to the railroad is made.

It is at this point in the shipping operation that the owners of this dairy have used their ingenuity profitably. Iced bottle shipping would at first seem the only feasible way of marketing milk under their conditions, but instead can shipping is the rule.

This is accomplished by equipping the can with what is known as an ice filler. These fillers hold about two gallons of cracked ice and extend from the top of the can to within about five or six inches of the bottom, at which point they taper into a sharp point.

In constructing them, the inner top of the can top is cut out, and the filler soldered to the inside surface of the can top sleeve, thus making them a part of the can top proper and removable only by the removal of the can top. No covering is used for this filler, which simplifies re-icing as the need arises.

As the cans are taken from the refrigerator cracked ice is poured into these fillers and the cans are again re-iced at the railroad station before shipment by express. For extremely long shipments the cans are re-iced at various points along the line, but always enough ice is contained in the filler to insure the milk being cool when it reaches its destination.

The amount of ice required by this method is not nearly so great as it would be if bottle shipments were made, and the expense of bottling and breakage is entirely overcome.

Naturally the quality of the milk and the manner of handling and shipping it necessitates the securing of a good price per gallon and this is received. In fact the price has been so satisfactory to all concerned that all of the Santa Fe eating houses on the western division have been using Peacock Dairy milk for something like ten years.

HOGS HALF PROFIT.

[Written for Pacific Rural Press.]

Although hogs are a profitable by-product on any large diversified ranch, one should not expect them to be all profit, according to D. B. Harris, manager of the Sierra Vista Vineyard in Madera county, where 200 to 300 market hogs are turned off each year.

On this ranch the hogs do a variety of cleaning-up jobs, being turned onto the grain stubble to clean up the waste grain after harvesting and also doing a good job of cleaning up the cull grapes left on the 1,000 acres of wine grapes after picking by hand is finished.

In both instances the pork put on is mostly profit; but at other times they have to be run on alfalfa pasture and fed grain in self-feeders and that lessens the profits about 50 per cent on the whole, according to Mr. Harris. He figures on making about 50 cents profit on every dollar's worth of pork sold.

The Self-Feeders on this ranch are constructed differently than most in that they have a wedge-shaped piece of lumber that fits into the space through which the grain

runs into the outside trough. This wedge is simply laid lengthwise of the feeder, and prevents the grain falling down unless it is pushed up by the hog. In this manner the hogs work down as much grain as they want by rooting with their nose against the wedge, but do not waste any, as a surplus is seldom left in the outside trough.

WHITEWASH IS HARMLESS.

To the Editor: Some of my neighbors say that to whitewash the trunks of peach trees will liven the bark and make the trees healthier; while others say it will close the pores and injure them.—E. C. K., Fresno.

Whitewash protects the trunks from deadening by sunburn and enables them to "liven" their own bark and make themselves healthier. It of course fills what pores there may be, but this has no effect on the tree; for orchard trees breathe through the leaf pores, and not to any extent through the bark, even of the green twigs.

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the use of a Hercules Stump Puller. Bumper crops instead of stumps. Big money in place of taxes. \$1,200 from 40 acres the first year—\$750 in extra crops every year after. Get the catalog of the

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Ruby & Bowers Win Again

At the Pacific International Livestock Show, held at Portland, Oregon, last week, we won

2 Championships, 11 Firsts, 7 Seconds, 8 Thirds, 5 Fourths.

on our

Belgians, Shires, Percherons and Clydesdales

We have the largest stock of horses and can sell you more genuine horse for your money. If you need a good stallion in your locality, let us know. Write to

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242 Washington St., Portland, Ore.

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Let Me Buy Your Shorthorns - Herefords

I have bought show and breeding cattle for most all of the older breeders in California and my wide experience here, together with my knowledge of Eastern herds makes it possible for me to secure

THE BEST AT A BIG SAVING TO YOU.

I am now taking orders for my next trip East to secure on a strictly commission basis, high class stock for California customers. Write me at once of your wants.

As to the service you may expect I refer you to the following satisfied customers: W. Mayo Newhall, San Francisco; W. Bemmerly, Woodland; Parrott Est. Co., Chico; Frankenheimer Bros., Stockton; A. E. Noyes and Son, Sutter City, Stanford University Ranch, Vina; Wm. Russ, Eureka; and J. A. Donohoe, Donohoe-Kelly Banking Co., San Francisco.

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Shorthorn Bulls You'll Like

That's the only kind we have included in our 1916-17 offering, for, above all things, we want you to be satisfied.



Our herd of registered cattle has been selected, at considerable expense, with the idea of raising heavy-boned, thick-meated and growthy bulls.

THE KIND THE TRADE DEMANDS.

ORMONDALE VICTORY, shown herewith, is one of the real top-notchers. Come and see our herd, 7 miles from Palo Alto, on the Woodside Road, or write for pedigrees and prices.

SOLID GUARANTEES WITH EACH ANIMAL.

Shorthorn Cattle
Duroc Jersey
Swine

ORMONDALE CO.

R. F. D., No. 1,
Redwood City
California

Marketed His Own Hogs.

[Written for Pacific Rural Press.]

That the farmers of California pay an exorbitant price for the marketing of their hogs is well known by everybody who has had experience in raising market hogs.

Just what this would amount to as a whole is difficult to even guess; but from the experience of George Peters of Kern county it constitutes a much heavier toll than it should.

During the past summer, Mr. Peters had a carload of well-finished hogs, weighing on the average about 200 pounds. The local buyer offered seven and a half cents a pound, f. o. b. Bakersfield.

Noting a difference between this and the published quotations in Los Angeles, a packing concern was asked for quotations, with a resulting offer of eight and three-quarters cents per pound f. o. b. Los Angeles.

With the belief that he could save money by doing his own shipping he loaded his hogs into a 36-foot car for which the railroads charged him \$47. The shrinkage on the way to Los Angeles averaged 10 pounds per head or 900 pounds on a loaded car of 90 hogs, which was worth at eight and three-quarters cents a pound, \$78.75. Altogether the shrinkage and freight charges amounted to \$125.75.

The difference between the Bakersfield buyer's price and the Los Angeles price was one and three-quarters cents a pound or \$225 for the car. Subtracting the actual freight and shrinkage charges of \$125.75 we find that Mr. Peters received almost \$100 for his trip to market, or a little more than half a cent a pound.

In recounting this experience, however, the fact should not be forgotten that these hogs were grain-fed from the time they were weaned, which accounted for the good price to a large extent.

Alfalfa, barley, tankage, and pumpkins constitute the main ration used by Mr. Peters, the barley being soaked before feeding and the alfalfa being fed in the form of pasture.

These feeds, with plenty of shade and clean running drinking water, supplied fresh from the pumping plant, combine in making the 10-month-old hog average 200 pounds,

the desirable size and quality from the packer's viewpoint.

PORTLAND SHORTHORNS AVERAGE \$411.

[Written for Pacific Rural Press.]

The Shorthorn event of the Pacific Coast for the year just ending was the annual consignment sale of Shorthorns held at the Pacific International Livestock Show at Portland last week.

The 67 head sold brought a new high average for these sales of \$411, bulls averaging \$425 and females \$398. The top price of the sale was made by T. S. Glide of Davis, Cal., when he purchased the yearling bull Count Amaranth, consigned by Frank Brown, for \$1350. W. J. Townley's bid of \$1320 for the two-year-old cow Diamond's Gladys was the top on females. Buyers were present from all over the Pacific Coast. Sales of \$400 or over follow:

Bulls.
Double Goods, calved Nov. 10, 1915, consigned by Frank Brown, George Russell, Prineville, \$575.

Prime Prince, E. Ogden, Marysville, Mo.—H. J. Teyt, Perrydale, Ore., \$1250.

Radiator, 2 yr. old, Thomson Bros.—J. W. Sherman, Union, Ore., \$700.

Ringleader's Crown, Aug. 6, 1915, Gibson Est.—Dick Kiger, Corvallis, \$400.

Count Amaranth, Oct. 15, 1915, Brown, T. S. Glide, Davis, Cal., \$1350.

Distinction, Nov. 6, 1915, A. D. Dunn, C. C. Olson, Haines, Ore., \$800.

Ringleader's Stamp, Oct. 27, 1915, Gibson Est.—W. I. Dishman, Princeville, Ore., \$410.

Vanda's Victor, Sept. 2, 1913, Schmidt Bros.—R. G. Hill, Cloverhill, B. C., \$420.

Chancellor, June 8, 1915, A. Chalmers, W. O. Cummings, Mt. Vernon, Wash., \$540.

Mildred's Prince, Feb. 13, 1915, A. Chalmers, Mr. Delaney, Starbuck, Wash., \$1000.

Lyndale Clipper, July 10, 1912, C. E. Axtell, A. F. Sanger, Spokane, Wash., \$410.

Loveland Pride, Oct. 5, 1913, Warnock and Sons, Davis Bros., North Powder, \$675.

Females.

Red Welcome, yearling, Frank Brown, E. F. Anderson, \$415.

Ringleader's Josie, yearling, Gibson Est.—M. R. Biggs, Prineville, \$575.

Diamond's Gladys, Jan. 1914, Frank Brown, W. J. Tornley, \$1320.

Dunbro Maid, yearling, A. D. Dunn, Donald Gale, Union, Ore., \$420.

Beauty Spot, yearling, J. B. Cornett, Haradon and Parker, Yamhill, \$400.

Dunbro Amanda, yearling, A. D. Dunn, B. Egan, Kent, Wash., \$405.

Ringleader's May, May, 1915, Gibson Est.—Wm. Byram, Canyon City, \$500.

Ringleader's Ruby, Feb. 2, 1916, Gibson Est.—W. J. Townley, \$705.

Mary of Argyle, Jan. 2, 1915, A. Chalmers, H. H. Armstrong, Knob, Wash., \$440.

Fork Branch Mildred, Mar. 26, 1914, Chalmers, W. I. Edwards, Condon, \$510.

Scottish Flower, April 1, 1913, Chalmers, W. W. Green, \$825 with calf at foot.

HOLSTEIN SALE BREAKS COAST RECORD.

[Written for Pacific Rural Press.]

That Holsteins bred by Bernhard Meyer of New Jersey and especially those sired by Spring Farm Pontiac Cornucopia are popular in the West was evidenced at the recent auction sale at Sacramento when his get topped the sale, but now comes word from Portland that the junior yearling bull Finderne Mutual Fayne Valdessa, sired by Spring Farm Pontiac Cornucopia and out of the

world's record two-year-old Finderne Mutual Fayne, sold for \$21,500 at auction last week during the Pacific International Livestock Show.

Six of the most prominent breeders in the Northwest were bidders for this startling calf, till the bids reached \$15,000, after which it settled down to C. W. Holmes of the Carnation Farm and John von Herberg, owner of a Holstein herd at Kent, Wash., the latter finally securing the calf at the above figure.

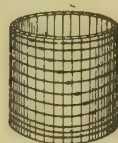
A total of 90 head were sold at the sale at only moderately good prices with the exception of the bull noted above.

NEW HOLSTEIN STATE RECORD.

Another new high seven-day record for aged cows has just been completed for California by the cow Aaggie Acme of Riverside 2nd, owned by A. W. Morris and Sons of Woodland. During the seven days she produced 35.36 pounds of butter from 627.3 pounds of milk. She is a daughter of King Meade of Riverside and out of the high record cow Aaggie Acme of Riverside. Mr. Frank Morris informs us that she is now on a 30-day test and that he expects her to break the State record in that division also. Another cow in the herd which has just made a high two-year-old record is Aralia De Kol Pontiac Meade, a daughter of the 1916 State Fair champion bull Segis De Kol Pontiac Burke.

WORLD'S CHAMPION STEERS.

There have been 15 grand champion-of-the-world steers. Ten of these have been Angus, 2 Herefords, 1 Shorthorn (calf in 1907) and two crossbreds (A Hereford-Angus cross in 1903 and the Shorthorn-Hereford cross of this year). Ages have varied from 13 months to over three years and weights from 975 to 1870 pounds. Thirteen of the 15 grand champions have been sold on the block after the show. Prices ranged from \$1.50 per pound to 18 cents. (This year the price was \$1.75 per pound.) Eight grand champions were purebreds, two crossbreds from purebred sires and dams, and five grades sired by purebreds. T. C. Judkins, Jr., in University Farm Agrícola.



REDWOOD TANKS — SILOS.

Thirty-five years in this business in Stockton.—A 500-gallon tank, \$8.00. A tank 6 ft. x 2 1/2 ft., \$7.50. Other tanks equally cheap. I deal direct with the consumer, saving 10% to 25%. All sizes in stock. Clear, dry redwood direct from the mill. Write for price today.

Latest improved machinery. Doors, Windows, Frames, Mouldings.
R. F. WILSON, STOCKTON, CAL.



Here's a Real Herd Header

Dam **GOLDEN STATE BEAUTY**—her family 4 daughters and 2 sons—a 4th and last daughter ending a successful A. R. test, a bull taking first premium at the Cal. State Fair, and this fellow (by Imp. Lord Kitchener), which is for sale, age 20 mos. Another from an A. R. daughter by same sire, age 15 mos. and some classy calves of same breeding.

Is this breeding good enough? It evidently was good enough for Mr. Geo. Farmer of Hanford, a report of whose herd appeared last week in the columns of the Pacific Rural Press, page 655, under "Careful Inbreeding." The purebred bull used there was from my old cow, Clementine Mabel, and was a full brother of Golden State Beauty above referred to. Am sure the same can be done in your herd. The best time to do it is NOW. Send for description and prices, or better—see them.

Hampshire swine the best breeding, any age or sex cheap today.

ADDRESS,

DR. J. W. HENDERSON,
1st Nat'l Bank Bldg.,
Berkeley, Calif.



Also Packed in Galvanized Buckets

ESAERG ELXA

Whatever way you spell it, C. & S. Axle Grease is easier on wheels, horses, harness, wagon and driver than any other.

Backward or forward without friction. The buckets are useful when emptied.

WHITTIER-COBURN COMPANY
San Francisco

IMPORTANT ANNOUNCEMENT

We have recently bought at the International Show in Chicago and elsewhere in the East, a carload of Shorthorn cattle, a carload of Shropshire sheep, and a number of Shetland and Welsh ponies. An International prize-winning ram is at the head of the Shropshire flock. A son of White Rock, one of the best sons of the great Whitehall Sultan, heads the Shorthorn herd. Included among the Shorthorns are a number sired by the \$10,000 Prince Imperial. And in the International show many of the championship and first prizes in Berkshire classes were won by animals closely related to individuals in our herd.

We have Shorthorns, Berkshires, Shropshires and Ponies for sale now.

BUTTE CITY RANCH, Butte City
GLENN CO., CALIFORNIA.

Pacific Guernsey Herd

Cattle selected from best Imported and Advanced Register Stock.
Now Offering Choice Bulls.

C. S. RASMUSSEN,
Loleta, Calif.



HOLSTEIN BULL CALVES

I have several young animals—fine individuals, well marked, good ancestry, for sale at reasonable prices.
COME AND SEE THEM OR WRITE

WILLIAM LYNN,
Santa Ysabel Hot Springs, Paso Robles, Cal.

More Butter and Better Butter

YOUR HERD should average at least 500 lbs. of butter per year. A good Jersey herd will do even better—600 lbs. per year, and the butter will be of the finest flavor, texture, and color. There are many individuals of this breed producing 1100 lbs. They make good use of every ounce of feed, do not require fancy feeding, mature early, thrive in any climate, are steady producers, are beautiful and gentle. They pay big dividends on the highest priced land.

Our latest freebook, "About Jersey Cattle," tells all about the development of this hardy breed. Send for it—now. You'll be glad you did.

American Jersey Cattle Club
388 West 23rd St., New York City

Shorthorn Breeders Organize.

[Written for Pacific Rural Press.]

With an attendance that was surprising to even the most enthusiastic supporters of the breed the Shorthorn breeders of the State held their organization meeting at San Francisco on Monday of this week and organized what is to be known as the California Shorthorn Breeders' Ass'n.

Their object as set forth in the constitution and by-laws will be to encourage and extend the influence of Shorthorn breeding and safeguard the interests of its membership by creating better trade opportunities and, as far as possible, operate to their general advantage and profit; to promote closer relations between the membership and to stimulate the greater activity among them. Also to arrange for public sales, if conditions are favorable, to which members may consign their salable stock; to provide for a careful selection of said sale entries that a creditable offering may be assured and to arrange for exhibits at local and other fairs, as may be agreed upon, and where necessary, selections of individuals be made from several herds in order that groups may represent the best of the association's herds.

The by-laws committee agreed upon an annual due of \$5.00, which amount was decided upon by the membership, but it was the opinion of many that this might reasonably be increased if circumstances demand it.

The following officers were elected for the coming year: A. W. Foster, president; Chas. Hawkins, vice-president; David J. Stollery, secretary-treasurer; J. A. Colcomb, T. S. Glide, Prof. Gordon H. True, F. Elberg, directors. The regular annual meeting was set for the second Monday in December.

Aside from the organization work there was much good discussion as to the work that may be accomplished by the association, it being the contention of all speakers that there is a vast amount of interest in Shorthorns here at this time and that California breeders must act collectively if the greatest amount of good is to result to the breed and breeders.

Much discussion was given to the auction sale idea, Mr. Elberg, manager of the Gibson Estate, who has been a contributor to the Shorthorn sale at Portland, stating that we have as good cattle here as can be found in the Northwest, but believing that attention must be called to the fact by the auction sale and livestock show method.

Jas. MacDonald of the Ormondale Co. favored the consignment sale, stating that it is exceedingly difficult to assemble foundation herds here at this time for lack of a centralized selling point. Mr. A. W. Foster, who presided at the meeting, while favorable to the sale plan, was averse to the establishment of extremely high prices, preferring to see reasonable prices and lots of new breeders. Mr. Chas. Hawkins, who has just returned from the Middle West, was positive in his statement that prices in California are too low and that a campaign of education must be promoted which

will familiarize people here with conditions as they exist here and elsewhere at this time.

The proposal of holding a livestock show in San Francisco next fall was favorably thought of by all present, but it was decided that direct action for such an undertaking should come from San Francisco commercial interests rather than from the breeders. It was agreed, however, that the association would co-operate in all ways possible toward the promotion of this show next fall and Mr. Foster gave it as his opinion that such a show would become a reality.

The practical working out of a definite program for the coming year was left in the hands of the board of directors, who will hold a meeting shortly to outline methods of procedure.

TANKAGE AND OILMEAL CHEAPEN COST OF FATTENING SWINE.

Hogs on a full feed of corn [or barley, milo, etc.,] should have tankage or linseed oil meal to balance the ration.

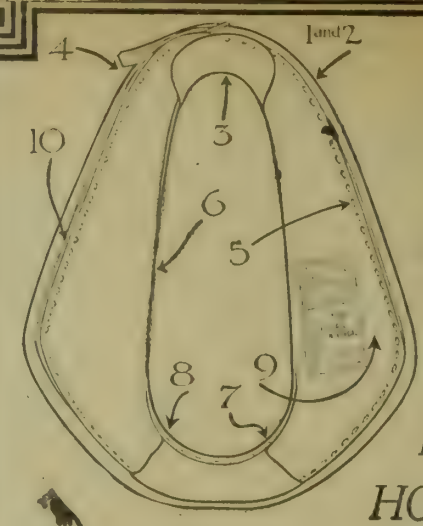
In "hogging down" corn, hogs should have access to tankage in a self-feeder. In this way they balance their own ration and save the labor of husking the corn and the feeding of tankage by hand. Even when fed by hand, hogs should have a supplement of tankage or oilmeal in order to stimulate the secretions and digestion and build framework and muscle as well as make fat. Tankage or oilmeal may be fed in a slop or dry in a trough. Either way is satisfactory. About one part of tankage to ten parts of corn will make a balanced ration, while one part of linseed oil meal to every six parts of corn will balance a ration. Young pigs and shoats need more protein than older hogs. As the hog grows older and fatter, the protein supplement may be decreased somewhat and good results secured.—Missouri College of Agriculture.

RICE FOR HOGS.

To the Editor: What is the feeding value of rice middlings and whole rice as compared with barley or milo for fattening hogs?—S. H. S., Delano.

Whole hulled rice contains slightly more digestible carbohydrates and considerably less protein than barley. Rice polish and rice bran contain more protein than whole rice, the polish being $\frac{1}{8}$ less valuable for carbohydrates, and the bran being less than $\frac{3}{4}$ as valuable as the whole rice in that class of nutrients. Whole rice should be ground and soaked. Rice middlings we presume is a mixture of ground bran, polish, ground broken rice, etc. In the recently completed experiment at University Farm, hogs fed rolled barley, tankage, and alfalfa pasture gained a trifle less per pound of barley than the lot fed a similar ration with milo instead of barley, but these feeds seem of about equal value.

Twelve hundred hogs were recently consigned from Hanford to Los Angeles and San Francisco markets.



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Raising Poultry for Profit

SEASONABLE POINTERS FOR POULTRYMEN.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

We have just had such a nice rain down here so that in spite of high priced feed, everybody, the poultryman included, carries a broad smile. Rain was badly needed and we got it; now the green feed is growing for both hen and animal. Those who do not have alfalfa in this section rely mostly on green barley, but while barley is sweet and tender, and some think it makes a better egg, I think we ought to try a little rye for winter use. Rye contains more heating units than does barley, and I believe if a test was made it would be found to be equally good as an egg maker, while furnishing a little more heat energy than the barley. Our hens might not take to it just at first, but they would soon come to it, and as a purifier of dirty yards I know it is A-1. There seems to be some element in rye that absorbs plenty of fertilizer; it is a grosser feed than barley. One of our neighbors sowed some about two years ago and by starting it early and irrigating once he had plenty of green feed all winter and it was the feed that produced plenty of eggs. At least it would pay to try a small patch as against the same size in barley. I don't believe in being tied to any one thing. A variety in greed feed is just as good as in any other kind of feed, and the royal way to knowledge is to experiment.

Barley makes an egg that is not watery, and the same stands good of any of the grains that are sprouted. Sprouted oats are not only dry greens but they are strong greens; they make for strength in the hen, in the germ and in the chick, but at the same time a little green feed of another variety is a good addition to the daily ration.

Mustard is a very good green but should not be fed in excess, but in moderate quantities young green mustard is a great help to digestion and an appetizer, as well as being warming to the blood. And that is where rye comes in as a winter green—it is warming or heating to the blood. We all know that in cold climates the folks like buckwheat cakes in winter—buckwheat is heating. Russians that live in Dakota always plant rye for their winter's bread in preference to eating wheat flour.

Where the hens have range you will notice they help themselves to a little of everything, showing that "variety is the spice of life" for them in green feed. A variety of grains, too, is better than just one kind, no matter how good it is.

Stop Leaks in Roof.—This is a good time to find out if your poultry house roof is leaking, and if it is, resolve to make the necessary repairs as soon as possible. Wet or damp poultry houses often start mold spores in the litter that later will cause trouble. There is not anything in the whole category of chicken ailments that can't be started from some slight case of neglect,

and leaky roofs are a menace to the whole flock. Mold spores cannot be seen with the naked eye when they start, and after they have made some growth, perhaps the litter dries up and there you are: hens get to scratching and the mold spores get in the nostrils, eventually working their way to the lungs and death is the outcome.

Most any kind of a house will do in this section, if it has a good roof, and that is the least thing anyone can do for his chickens if he hopes for returns from them.

If your houses face the storms, change them for the winter, even though you move them back in summer. Let the closed sides and back face the storms and have a good roof and your flock will be comfortable in winter and free from mold or dangerous drafts.

QUESTIONS AND ANSWERS.

Rats or Animals, Which?—Something is killing my chickens, or rather hens; they kill them and partly eat the carcass. Seems to commence at the vent, but never finish one up clean nor carry one away. —Mrs. S. C., Santa Rosa.

It is rats all right, though there is very little difference between the method of a rat and a skunk. But, as if in pure wantonness, the skunk always kills several and just nibbles a little from each. Rats do carry them away but not always, but a rat always commences at the vent. A good trap is the surest cure, but a rat is very cunning and the trap would have to be buried. The next best thing is poison, and here again it needs caution, for if you ever touch the meat with your hands, Mr. Rat will smell it and leave meat and poison strictly alone. But if you will raise your houses about 18 inches from the ground and set them on blocks, then nail five gallon oil cans around the blocks the house sets on, the rats cannot get into your chicken houses. All poultry houses should be built high enough for a cat or dog to get under and that soon discourages the rats so that they leave your buildings and go to new quarters. We used to have to put all our houses on redwood blocks, and tack tin cans around. That prevents rats from climbing up the blocks and finding a way in by way of the roof or any loop-hole. The poultryman has to sharpen his wits to match the cunning rats, but he can do it and beat the rat at his own game.

Turks Breathe Hard.—A short time ago one of my hen turkeys died. For two days before she died the symptoms were those of an animal gasping for breath. She was able to walk around, but with every breath she would open her mouth and breathing was a great effort. The first day we noticed her we dosed her with castor oil, and as she seemed no better the next day we tried coal oil, and she only lived a few minutes after that. A post-mortem examination showed that her lungs were dotted with yellow spots about the size of split peas, the substance of which resembled curd or cheese. I think the case may have been pneumonia, but would like your expert opinion. —A. H. S.

Your diagnosis is correct, though

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10 inches graduated in mesh from 1/2 inch to 1 1/2 inches then 20 inches of 2 1/4 inch mesh, topped by 4 1/2 inch mesh for the height of the fence.

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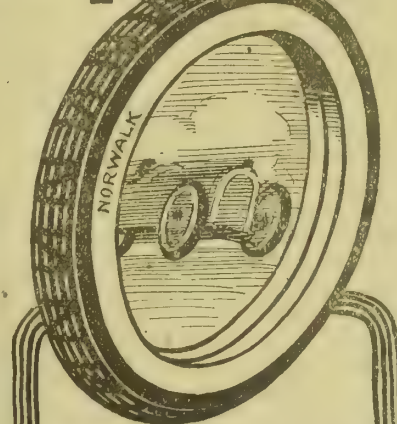
It is the most economical as well as the most practical of all poultry fences. It costs no more to buy than the old style poultry netting and costs much less to put up.

It is the only fence made with a bottom mesh smaller than one inch. It will turn the smallest chickens. Because of the straight line, continuous weave of "CALMADE GRADUATED" Fence, baby chicks won't hang in it, large fowls can't climb it.

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usually a bird with pneumonia does not walk around, but rather keeps in a sort of squatting position with its wings held out from the body. Your treatment was entirely wrong and you undoubtedly killed the hen with it. What you should have done was to have reduced the fever and given some strengthening food to hold her up, and kept her warm. Next time just send a dollar for quick response or first aid and you

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will be money in pocket. Instead of coal oil the hen should have had egg and milk and been given a show. Either your housing is at fault or the bird has been exposed to a cold, damp atmosphere. Anyway this disease is contagious, so you will need to clean up and scald your drinking vessels, feed troughs, etc., and see that your houses are well supplied with fresh air. If this bird has been sleeping outdoors she must have been debilitated, so tone up your flock with good, nourishing food.

Poultry Breeders' Directory.

ROOFDEN RANCH CHICKS—January will soon be here. Book your orders now for early delivery. Barred Rocks, B. I. Reds, Black Minorcas, Brown and White Leghorns. Quality chicks from first-class breeding stock. Hatched right and shipped right—right prices. By the dozen or thousands. We can fill it if you book in time. Circular for the asking. Roofden Poultry Ranch and Hatchery, Campbell, Cal.

BARRED PLYMOUTH ROCKS—COCKERELS—Cockerels—Cockerels—Yes, we have them; also Hens and Pullets—all bred from our Champion Winners at California's leading shows. Also hatching eggs. If it's Barred Rocks you want, get in touch with me right away. Have bred them exclusively for nineteen years. Send for Catalog. Chas. H. Volden, Box 396, Los Gatos, Calif.

BABY CHICKS NOW READY—Hatches every week. B. I. Reds, Barred Rocks, White Leghorns hatching now. Brown Leghorns and Black Minorcas later. Place Spring orders now, and be sure of getting them when you want them. Send for circular and price list. Campbell Poultry Ranch, Campbell, Calif.

WANTED—A number of hot water incubators, Jubilee preferred, 200 egg capacity or over. 220-egg type, Hoganized, S. C. White Orpingtons and Sicilian Buttercups, cockerels, hatching eggs and chicks. All information gladly furnished. M. S. Woodhams, San Mateo, Cal.

WHITE PLYMOUTH ROCKS, White Leghorn Incubator Chicks. Breeding stock. Eggs hatch. Scientifically bred. Awarded all first prizes. California State Fair 1916. Make your arrangements for 1917 delivery of chicks. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

CROLEY'S DRY MIXED INFANT CHICK Feeds for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by Geo. H. Croley Co., Inc., Poultry Supplies, San Francisco.

McFARLANE STRAIN White Leghorn Eggs, \$1.50 per 15, \$2.50 per 30, \$5.00 per 100, \$50 per 1000; chicks, 12c each, until March 1st, then 10c. Big plant, lowest prices, best stock. Catalogue free. Newton Poultry Farm, Dept. 1, Los Gatos, Cal.

THE SANTA CLARA VALLEY HATCHERY solicits your orders for Fall and Spring delivery in 8 breeds of baby chicks. Order early and get the best. Jos. A. Bihn, Lincoln Ave., San Jose, Cal.

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HATCHED CHICKS from Barred Rocks, B. I. Reds, White Leghorns. Good stock. Send for circular. G. L. Hawley, Madera, Cal.

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SILVER-SPANGLED HAMBURGERS—Hens, Pullets, Roosters. Entire flock. None better. Trouble Nurseries, Elk Grove, Cal.

EASTMAN'S BRED TO LAY Barred Plymouth Rocks, Chicks, Eggs, Cockerels. Fairmead Poultry Farm, Fairmead, Cal.

CHICKENS, DUCKS, GESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, Cal.

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BOURBON RED TURKEYS—Early maturing, creamy skinned. The stay-at-home kind. Our stock winners at P. P. I. B., Los Angeles California State Fair. Rich, dark-red young Toms, sold by 1st Los Angeles Old Tom, \$8 and \$9. Pullets, \$6. Can mate stock not skinned. Ferris Ranch, Rt. 2, 144 D. Pomona, Cal.

BOURBON RED TURKEYS and Eggs for hatching. My birds won all the honors in the Alameda County Poultry Exhibition in Oakland 1914 and just as fine this year. A. E. Balcer, Alhambra Valley, Martinez, Cal.

WANTED—Three Narragansett Gobblers for breeding purposes. Address V. Eickhoff, E. F. D., No. 1, Lakeport, Cal.

THOROUGHBRED WHITE HOLLAND Turkeys. Toms \$5; Hens \$2.50. Old White Holland Toms \$7.50. Peas Guineas, \$1 each. E. A. McKimley, R. D. 1, Ukiah, Cal.

HART'S BRONZE TURKEYS AND EGGS—Large reduction in price of stock. Order now for fall delivery. Free Circulars. Albert M. Hart, Clements, Cal.

WHITE HOLLAND TURKEYS—Old and young Toms and pullets. Prices reasonable. Alice Merriam, Route 2, Pomona, Cal.

MAMMOTH BRONZE TURKEYS—Mrs. H. B. Kimball, Farmington, Cal.

LOS ANGELES POULTRY SHOW.

[Written for Pacific Rural Press by Harold Walthew, President of Poultry Breeders' Assn. of California.]

It is barely a month before the Los Angeles Poultry Show, Jan. 3-9. All who expect to exhibit should get busy with their birds and get them into first-class condition. This show will, from all indications, be the largest and strongest in quality of any show ever held in Los Angeles.

The Black Minorca Club of America are holding their club show in conjunction with us, and we anticipate some 300 or 400 will be penned.

The Rock Club are making great preparations, and all those interested in all the different varieties of Rocks will find them there in numbers and quality beyond their fondest dreams.

The Orpington Club are also making special efforts to pen a large display, particularly in the Whites and Buffs. Then there is the Partidge Orpington, and originated by a Californian. These birds should really be taken up more by the public. They are most excellent layers and a fine table fowl.

The Wyandotte Club expects to make a strong showing of this fine utility fowl. The string of Whites for quality and quantity is expected to far exceed other years.

The Rhode Island Red Club as usual is putting forth that surplus energy for which Red Men are noted to make the Red alley the alley of the show. This grand utility fowl is still forging ahead, and the color of them is getting more and more uniform each year.

The exhibit of turkeys is sure to be strong. Last year we had the finest exhibit ever held on the Pacific Coast.

Rabbits. — All rabbit breeders should attend the Los Angeles Poultry Show. The Pet Stock Association of California are having their show in conjunction with us this year, and around 400 rabbits are expected. Write at once for entry blanks to Walter M. Ross, 224 West Colorado St., Glendale, Cal.

POULTRY NOTES.

A Monrovia poultryman says, "The more a hen eats the more eggs she will lay and the more time she has in which to eat, the more food she will consume and the more eggs she will lay."

The 400,000 hens in the Southern California district have been signed up for the new marketing plan proposed by State Market Director Weinstock. The Central California Poultry Producers' Association will control 1,200,000 hens.

It has been found that during seven and a half months 307 hens kept in yards with a yard space of 39 square feet per fowl laid 1200 more eggs than 307 hens kept closely confined, says a University of California experimenter.

With barley selling at \$2.40 a hundred, and wheat at more than three cents a pound, rice which is bringing the growers only about \$1.75 a hundred, is about the cheapest feed for chickens that can be found anywhere, it is claimed.

It has been proved by a three-year feeding test at the University of California Farm at Davis that great

savings in cost in feeding chickens may be obtained when 7.7 per cent of animal proteids are balanced by 15 per cent of vegetable proteids, this giving as good results as feeds containing 30 per cent of animal proteids. This is important, because animal proteids cost from \$56 to \$80 a ton, while those from vegetable sources range from \$36 to \$40 a ton.

Many valuable publications on poultry matters have been issued by the University of California. Among recent publications which may be obtained free by writing to the College of Agriculture at Berkeley are "Practical and Inexpensive Poultry Appliances," "Suggestions to Poul-

Professional Directory.

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trymen. Concerning "Chickenpox," and "Round Worms in Poultry." Soon to be issued is a paper on "How to Operate an Incubator." Many thousands of poultry-growers throughout the State are taking the

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16 tanks 3 ft. 1 in. x 6 ft. 8 in. x 1 1/2 in.	\$8.50
1 tank 5 ft. x 5 in. x 2 in.	\$12.50
1 tank 5 ft. 8 in. x 5 in. x 2 in.	\$14.00
1 tank 5 ft. 8 in. x 5 in. x 2 in.	\$14.00
1 tank 5 ft. 6 in. x 7 ft. 6 in. x 2 in.	\$17.50

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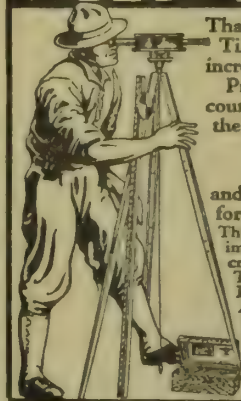
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and other poultry to us unless you expect to get all the advantages the San Francisco market affords; that is efficient service, honest weight, and prompt returns at sales, less commission.

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Shipments of dressed Turkeys for Christmas market should reach us December 22 and 23.

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Western Meat Co. San Francisco

Mrs. Best's Letter.

My Dear Friends: With Christmas only one short week away, we will all of us be as busy as bees, with the final shopping and the finishing up of gift making to attend to.

I hope some of you are making the painted gift boxes this year. These boxes are of tin or wood and require absolutely no skill to decorate. The stencil design is transferred to the box by means of transfer paper. The background may be of any shade and the design worked out in harmonious contrasting colors.

The only requirements for the work are two small cans of enamel paint—one of white and the other of black—and a few tubes of oil paints with a child's paint brush. By combining the white enamel with the oil paint in the tubes any desired color may be obtained. The interior of the box should be painted also.

These boxes make such attractive receptacles for candies, nuts, fancy cakes, choice figs, plum pudding or glasses of jelly and can be utilized afterwards for work boxes.

The brown Japanese baskets, with covers, decorate very artistically with designs in soft colors painted on one side, while the baskets with handles will often have a stippling of gold paint along the edges and across the handle with a bow of ribbon to give the finishing touch. These baskets are usually filled with home-made candies.

The stores are full of pretty things in wearing apparel for girls and women and nothing is nicer, especially for a young girl, than some garment her heart has longed for.

The skating sets are equally good for motor use and are wonderfully becoming to youthful faces. One pretty one has a white Angora tam, with a Scotch plaid bandeau brim and a button and tassel on top. The scarf is of white Angora, having wide border stripes of the plaid, at the ends and deep white fringe. White mittens with gauntlet wrists complete the set.

The crepe-de-chine underwear makes very dainty gifts and can be purchased in white and soft colors and is beautiful for dainty wear.

Negligees of all sorts from the Japanese hand-embroidered kimonos to simple saques of albatross, can be had at all prices and in all colors.

But perhaps the thing that will appeal to the average girl most is jewelry and the two most desired articles are rings and necklaces. In rings particularly, there have been marked change and a ring may be as badly out of style as an old hat. The new rings are light and graceful and the old style prong setting has entirely disappeared. Silver and white gold are being used

extensively and many rhinestones are being used. In happy combinations, these rings can hardly be distinguished from real stones set in platinum, so cleverly are the better rings copied.

The new form of solitaire ring has the center stone set round with many other stones in artistic designs.

In necklaces, silver is used as a substitute for platinum and the semi-precious stones are small and surrounded by a gallery setting, which makes a very good effect.

Rosabella Best.

A SET OF PLACE-CARDS.

A clever set of turkey place-cards seen in a stationer's store could be copied at home to use for the Christmas dinner. There were 12 cards and on each card a different question that must be answered by the person at whose place the card was put. The hostess holds the key to the answers. Use plain white cards to write the questions on and either draw or paste a cut-out picture of a turkey on each one. Following is the list of questions:

1. What part of a turkey is used in music?
 2. What does the dressmaker do to the turkey?
 3. Why has the turkey five reasons for being sad?
 4. When is a turkey like a small boy who has eaten too much?
 5. What feathers find a place on my lady's dresser?
 6. What part of a turkey is part of a sentence?
 7. What part of the turkey is an Oriental?
 8. What part of a turkey appears on the field of battle?
 9. What part of a turkey opens the front door?
 10. What part of the turkey assists my lady in making her toilet?
 11. What part of the turkey is a story?
 12. When the turkey is cooking, in what country is he?
- The answers, which should be written on a separate card and furnished the hostess only, are as follows:
1. Feet.
 2. She bastes it.
 3. He gets it in the neck.
He gets a roasting.
He is much cut up.
We all pick on him.
And after all this, he is in the soup.
 4. When he is stuffed.
 5. Pinfeathers.
 6. Claws (clause).
 7. First part, Turk.
 8. Drum stick.

THE HOME CIRCLE

9. Last part, k-e-y.
10. Comb.
11. Tail (tale).
12. In Greece.

CHRISTMAS CANDY.

The foundation of many delicious candies is fondant and the following are rules for making it: To 5 cups of sugar, add 1½ cups water and ¼ teaspoon of cream of tartar. Stir until sugar is dissolved. Cook slowly to the soft ball stage. Wipe down the crystals from the sides of the vessel with a damp cloth wrapped around a fork. When done, pour the syrup on a platter. When cool enough to allow the fingers to be held in it, stir with a wooden spoon until it creams. Then knead until smooth. Wet and wring a small towel, place it over the fondant, and allow it to remain there for an hour. This is called the curing process. Fondant improves with age and can be made into a variety of candies; plain creams with nuts on top, stuffed dates, chocolate creams, fruit centers, after dinner mints and so on.

For chocolate creams, mold the cold fondant and dip into melted unsweetened chocolate to which a piece of paraffine has been added. Melt the chocolate and paraffine over hot water.

For plain creams, in addition to walnut meats, blanched almonds, candied cherries or glazed pineapple make a nice variety.

To make Tutti Frutti loaf, the fruit, consisting of candied pineapple, candied cherries and walnut meats, should be added to the fondant syrup as soon as it is taken from the fire. When cool, it should be beaten and kneaded and then formed into an oblong loaf. When ready to use, cut in half-inch slices and wrap in paraffine paper.

CHRISTMAS DECORATIONS.

Here in California, where evergreen shrubs and red berries are so plentiful, there is no excuse for not having an attractively decorated home for the Christmas holidays.

Trailing vines of smilax and plumosas are dainty and combine beautifully with the red of the paper Christmas bells. These bells only cost a few cents apiece and can be used for years if put away from year to year.

The holly wreaths can be made either of cedar, or the green holly and the red berries can be tied on at appropriate places. A heavy wire makes a good foundation to which to tie the green foliage and a big bow of red ribbon gives a cheerful effect. This bow is equally effective if made of red crepe paper. The paper can be purchased in rolls the desired width or by the large roll and cut in strips. It improves the appearance of the paper bow if the strip is pulled along the edges, giving a ruffled effect. The work of decorating and making of wreaths is very much enjoyed by children and they should be encouraged to help about it. In many homes, each front window has a wreath hanging in it and of late years, they have been

also placed on the outside of the front door.

BURDETTE ON CHRISTMAS.

To me it seems—and it isn't my fault that the sunset is fairer and lovelier than the sunrise—that there was something more Christmasy about Christmas when I was a boy. Its pleasures were simpler, its gifts were heartier. At least, I cannot remember to have read, save in these later years, articles in family journals and magazines bewailing the burden of toil and worry and expense in the planning and making, or purchasing of Christmas presents. "Krismus gifts" we called them when I was a boy. It didn't and doesn't have much refinement of culture in the spelling and sound thereof. But the people who made them didn't rush into the papers to tell how much it cost them, and how tired to death it made them, and how glad they were that it was all over for another year. But last year and the year before I read such articles in print. So did you. Wherefore it seems to me that we killed Kris Kringle a full century too soon. We have more currants in our Christmas cake under the reign of Santa Claus, it is true. But we have also more flies in it.—Robert J. Burdette.



It makes no difference if you do live away from Los Angeles, you can take advantage of all the exceptional Holiday shopping facilities at Barker Bros. without making a personal visit to our store. Our

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extends to you the convenience and assistance of its helpful service in the choosing of your Holiday gift and home furnishing merchandise.

—for at Barker Bros. you will find THOUSANDS of appropriate, practical, useful, and worth-while gift articles—the kind that will make your gift lasting and doubly appreciated:

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It is free. It will give you an idea of our exceptional preparedness to meet every gift want. Send for this booklet today! Just address our MAIL ORDER DEPARTMENT.

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LOS ANGELES, CAL.



1916

SOME GOOD OLD-FASHIONED CUSTOMS, WE'D NEVER MISS, NO DOUBT; BUT SENDING CHRISTMAS GREETINGS, WE COULDN'T DO WITHOUT. I'M GLAD THE CUSTOM LINGERS, AND I HOPE IT ALWAYS WILL; FOR THE SAME OLD-FASHIONED FRIENDSHIP. PROMPTS THE SAME OLD GREETING STILL.

—Gust C. Magnuson.

The Christmas-Tree Wood

Ho, little fellow, if you will be good
Some day you may go to the Christmas-Tree Wood.
It lies to the north of the Country of Dreams,
It glitters and tinkles and sparkles and gleams;
For tinsel and trinkets grow thick on the trees,
Where wonderful toys are for him who will seize.

You go by the way of the Road of Be-Good
Whenever you go to the Christmas-Tree Wood,
And when you draw near you will notice the walls
That rise high about the fair City of Dolls,
Whose entrance, unless you are wanted, is barred
By Tin-Soldier regiments standing on guard.

It's over in Candy Land, there where the shops
Forever are turning out peppermint drops;
Where fences are built of the red-and-white sticks
And houses are fashioned of chocolate bricks,
Where meadow and forest and sidewalk and street
Are all of materials children can eat.

You sail on a ship over Lemonade Lake
And drink all the waves as they quiver and break,
And then, when you land, you are under the trees
Where Jumping Jacks jump in the sway of the breeze—
But only the children most awfully good
Can ever go into the Christmas-Tree Wood.

—From "The Land of Make-Believe,"

by Wilbur Nesbit, issued by Harper & Bros.

A LITTLE PEACEMAKER.

"I don't see how I can be bothered with him," gasped the Lady Who Runs Things. "Why did you bring him, John?"

"Oh, please, mother, please," pleaded the Only Little Daughter. "Uncle John brought him because he knew I needed a dog. Didn't you, Uncle John? Down, Captain, down."

Captain, "part black-and-tan and part—just dog," aged four weeks, had not yet learned English. Four inches was about as far "up" as he could get. So perhaps it was unreasonable for her to expect him to "down." The Lady Who Runs Things heaved a resigned sigh, and said, "Well." And the Only Little Daughter picked Captain up in her apron and hurried down to the kitchen. She cleared out her second-best doll house, and made it ready for the new tenant. Captain had come to stay.

Next morning when the lady hustled into the kitchen with forty things on her mind, "Wow! wow!" came from the second-best doll house, and suiting the action to the word, Captain came sprawling across twenty feet of oilcloth, with tail and ears and all four legs working simultaneously, though not in unison.

The Lady glanced at the hall door to see if any one was coming. Then she stopped and patted the sleek forehead that bulged over two wide-set, shining eyes. "You cunning little nuisance," she murmured, and poured the top off the milk into the little basin. The Lady Who Runs Things had capitulated.

A few minutes later the sound of common-sense shoes was heard on the back stairs. It was the Angular Lodger. She always found time to report, before going to business, if the two Silly Things in the side room next her giggled after the lights were out at ten, or if the Old Maid upstairs had watered her plants and spattered water on her (The Angular Lodger's) windows. She and the Old Maid had not spoken for seven months.

"I think you ought to know," she began. "Why, what's that, a

puppy? A black-and-tan puppy! I used to have the dearest little black-and-tan puppy," and she forgot to report, and let two cars go by, while she cuddled Captain.

In the course of the forenoon the Old Maid came down to the laundry to do a bit of washing. "Wow!" remarked Captain gently and experimentally, for her face looked very "set" and unpleasant. She was wondering if the Angular Lodger had entered a complaint that morning. But when she saw those eager, inquiring eyes, her expression changed so suddenly that Captain wondered if he had been mistaken in fancying she looked cross. "You funny little duck," she cooed, and the Lady Who Runs Things looked in amazement to see the stately Old Maid down on her knees before the doll house talking baby talk.

Thus Captain's entourage grew apace, and when after countless efforts, he succeeded in sitting down, in real nonchalant dog-fashion, without tipping over, the whole force of lodgers came down to see him do it. Cheerfulness was Captain's native element, and sociability his meat and drink. None could resist the atmosphere which he created.

But just before Christmas Captain was suddenly taken sick. Every lodger in the house prescribed persistently. Yet he grew worse. He no longer vaulted from the second-best doll house and scurried across the oilcloth to greet his friends. He could only cock his silky ears and wag his absurdly little tail in welcome. After a while he did not even do that. Then the Only Little Daughter came and hid her tear-stained face on her mother's lap, and whispered, "Instead of buying me Christmas presents, take the money and pay a doctor to cure Captain."

So Captain was taken by his little mistress to the dog doctor. He patted the dull little head, and said, "Leave him with me, my dear. Come again tomorrow. He may come running out to meet you." But he did not that day, nor the next, nor the next. The suspense became very hard to bear. At last the news came. Captain was better.



Everybody, from Dad Down, Gets Better Wear, Comfort and Looks

No matter whether it's Dad, who plays havoc with socks—mother and the girls who want good-looking hosiery—or the children who require sturdy, wear-proof stockings, Durable Durham Hosiery will give everybody better wear. Durable Durham Hosiery is made strongest where the wear is hardest. The heels, soles and toes are heavily reinforced and the tops are knit on securely. The children's hose has triple reinforced knees that make them wear and tear-proof.

DURABLE DURHAM HOSE

FOR MEN, WOMEN AND CHILDREN

is backed by an unlimited guarantee to assure satisfaction. Mothers, take advantage of this chance to cut down darning and knitting, by buying this high quality hosiery that sells for the low cost of 10, 15 and 25 cents. If your dealer doesn't carry Durable Durham Hosiery, tell him to stock it.



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Durham, N. C.

For your better-than-every-day wear, buy Durable Durham Mercerized 25-cent Hosiery.

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For Xmas—or any other time—there's nothing more pleasing or useful than a good oil heater. Nine hours of solid comfort from a gallon of PEARL OIL. Good-looking, dependable, durable.

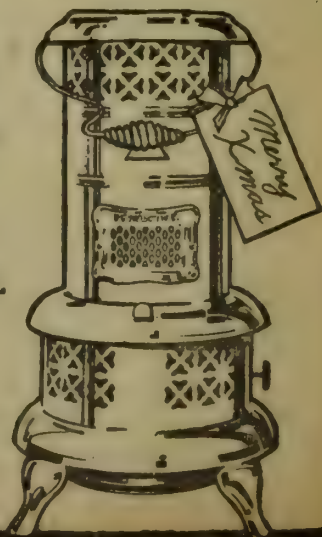
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Big Ben's the only time-clock the modern farmer knows.

That's why Big Ben goes to the farm, at Christmas every year—to lend a hand in preparing for planting days.

Where Big Ben's wound up every night, the farm cannot run down.

He's seven inches tall, spunky, neighborly—down-right good.

At your jeweler's, \$2.50 in the States, \$3.50 in Canada. Sent prepaid on receipt of price if your jeweler doesn't stock him.

Western Clock Co.

La Salle, Ill., U. S. A. Makers of Westclox



Don't fuss around half drenched when the **FISH BRAND REFLEX SLICKER** \$3. will keep you dry and comfortable

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CUT FLOWERS

Cut out the Middleman. Buy direct from the Grower. All varieties of cut flowers in season direct from the plants, sent by parcel post or express. Also floral work of all kinds. Try a sample order. 40 varieties of ferns in 4-inch pots now ready, 25c each.

GEO. N. TYLER,

Brookdale Nursery, Los Gatos, Cal.

LABELS FOR FRUITGROWERS

Beautifully lithographed stock labels ready for immediate shipment. Write for free samples—address Label Department.

SCHMIDT LITHOGRAPH CO., San Francisco.

Christmas morning dawned. The Angular Lodger came down early into the kitchen. "Wow! wow!" came from the second-best doll house, and a thin little shape scurried over the oilcloth.

Just then the Old Maid came down. "O-o-o-h! He's back!" And then those two looked at each other across Captain's little head as it bobbed this way and that while he tried to lick their faces impartially.

"I had a fine Christmas box from my sister down East—turkey and all the fixings," stammered the Angular Lodger. "I'd be pleased to have you take Christmas dinner with me."

"I'd be delighted," chirruped the Old Maid.

"And I think," continued the Angular Lodger, "that I'll invite the Silly Things. I know they were going out to a horrid dining room."

And it came to pass that there was a merry party that Christmas day in the Angular Lodger's sunny square room. And down in the kitchen Captain held court and kept open house.—M. L. U. in Our Dumb Animals.

Good Health.

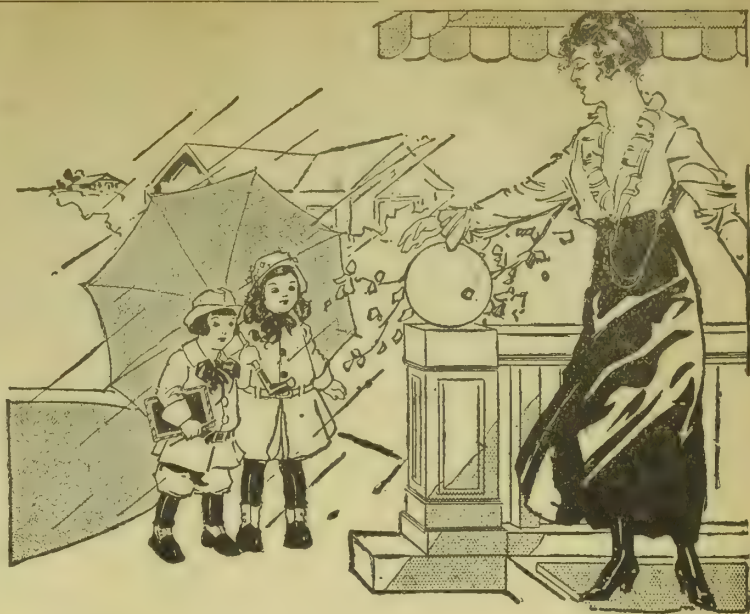
[By H. E. Pastor, M. D.]

Health Preparedness.

The State Board of Health of Calif. has been the target of much criticism for some years past, mainly at the hands of people incapable of understanding the Board's duties or appreciating its importance. The fact is, the average layman, with his smug and opulent ignorance of the subtleties of disease, especially disease of an infectious or contagious character, never wakes up to the importance of erecting barriers against its inroads until too late, and he and his are in its grip; and so the Board receives a support so niggardly as to defeat the purpose of its creation, and is then denounced for an impotency that the critics themselves have brought about. It is now proposed to enlarge the present functions of the State Board of Health by introducing a bill at the next session of the Legislature providing for the division of the State into six health divisions, each division to have a State Health officer in charge, also to have ten sanitary inspectors for active work all over the State, instead of one, as at present, in case of disease outbreak or other emergency. On the face of it the plan seems proper and necessary, and such a health administration, if kept free from the blight of politics, can accomplish a good far beyond the expense of its maintenance. Matters of health which threaten the public welfare cannot be left to private judgment, for "what is everybody's business is nobody's business."

Do a Little Figuring.

A. E. Perkins, dairy chemist at the Ohio Experiment Station, has been doing some figuring on the results of his professional investigations and their bearing on the high cost of living. He thinks that milk is not less wholesome than other foods because it is cheaper. He says that a quart of milk is equal in food value to three-fourths of a pound of beefsteak, eight eggs, 15 pounds of oysters, two pounds of fish, six



"Hurry, children—I've got a real treat for you."

Ghirardelli's Ground Chocolate

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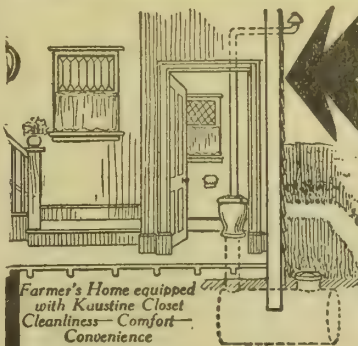
It comes **PROTECTED**—as all chocolate should—in ½-lb., 1-lb., and 3-lb. hermetically sealed cans.



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San Francisco



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Not a mere chemical commode—but a practical, permanent tank installation and the most sanitary method of sewage disposal in existence. Endorsed by health authorities all over the country and extensively used in public service.

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Or Call in Person.

OFFICES AND SALES ROOM:

KAUSTINE BLDG., 467 6th Street, OAKLAND, CAL.

pounds of tomatoes, or three pounds of apples; and milk is the most digestible of all—oysters not excepted. Mr. Perkins says, too, that cream is not the only nutritious constituent of milk, but asserts that the skim-milk contains about half the food material of the whole milk. Digestive disorders not infrequently follow excessive eating of fat, and for this reason the whole milk is much more wholesome than the cream taken alone. But do something toward solving the high cost of living by carrying a little farther the calculations of Mr. Perkins, comparing the present cost of milk with the present cost of the other articles of food enumerated.

An "Old Wife's" Remedy for Rheumatism.

Rheumatism is an intractable disease, and is rarely benefited by medi-

cation. The writer recently had this "old wives'" remedy called to his attention. He has never tried this, but gives it for what it is worth. It was contributed by Sir Lauder Brunton to the London Lancet. He had prescribed a standard formula for a chemist's wife, who suffered severely with rheumatism. His prescription had failed to give her relief. A friend told her to powder the inside of her stockings with sulphur, and wear them all night. In a short time, the doctor relates, the sufferer was entirely cured.

A Good Deodorant.

In country districts where there is no modern system of sewerage, a valuable, practical and cheap deodorant can be provided by adding a pound of unslaked lime and copper sulphate to ten gallons of water and thoroughly stirring.

SAN FRANCISCO.

San Francisco, Dec. 13, 1916.

WHEAT.

The Eastern drop due to peace talk is not reflected here, and is not likely to be for some time. Stocks in warehouses are much lighter than last year, with little left in farmers' hands; and as the market depends on Northern supplies, which are coming slowly because of car shortage, values are firmly held, though business is slow.

[First-hand prices on strictly first-class grain, San Francisco.]

Sonora wheat\$2.75@2.80
Northern clubNone offered
Calif. club, cti2.65@2.75
Northern Bluestem2.85@3.00
Northern RedNone offered

BARLEY.

Stocks of barley in warehouses are very much less than a year ago, and the general outlook is for a firm market, though there is very little movement at present, outside of the local jobbing trade. The dullness is due to difficulty of making deliveries, large shipments being held up by lack of cars.

Seed, cti.\$ 2.50
Shipping, cti.2.35@2.40
Choice feed, cti.2.20@2.32

OATS.

Values unchanged. Stocks here are very light, with a fair demand for both feed and seed grades.

Texas Red seed, cti.\$2.85@3.00
Red seed\$1.80@1.85
White2.15@2.20
Black seed3.50

CORN.

Egyptian is moving well, and prices are firmly held on all grades. California yellow is quiet, but firm, with little Eastern offered.

[First-hand prices on strictly first-class grain, San Francisco.]
Eastern Yellow, ctiNone here
California2.40@2.50
Milo MaizeNominal
Egyptian, new2.25@2.35

BEANS.

Stocks of beans in California warehouses Dec. 1 were much larger than at the same time last year, the movement from growers' hands having been much more rapid; though there has also been a large movement to other markets, and a great deal has been sold that is still to be shipped as cars are available. The greater part of the crop is now believed to be out of growers' hands. Values show some further advances, limas being much higher, with supplies cleaning up in many districts. Tepary beans have also been marked up, and Mexican reds are slightly higher. The market in general is much less active than for the last two months, the change being attributed entirely to the normal holiday influence, as grocers have covered their needs and are concentrating on seasonal goods. There has been quite a large movement of tepary beans, owing to the high price of other lines; but they find little favor, and some large dealers refuse to handle them. It is complained that they have an earthy taste, contain lots of green beans and refuse, and do not cook up like white beans. However, they are apparently getting an introduction, and their cheapness is strongly in their favor.

[On wharf, San Francisco.]

Bayos, per cti.\$5.75@ 6.00
Blackeyes5.00@ 5.10
Blackberry beans6.60@ 6.90
Horse beans2.25@3.50
Small Whites (south) new crop7.00@10.50
Large Whites, new crop.8.10@ 9.50
Pinks6.50@ 6.80
Limas (south)7.40@ 7.60
Red Kidney9.00@11.00
Mexican Reds6.50@ 6.75
Tepary beans5.00@ 6.00

HAY.

Arrivals continue below current needs in this city, and the local market is very strong, with occasional sales at a premium over the prices quoted, especially on fancy grades. The cheaper grades also are in strong demand, and everything is readily disposed of, although local business is unusually quiet. If current needs were up to normal the situation would be serious, as it is practically impossible to get cars. Country consuming markets also are strong, and strenuous measures have been used to get the necessary cars. Alfalfa is coming fairly well from the river districts. Demand for straw is active.

[Wholesale prices per ton, carload lots, San Francisco.]

Wheat, No. 1\$16.00@18.00
No. 214.00@16.00
Tame oats13.00@16.50
Wild oats13.00@15.00
Alfalfa12.00@15.00
Stock hay10.00@13.00
Straw, per bale60@ .80

FEEDSTUFFS.

Rolled barley has receded slightly from the last advance, as the demand has been curtailed. Aside from routine jobbing trade, the feed movement is quiet, as usual just before the holidays.

Beet Pulp, per ton\$27.00@28.00
Alfalfa meal, per ton20.00@21.00
Bran, per ton30.00@31.00
Oil Cake40.00@41.50
Cocoanut cake or meal.31.00@32.00
Cracked corn50.00@55.00
Middlings39.00@40.00
Rolled Barley46.00@47.00
Tanka47.00@48.00
Rolled oats47.00@48.00
Rice middlings33.00@34.00

POTATOES, ONIONS, ETC.

The call for potatoes continues rather light, the consuming demand

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

having apparently been curtailed by the prices. Prices have been shaded in some cases, but are not notably lower, and dealers look for no general decline. Onions are quiet but firm, while garlic is easy, with rather heavy offerings. Lettuce is coming freely from Sacramento and Los Angeles, the southern stock being preferred. String beans and peas are lower.

Lettuce, L. A., crate50@1.00
Sacramento75c
Celery, Alameda, bunch15@20c
String beans5@12½c
Lima beans8@10c
Peas, lb.5@12½c
Tomatoes, lugs, L. A.\$1.00@1.25
Rhubarb, lugs.75@1.00
Potatoes, cti, Delta.2.00@2.35
Salinas2.40@2.60
Oregon1.90@2.25
Onions3.00@3.25
Garlic, new crop, per lb.3@4c

POULTRY.

Both dressed and live turkeys are again coming in, and find fair demand at comparatively high prices. Eastern chickens are arriving freely, causing a little easier feeling as to hens, while fryers and roosters are firmer. Squabs are lower, while ducks show a slight advance.

POULTRY.

Turkeys, dressed, large, lb.28c
Turkeys, live, lb.23@25c
Broilers, 18 lbs. to doz. and less, lb.26@28c
do, over 18 lbs. to doz.21@23c
Fryers21@22c
Hens, extra, per lb., colored19@20c
Small leghorn15@17c
Smooth Young Roosters, per lb. (3 lbs. and over)21@22c
Squabs, per lb.38@40c
Geese, per lb.16@17c
Ducks17@18c
Old15@17c
Belgian Hares12@14c

BUTTER.

Eastern and foreign shipping orders are still lacking, and a good-sized Government order has failed to clean up the market. There has accordingly been a gradual downward movement, amounting to 2c for the week.

Extra35½ 34½ 34 34 33½
Prime 1st. 35 34 33½ 33½ 33
Firsts34 33½ 33 33 32½

EGGS.

After holding fairly steady for a week, extras have dropped again. Supplies are coming freely, with production at nearby points on the increase, while shipping demand is lacking. The lower prices, however, have brought a much better consuming demand.

Extra40 40 39½ 40 40 37½
Sel. Pul.37 36½ 36 36 36 34

CHEESE.

There has recently been some call for shipment to distant points, but this has fallen off, and flats are lower. Y. A. and Monterey cheese, however, have been coming in rather slowly and now show an advance.

[S. F. Dairy Exchange prices.]
Y. A. fancy19½c
Fancy Calif. Fats, per lb.16 c
Monterey Cheese17@19c

DECIDUOUS FRUITS.

The fruit market has narrowed down rather closely, apples being about the only line offered in much quantity; and in this line most supplies are now in storage. The demand keeps up in good shape, and prices are steady without further change.

Cranberries, Cape Cod, bbl.11.00@11.50
Apples:

Christmas apples, bix\$2.00@2.25
Bellflower, box1.00@1.13
Jonathans85@1.00
Newtown95@1.10
Pears, Winter Nellis2.25@2.75
Persimmons, box, dbl. layer.65@ .90

DRIED FRUITS.

Prices have not changed during the last week. The market throughout

the country seems to be a little disturbed at the moment by the peace talk; packers here state that a sudden end of the war would bring an enormous demand for dried fruit from Europe, which would cause increased firmness in many lines. The outlook, however, is too uncertain to warrant much speculative buying, while holders are perhaps a little less anxious to sell. The business now is mainly a matter of trading between packers and jobbers, as there is little fruit left in the country. Pears have had considerable attention since other lines have been cleaning up, and there is little desirable stock now left. Only a few lots of prunes remain in producing districts; and most of the apples have gone out. While sales of raisins for the holidays have been very large, it is stated that because of the car shortage it will be impossible to make full deliveries for the season.

[Net to growers, bulk basis, f. o. b. shipping point.]

Apples, new crop8 @8½c
Apricots, per lb, 191615 @16 c
Figs, white, 1916None offered
Figs, blk5½ @ 6 c
Callimyrnas, 1916None offered
Prunes, 4-size basis, 19166½ @ 7 c
Pears6½ @ 7 c
Lake County Pears11 @12½c
Peaches7½ @8 c

ALMONDS.

Trading is rather quiet at present, as the trade has covered its holiday requirements, and activity is concentrated in the retail end of the business. Any large lot of desirable stock, however, could be placed without trouble, as supplies are light in practically all markets.

[Exchange prices.]
Nonpareils, lb.20½c
I. X. L.13 c
No Plus17 c
Drakes16 c
Languedoc18 c

HOPS.

Values show no further change. A number of sales have been reported recently, both in Oregon and California, but buyers are not taking hold with any eagerness, and the market is rather weak, with brewers holding off and no foreign movement. A sale of Mendocino hops was made this week at 11c.

Sacramento9@10½c
Mendocino10@11c

HORSES.

A large lot of heavy drafters and chunks have been put on the local market this week, including quite a number of really attractive animals. The offerings brought out a little more interest than has been manifest for the last few weeks, but hardly as much as was warranted by the class of the stock; and considerable difficulty has been experienced in getting satisfactory prices. As an indication of the tendency of the market, a large part of the offerings were from a large local concern which is putting on motor trucks.

Drafters, 1700 lbs. and up.\$ 250
Drafters, 1550 to 1650 lbs.150@200
Chunks, 1350 to 1500 lbs.150@175
Wagon horses, 1050 to 1350 lbs.110@150
Green Mountain range horses, 950 to 1200 lbs.20@ 75

GROCERIES.

The local price of flour continues at \$9 to \$9.40. Sugar has dropped again, being now quoted on the basis of \$7.40 for granulated.

LOS ANGELES.

Los Angeles, Dec. 12, 1916.

BUTTER.

Receipts of week ending Dec. 12, 1916—270,830.

Receipts of week ending Dec. 12, 1915—205,000 lbs.

There was a further break in the market the past week. Receipts were

somewhat better than the week before and showed a marked increase over the same week last year. The boycotting of butter in the Eastern markets, owing to the unusual high prices, had a sympathetic influence and cut off all Eastern demand that was had heretofore. The market here broke 2c during the week and in San Francisco 1½c, while Chicago is 2c lower and New York is off ½c. Still even at these declines the market is 6c higher than a year ago and the home consumptive demand is holding up fairly well.

We quote extra creamery34c
Prime first33c
First31c

Wed. Thu. Fri. Sat. Mon. Tu.
191636 36 35 34 34 34
191526 27 27 27 28 28

EGGS.

Receipts (railroads) for week ending Dec. 12, 1916—931 cases.

Receipts (railroads) for week ending Dec. 12, 1915—673 cases.

A steadier but quiet market was had the past week. Receipts were a little better and showed a fair increase over the arrivals for the same time last year, but as cold-storage stocks here are less than this time last year and Christmas demand approaching the better receipts failed to influence prices. The boycott now going on in the Eastern markets failed to influence prices here, but at the same time made buyers more cautious and backward. In San Francisco the market closed the same as a week ago and the same may be said of this market. Chicago, however, is 1½c lower while New York remains the same as at the close of our last review. Receipts by rail here for the week were 931 cases and estimated receipts by truck 600 cases, making a total 1531 cases against 1273 cases by rail and truck the same time last year.

We quote fresh ranch case count. 40c
Pullets, 36c, Candle 2c, and selected 3c over quotations.

Wed. Thu. Fri. Sat. Mon. Tu.
191640 39 38 38 40 40
191539 39 38 36 37 36

POULTRY.

A quiet market was had the past week for everything. Receipts were light and so was the demand. Broilers and fryers as well as roasters moved less freely. Turkeys, geese and ducks also met with a quiet market, but while there has been less doing, prices show no quotable change.

We quote from growers:

Broilers, 1½ to 2 lbs.23@24c
Fryers, 2½ to 3 lbs.20@22c
Hens, over 4 lbs.18@19c
Ducks17@18c
Geese16@17c
Roosters, 3 lbs. up. (soft bones) 18c
Turkeys, heavy, 12 lbs. and up. 23@24c
Turkeys, light21@22c
Squabs, live, per doz\$1.50@3.00
Dressed3.75@4.85

HAY.

There was a little more life to the market the past week though prices show no quotable change. Receipts were not very heavy and what hay arrived was in better condition, which caused to take hold with less hesitancy than the week before.

[F. o. b. Los Angeles.]

Barley hay\$16.00@18.00
Oat18.00@20.00
Alfalfa, Northern15.00@16.20
Alfalfa, local17.00@18.00
Straw7.50@ 8.00

BEANS.

There was little doing in this market the past week. At the same time holders were firm in their views. Limas and pinks were higher under light offerings, the former ¼c and the latter ½c. All else unchanged. Jobbers holding out of the market and but little movement is expected until after the first of the year.

We quote from growers:

Limas\$7.75@8.00
Large white9.25@9.50
Small white9.50@10.00
Pinks7.25@7.50
Blackeyes5.25@ 5.75
Tepary5.75@ 6.25

WALNUTS.

There is little to be said about this market since our last review. No number 1 and 2 nuts to be had from first hands. They continue to be bid for at ¼c over the Association prices. A good many culls continue to arrive and bringing 5@6c per pound.

The Associated prices this year and last are:

	1916	1915
No. 1	15.50c	13.50c
No. 2	12.50c	10.00c
Budded	19.90c	17.00c
Jumbos	17.50c	16.00c

Orchard run 3c less.
Culls, per lb.5@6c

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.

Week Ending	San Francisco 1916	San Francisco 1915	Los Angeles 1916	Los Angeles 1915
Jan. 2	28.60	28.00	28.00	28.80
" 9	28.38	26.65	26.00	28.16
" 16	27.50	27.83	26.83	28.10
" 23	30.66	28.25	30.66	28.50
" 30	28.68	26.33	28.00	30.66
Feb. 6	26.88	30.25	26.80	32.33
" 13	26.74	31.40	27.00	33.25
" 20	29.00	32.00	27.16	32.00
" 27	29.10	30.90	27.00	35.25
March 6	27.00	24.08	25.25	24.16
" 13	24.66	29.91	24.00	28.83
" 20	23.00	28.38	22.50	27.16
" 27	22.91	28.50	23.00	28.08
Apr. 3	23.00	28.50	22.23	28.83
" 10	23.08	29.31	22.00	28.00
" 17	23.00	27.33	22.00	27.50
" 24	23.00	25.25	22.00	25.00
May 1	23.08	24.33	22.00	25.33
" 8	23.00	24.10	23.08	25.00
" 15	23.16	24.58	23.00	25.66
" 22	23.75	25.00	23.25	25.00

Special Citrus Market Report.

Los Angeles, Dec. 12.

Shipments of oranges from Southern California, from November 1 to December 7, were 1417 cars, and lemons 520 cars, against 664 cars of oranges and 469 cars lemons the same time last year. Shipments of oranges from Central California, from November 1 to December 6, were 1,852 cars and 93 cars of lemons, against 1,590 cars of oranges and 49 cars lemons the same time last year. Shipments of oranges from Northern California, from November 1 to December 6, were 543 cars, and lemons none, against the same time last year, 245 cars of oranges and no lemons.

The market continues to hold up fairly well. The early crop is going forward freer than a year ago and the trade is taking the supply at fairly good prices. The oranges from Central and Northern California are well colored and are testing up well. In Southern California it is rather early yet for choice fruit. Still some very nice oranges are being marketed from here, though they are not very sweet as yet. The new navels have the call over old Valentias and can be had

for less money. Locally both oranges and grapefruit moved very well, but oranges were lower under more liberal receipts. Local packers are paying 1½c per pound for new navels in the grove and 1½@2c per pound in the grove for grapefruit. Lemons continue dull and weak. Local packers paying 1½@2c per pound in the grove for the best of them, but poor stock has to be sold for what it will bring.

EASTERN AUCTION MARKETS.

New York, Dec. 11.—Twenty-three cars California navels, one car Arizona navels and three cars California lemons sold. Navels about 20@40c lower; Arizona 25c lower. Lemons unchanged. Weather cloudy. California navels averaged \$2.35@3.90. Arizona navels averaged \$2.35. Lemons averaged \$2.15@3.00.

Boston, Dec. 11.—Thirteen cars sold. Market weak on oranges and lemons. Navels averaged \$2.70@3.50. Lemons averaged \$2.50@3.00.

Philadelphia, Dec. 11.—Market higher on lemons. Averaged \$2.45@2.90.

"	29....23.08	26.50	23.00	26.50	"	11....28.00	30.20	26.00	32.00
June	5....23.90	25.50	23.00	27.00	"	18....27.00	30.41	26.00	31.09
"	12....24.08	25.83	23.83	27.00	"	25....26.50	30.41	26.00	30.50
"	19....25.16	24.50	26.00	25.91	Oct.	2....25.91	31.66	26.00	32.16
"	26....25.50	24.50	26.16	25.91	"	9....26.91	32.91	26.00	32.83
July	3....25.83	24.60	26.16	26.09	"	16....27.00	33.50	26.00	33.50
"	10....26.21	26.40	26.00	26.60	"	23....27.00	32.75	26.00	33.00
"	17....26.58	25.83	26.00	26.00	"	30....27.00	32.59	26.00	33.00
"	24....26.41	26.00	26.50	26.00	Nov.	6....26.55	32.66	26.00	33.00
"	31....27.00	26.00	26.00	25.91	"	13....26.11	32.80	26.33	33.00
August	7....27.00	26.16	26.00	26.00	"	20....29.59	35.25	28.60	35.66
"	14....27.00	26.50	26.00	26.00	"	27....28.90	36.69	28.80	37.59
"	21....27.50	26.50	26.00	27.95	Dec.	4....27.41	35.60	26.50	36.80
"	28....28.00	27.25	26.00	28.50	"	11....27.33	34.83	23.83	35.16
Sept.	4....28.00	30.00	26.00	30.50	"	18....43.08		36.00	

Special Livestock Market Report.

San Francisco, Dec. 13.

CATTLE are stronger in price but this is of little interest to growers as most everything is already contracted for by killers for delivery in Jan., Feb. and March.

HOGS continue to arrive in satisfactory volume and prices remain unchanged. Statistically it does not seem probable that any rise in price will be warranted as stocks of cut meats, Dec. 1 at the principal packing points were 29,662,000 pounds more than a month ago and 100 million pounds than a year ago. Lard stocks, however, have decreased and exports of all provisions have increased considerably. Announcement is made by the Western Meat Co. that they expect to take over the business of the Nevada Packing Co. Jan. 1 and that they expect to enlarge the pork packing business of that plant. No effect on California markets is expected from that source.

LAMBS are now being purchased on a pound basis. Otherwise there is very little doing other than previously noted.

WOOL is at an absolute standstill as a result of the peace talk which came early this week. It seems probable that a declaration of peace would have a tendency to strengthen, rather than lower present quotations but at this writing uncertainty prevails among the wool trade all over. Some scattering lots are reported to be still in the growers' hands but previous to the peace bulletins the trading in this market was largely between dealers.

Prize Fat Stock—At the Pacific International Livestock Show held at Portland last week the Western Meat Co. purchased fat stock as follows: Reserve G. C. steer, wght. 1520 pounds, \$14.50 cwt., 2nd prize Angus heifer, wght. 1470 lbs., \$10.50 cwt., 16 Herefords 2nd prize lot, av. wght. 1350 lbs., \$12 cwt., 16 1st prize Shorthorn lot av. wght. 1240 lbs., \$10.25 cwt., 16 1st prize St. yearling Herefords, av. 1050 lbs., \$9 cwt., 50 1st prize Durocs, av. 196 lbs., \$12 cwt., 40 3rd prize Poland Chinas, av. 176 lbs., \$10.60 cwt. This stock was purchased for the fancy holiday trade.

[Prices paid for stock, live weight off cars, without feed or water, at Stock Yards, South S. F. Hog prices subject to seller standing one-half of all hogs condemned by government inspectors.]

Steers, No. 1	.....7 1/2 @ 7 1/2 c
No. 2	.....6 3/4 @ 7 c
Cows and Heifers	.....5 1/2 @ 6 1/2 c
No. 2	.....5 3/4 @ 5 1/2 c
Bulls and Stags	.....4 1/2 @ 5 c
Calves, light	.....3 @ 8 1/2 c
Medium	.....7 @ 7 1/2 c
Heavy	.....6 1/2 @ 7 c

HOGS, grain fed:	
100 to 150 lbs.	.....8 1/2 c
150 to 300 lbs.	.....9 1/2 c
300 to 375 lbs.	.....9 c

SHEEP: Prime Wethers	.....7 1/2 c
Lambs	.....9 1/2 @ 10 1/2 c

WOOL: Red Bluff, year's	.....25 @ 27 c
Mountain, fall	.....16 @ 20 c
Sacramento Valley, year's	.....19 @ 25 c
Mendocino, year's	.....32 @ 33 c
Mendocino, fall	.....19 @ 21 c
Southern, year's	.....18 @ 21 c
Southern, 7 months'	.....13 @ 16 c
Southern, fall	.....11 @ 12 1/2 c
Imperial Valley, year's	.....17 @ 19 c
Imperial Valley, 7 mos	.....14 @ 15 c
Nevada	.....22 @ 24 c
Fall wool	.....10 @ 20 c

Los Angeles, Dec. 12.

CATTLE: There were more cattle in the past week and the tone of the market hardly so firm. California and Arizona furnished most of the supply and some very good grass and beet fed steers. Killers were all in the market and made very fair purchases, though refused to bid up prices in spite of the firmness in the Eastern markets.

Publisher's Department.

Here are two letters from subscribers which will serve as a peg upon which to hang the tail:

Mr. Gibbs of Tipton writes: "The reading is equally as good now as when the paper was glazed."

Mr. Tinker of McFarland writes: "Could hardly get along without the Press, and don't say another word about the paper it is printed on—it's good, a-plenty."

And now for the tail. When the high price of paper struck us early in the fall, we decided not to push so much for new and larger circulation, but to consolidate those we had. To that end we have been cutting down on exchange and complimentary copies and getting list into a paid-in-advance condition. At this time we have near-

Quotations f. o. b. Los Angeles:

Beef steers, price 1000 to 1100 lbs.	.....\$7.00 @ 7.75
Stockers and feeders	.....5.50 @ 6.00
Prime cows and heifers	.....6.25 @ 6.50
Good cows and heifers	.....6.00 @ 6.25

HOGS: There was a very good supply of hogs in the past week from California and a few shipments from Idaho. Most of the arrivals were of light weight and showed lack of finish and that they were being sent to market before their time to save high-priced feed. Killers were all in the market and made fair purchases at last week's prices, though the tone of the market was weak.

Per cwt. f. o. b. Los Angeles:

Heavy, averaging 250 @ 300 lbs.	.....9.25 @ 9.50
Mixed, 200 @ 250	.....9.25 @ 9.50
Light, 175 @ 200	.....9.25 @ 9.50

SHEEP: A good demand and a firm market was had for all arrivals the past week. Arizona, Utah and Idaho all had a few sheep and lambs in the past week and they met with ready sale at full quotations. Killers were all in the market and wanted supplies and more could have been sold if here. The high markets East favored holders and enabled them to demand full quotations for everything.

Per head f. o. b. Los Angeles:

Prime wethers	.....\$7.00 @ 7.25
Prime ewes	.....6.50 @ 6.75
Yearlings	.....6.50 @ 7.00
Lambs	.....6.50 @ 7.00

CALVES: A steady and firm market was had the past week under light offerings. Prices, however, not quotably higher. We quote at \$8.50 @ 9.50 per cwt.

North Portland, Ore., Dec. 11.

CATTLE: Today's run of cattle was the smallest Monday's run for many months, less than 600 head. The market was in general firm with a large demand from butchers who bought freely. Call from packers was light, prices on the best grades are steady to 25c higher, while the large end of the run, which was of common quality, sold steady with slow demand.

BEEF STEERS: The best loads of steers sold readily at steady to 25c higher. One load of prime steers brought \$7.55 from butchers with other loads at \$7.25. The quality of the beef steers was very poor, fair to good grades brought \$6.50 to 6.75.

COWS AND HEIFERS: The supply of good cows and heifers was very light, with a fairly good demand. Best cows sold at \$6.25 with a few at 6.00; with ordinary ones at \$5.00. Prime or best grades were a good 10c higher while the common grades found slower sale.

BULLS AND STAGS: There was a good supply of bulls this morning and prices were on the same basis as a week ago. Best offerings sold up to \$5.00 while Bologna bulls sold from \$3.25 to 4.25.

STOCKERS AND FEEDERS: A good time was made on all feeder stock today, prices being well in line with last week's close. Best valley feeder steers brought \$5.60 to 5.75; with fair to good ones around \$5.00. Stock cows and heifers brought from \$3.00 to 5.00; while choice feeding heifers and cows ranged from \$5.00 to 5.50.

HOGS: Today's run was a good deal lighter than a week ago, although it was a good-sized total of 4000 head. Prices were on about the same basis as last week, although some sales made in the later trading looked 5 to 10c higher. A number of loads brought \$9.70 to 9.75 with the bulk again selling at 9.60. Pigs and half-finished stock were here in large numbers, bringing \$3.00 to 8.50.

SHEEP: Supply of sheep continues very light, the only offerings coming are from small lots of valley sheep each day, but valley lambs made another 10c advance, bringing \$9.60. No east of the mountain sheep have been received to test the real strength of the market. Valley yearlings sold up to \$8.50 with good mutton ewes at 7.00.

ly accomplished what we set out to do, so that by the end of next week there will be no delinquents on our books who are a year in arrears. Every subscriber who has not paid since 1915 will be cut from the list, and we will be sorry to drop any who want the paper, but have for some reason not remitted. We have no alternative, however, under the federal regulations.

Every friend of the Rural Press could make us happy, and at the same time help one of their neighbors, if they would secure for us one new subscriber and send the name in before the first of the year. The cost of getting new subscribers, together with the high cost of paper, is taxing our finances pretty heavily and our readers can help us make a better paper by sending in new subscribers. The

money thus saved will be spent for better editorial service.

In less than ten days you will wake up on Christmas morning, and we wish you a very merry one, and want to suggest that you help some one else have a good time. One of our agricultural books would make an ideal present. Send us your orders at once and we will mail the book to reach you or your friend before Christmas day.

Classified Advertisements

MISCELLANEOUS.

REBUILT GAS ENGINES from 3 to 50 h.p. Thoroughly overhauled and guaranteed. We handle only high-grade engines. Write us your requirements. Motors. Gas Engines bought, sold and exchanged. Mechanical Installation Company, 181-89 Second St., San Francisco.

EVERY SIZE WROUGHT IRON WATER Pipe and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a Square Deal. Weissbaum Pipe Works 160 Eleventh St., San Francisco.

SECOND HAND WATER PIPE and Screw Casing. New threads and couplings dipped in hot asphaltum. All guaranteed. Send us your inquiry. Scheeter Pipe Works, 306-8 Howard St., San Francisco.

APPLES DIRECT FROM PRODUCER—Fancy grade, bulk pack. Per box: Newown Pippins, 85c; Missouri Pippins, \$1; No. 2 grade, 60c. Edward A. Hall, R. F. D. 1, Watsonville, Cal.

BUY ROASTED COFFEE WHOLESALE—Best, 10 pounds, \$3.00 delivered. Order with remittance. Wm. J. Schroth Co., 112-B Market St., San Francisco.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency. Savings and Loan Building, Stockton, California. Established fifty years.

TO REDUCE THE HIGH COST OF LIVING, send for our Wholesaler to Consumer Catalog. Smiths' Cash Store, 106 Clay St., San Francisco.

"HOW TO LIVE ON LESS"—a guide to cheaper living. Wholesale catalogue free. Pacific Co-operative, A236 Commercial St., S. F.

SEEDS, PLANTS AND TREES.

STRICTLY FANCY SEEDS—Alfalfa, Scarified Sweet Clover, Red Clover, Timothy, Rye Grass, etc. Free Bulletin—"Sweet Clover in the Northwest." Write for samples and prices. Ralph Waldo Elden, Central Point, Oregon.

OLIVES ARE OUR SPECIALTY—We offer fine thrifty home-grown trees of the best strains of Broad-Leaved Mission and Early Manzanillos. Propagated from cuttings; also budded. Every tree guaranteed. H. Detmers & Sons, Exeter, Cal.

CELERY SEED FOR SALE—Dwarf Golden Heart variety. Produced from seed purchased from C. C. Morse & Co. Strictly fresh and clean. Price, per pound, \$1.50. James Mills Orchards' Corporation, Hamilton, Cal.

FOR COVER CROP—Seed Horse Beans for sale at \$4 per 100 lbs., f. o. b. Oceano, San Luis Obispo county. Samples free. Send cash with order. Oceano Trading Co., Inc., Oceano Cal.

WALNUT TREES—Franquette, Mayette and Mammoth on Black Root; also Grafting Wood and Black Seedling Trees. Lowest prices Mammoth Walnut Nurseries, Watsonville, Cal.

OLIVE TREES, Mission and Manzanillo. I have several thousand olive trees propagated for my own planting. Have more than I need and will sell surplus at low price. Write for quotations at once before they are all gone. F. E. Carson, 948 So. Figueroa St., Los Angeles.

MISSION OLIVE TREES—Raised from my own bearing trees. This is the only sure way to get what one wants. W. A. Hayne, Box 461, Marysville.

ALFALFA SEED—Common 17c; smooth Peruvian, 22c; Hairy Peruvian, 30c; delivered. Wm. Stuthman, 1238 West Pico St., Los Angeles.

QUALITY TREES—Seedlings, 5c. Prunes, 10c. Walnuts, 30c. Cash Nurseries & Seed Store, Sebastopol Cal.

WANTED.

WANTED—Young men and women to attend the Western Normal Courses—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A," Western Normal, 524 B. Market St., Stockton, Cal.

COUNTRY LANDS.

HUMBOLDT STOCK RANCH of about 1600 acres. Good family orchard some tan bark and fir. 200 acres can be farmed. 4 miles from N. W. P. R. E. A good stock ranch that will stand investigating. In order to settle an estate and to compromise litigation, this property has been placed in my hands to sell at \$8.00 per acre. C. E. Robertson, 105 Montgomery Street, San Francisco, Cal., or Bridgeville, Humboldt County, Cal.

WANTED—Reliable party with \$1,000 to \$1,500 for development purposes. Money secured. Have 95 acres bean, beet, and rice land. Can reside on property if desired. Plenty of water. H. Beckwith, Bethany.

FOR SALE—In Fernley Valley, 80-acre dairy farm, well stocked and improved. Price, \$14,000. Address O. P. McGarr, Fernley, Nevada.

ASK JOSEPH CLARK, Sacramento, about your nine rights. Information—reverted State and Government land. Any county. Booklet free.

HUMBOLDT STOCK RANCHES—CATTLE—Cattle correspondence solicited. C. E. Robertson, 105 Montgomery St., San Francisco.

40 ACRES choice level land. Improved. No alkali. Bargain price Might trade. John Buck, Chowchilla.

MISSION OLIVES

EARLY RIPENERS.

THE EHMANN OLIVE CO.

Oroville, Cal., Nov. 17, 1916.

Mr. W. A. Hayne, Box 461, Marysville, Cal.

Dear Mr. Hayne: Answering your kind favor of the 15th, I am enclosing herewith photograph of some of this year's fruit on the Fogg grove, and you will note that they are above the average Mission. We also were able to harvest this entire crop before the frost, which shows that they are early ripeners.

We will be glad to keep in touch with you on this matter, and if we can be of any further service, don't hesitate to let us know. Yours very truly,

(Signed) E. W. EHMANN.

I propagated the Fogg orchard thirty years ago. The origin of the Fogg trees was directly from the old Mission at Santa Barbara. The trees I have now for sale are full brothers to the Fogg olive trees, and, like the Fogg trees, they are all propagated from the large size cuttings. W. A. HAYNE.

Box 461, Marysville, Cal.



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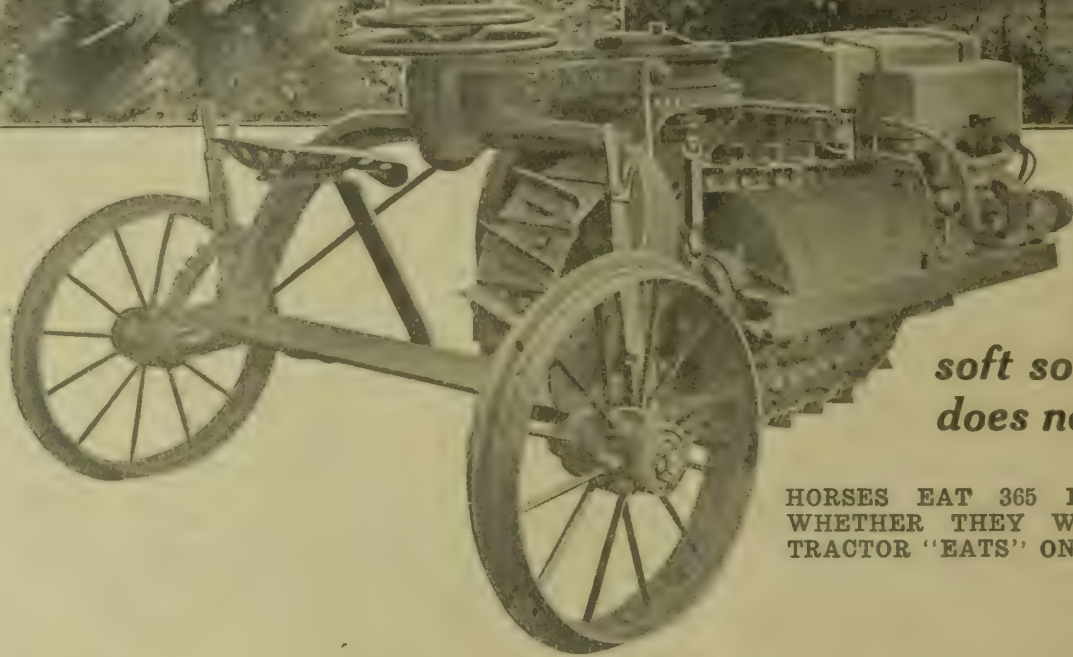
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No other tractor **now does or ever did**
what this one does, and no other tractor
with such advantages as these **ever before**
sold for such a low price, and you can

buy it on terms!

This tractor **pulls** itself over the ground
instead of pushing itself. When you hit
soft spots in plowing, it doesn't dig itself
in so you have to use horses to pull it
out. You simply **turn the whole front**
end to right or left as you would swing
and pull out just as you would with a
team. Hard to turn? Well, it's almost as
easy as **turning a team**. Fact is, this
tractor is more like a team than anything
that actually **isn't** a team that you **ever**
saw.

It is so strong that it easily pulls a big
six-horse load, yet so light it absolutely
doesn't pack the **loosest soil**. It pulls

almost as hard in loose ground as on
tough sod.

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Making a 10Foot Turn.

THE PACIFIC RURAL PRESS

SAN FRANCISCO

DECEMBER 23, 1916.

LOS ANGELES

Orchard, Cows, and Corn Combined.

Corn, Vetch, and Oats are Grown in the Orchard to Make Silage for Cows, Whose Manure is Put Back Onto the Orchard. The Cows Utilize a Small Bermuda-infested Corral.

[Written for Pacific Rural Press.]

A 25-ACRE walnut orchard interplanted with apples, and these interplanted with corn, for the silo, to feed the fine herd of Jerseys kept in a small corral, sets a fellow to thinking as he passes G. A. Brown's place in Los Angeles county. When you talk to Mr. Brown, you find that the orchard ground plowed up in great hard chunks when he came to the place three years ago, but it works up fine now. The first year, he put 158 manure-spreader loads of about 1½ tons of manure previously produced on the place, onto the 12 acres east of the house. It hadn't been manured before. That 12 acres has been covered with manure 10 times in the three years. The 8 acres west of the house and corrals has had more manure than that.

The trees are 5 or 6 years old, the walnuts 60 feet apart, the apples of several varieties interplanted both ways originally. Mr. Brown pulled out the rows one way across, to make room for intercrops.

The ground is subirrigated anyway, so that a number of trees have died from overwatering. The problem is whether to drain and save the trees or leave it moist for cow feed and make the orchard into a dairy farm. We would like to see it drained, and the mutual helpfulness of cows and orchard continued for cash from both.

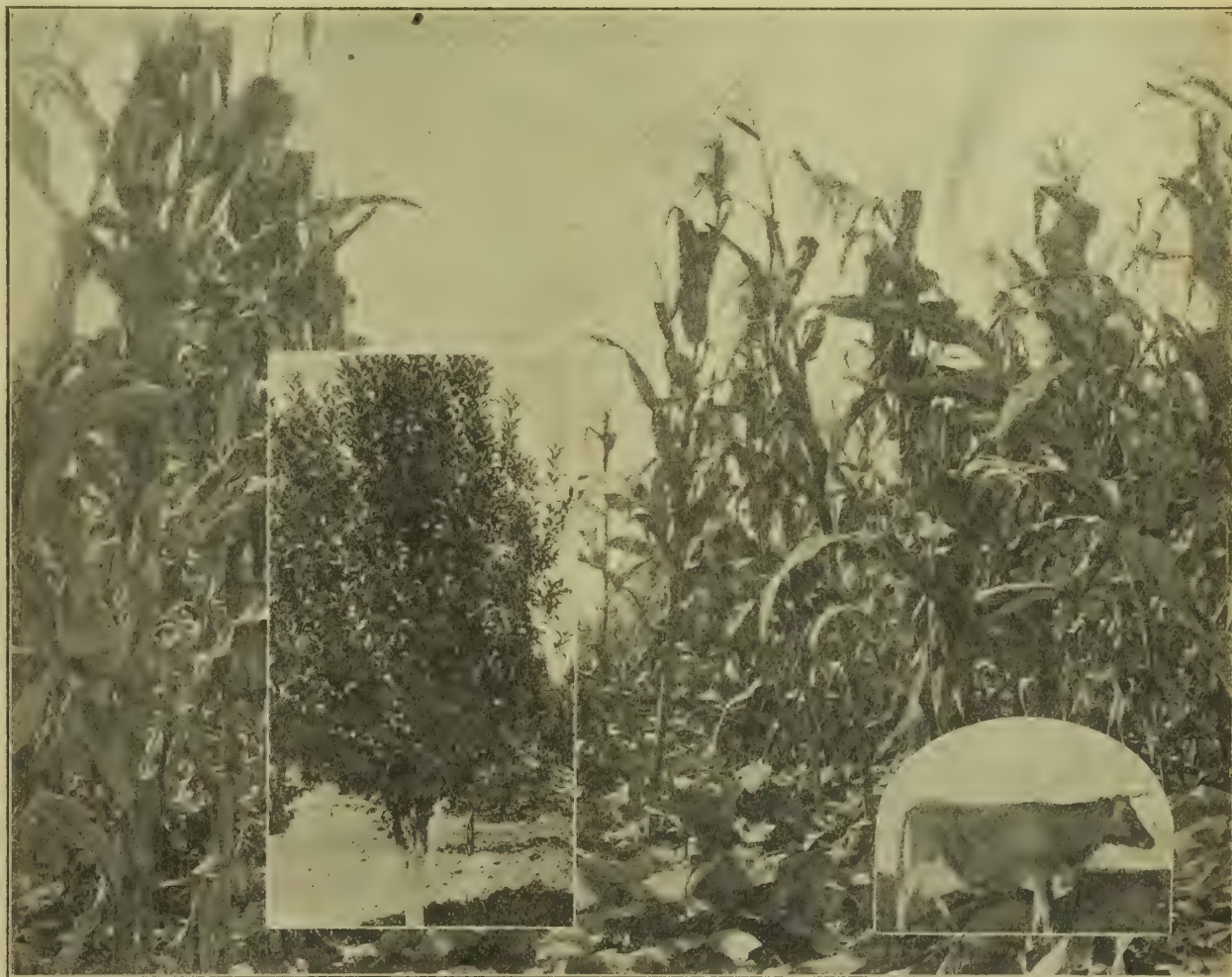
Alfalfa and Corn Intercrops.—There were some grade cows when Mr. Brown bought the place. To feed them he grew alfalfa between the trees for two years; but Bermuda grass and lack of drainage spoiled that. Vetch and oats were grown on the 12 acres last winter. This fall, the corn being harvested, the ground will be disked both ways and sowed to vetch and oats which will be siloed in the spring, so he won't have to buy so much feed next summer as he did since last April.

Last winter's crop on the 12 acres was cut in June, and the ground plowed a foot deep in centers, but shallower next to the trees, with a one-horse plow. It was crossplowed later, thoroughly worked down until neighbors thought he was "buggy," and planted to corn June 25 and 26. This corn, seen late in September, averaged easy 12 feet tall, fully tasseled and well eared out, with a splendid stand. About 13 rows were planted in each center, about 2½ feet apart, leaving a 5-foot clearance each side of the trees. The corn undoubtedly benefitted the

trees by absorbing much of the excess moisture. It was expected to yield 20 tons per acre of green corn, and the Bermuda was very scarce.

Less Cultivation—More Bermuda.—The 8-acre piece was plowed early last spring, was left 2½ months to dry out the Bermuda, then disked and plowed before planting the corn July 7 and 8. It was less mature in September, a much poorer stand, and the Bermuda was thriving as it was not on the 12 acres. A small two-acre piece beside the corral was plowed, disked and harrowed, springtoothed, and raked last spring and three tons of Bermuda grass hauled off, but it choked out the corn this year so that it will be included in the corral next year.

Silage is not new here. Corn was bought last year and the 14½x32 foot silo filled before Oct. 22, running a ½-inch stream of water in with the corn all the time, though it was not dry. Mr. Brown started feeding



Intercrops in the Orchard Add Income and do no Damage if Irrigated sufficiently When the Trees Need It, if the Intercrops are Fed to Livestock and the Manure Returned to the Orchard.

at once, so he "didn't lose two wheelbarrow loads." This silage was fed to 25 cows until April 22. From then till fall, not having had a winter silage crop last year, feed was bought in large quantities and stored handy in the big barn.

Feed.—Cows when seen in September were being fed all the alfalfa hay they would eat in the barn, and outside racks were filled once per day. They were at that time milking only ten of the cows, feeding them in the evening about 50 pounds of alfalfa meal mixed with about 25 pounds of beet pulp, soaked from noon till feeding time, as shown us by H. A. Sanders who was doing it. The heaviest milkers and those in whom

(Continued on page 717.)

PRINCIPAL ARTICLES IN THIS ISSUE---LOOK FOR THE OTHERS.

APRICOT VIGOR DUE TO PRUNING.

THE CALIFORNIA OLIVE OUTLOOK.

DECLINING LEMON TREES RENEWED.

HOW TO AVOID TRACTOR MOTOR TROUBLE.

DAIRY INDUSTRY EXCEEDS 40 MILLIONS.

COMMON SENSE VS. SCIENTIFIC PIG-FEEDING.

VETCH SUCCEEDS AFTER FAILURE.

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EDITORIALS

HOLIDAY ACTIVITIES.

IT IS the week before Christmas and 'holiday activities are reported beyond all precedent in volume and variety. All metropolitan stores which can be prospected for gifts are crowded to their doorways. The people seem to have plenty of money and are restless to get rid of it. But one cannot canvass the shops for measure of the movement: it must be sought at the transportation marts. The express companies are being rushed, and though their business is largely increased by innocent-looking parcels of gin to individuals in neighboring states which are measurably dry or coming so, they are doing higher-class gift-sending as never before. The local parcels post, however, gives most definite measure of holiday activity. Even now, a week before Christmas, the San Francisco postoffice is sending out over 40,000 parcels a day and expects to reach 125,000 a day by the end of the week. In parcel work alone there are 500 men at work. Doubtless at all other postoffices in the State, Santa Claus is proportionally busy.

Quite Like California.

All this is quite characteristic of California. Her disposition to rejoice and to celebrate is getting its place in literature. The most recent token of recognition in this line is found in the writings of Kathleen Norris in the American Magazine, who sketches a State portrait, which all will recognize, in these words:

California has a definite personality, a personality unmistakably courageous, hospitable, broad-minded and independent. She is unbound; she welcomes innovation; she holds an imported convention guilty until it is proved innocent. She rises to the horrible emergency of earthquake and fire only a little less buoyantly than she turns her energies to the creation of a record-breaking exposition. And when the fair was over, California was not tired, nor discouraged, not even in debt. She found that her fair was the first that had ever paid for itself, and so she had another celebration for that.

She celebrates everything, does California. And so tenacious is her loyalty, and so eventful her history, that scarcely a week passes without its anniversary and its jubilant commemoration. Ocean fogs pour over her from the blue Pacific, trade winds sweep up and down her coast cities, and she has a fair rainfall, but somehow her sons and daughters think of her as always sunshiny, always warm and serene and welcoming, a gracious figure of hospitality and of giving, between the great desert and the deep sea.

Of course Californians see more in California than others do: it is always that way with lovers and the objects of their adoration and "all the world loves a lover," for all that. And so we need not be abashed if we too are filled with the emotion which Kathleen Norris joys to feel and of which she fitly writes: "The very name, the very word 'California,' falls upon my ears with an exquisite appeal; it is like a strain of familiar and poignantly touching music." And so, whether we throng the marts and help keep 5000 men rushing parcels of Christmas joy into mail bags, or whether we withdraw alone to the verdure of California Christmas meadows, brightly starred with golden poppies, the emotion is the same. Next

to the transcendency of heaven's gift to all mankind which Christmas commemorates comes the assurance that the greatest earthly gift to the Californian is California.

SOMETHING ELECTRIC ABOUT IT.

ALTHOUGH there may be sharp and wide differences of opinion as to whether the world is going forward or backward by the free use of dynamite in Europe, there can be no doubt that America is progressing rapidly by the rival propulsive power of electricity. And there seems to be reason to believe also that California is moving more rapidly, in general development and in efficient working and satisfactory living, with this promotive agency than other States are. This reflects credit upon the enterprise and intelligence of the people and it is a fit appreciation of the natural adaptation of the State to the cheap generation of this new lighting, heating and working force. The old lamentation that the Creator had overlooked California in the distribution of coal, and thus handicapped her in industrial development, is now but evidence of the blindness of the elders who could not see the resources of petroleum products which seethed beneath their feet nor feel the incalculable power in the falling, rushing water in the mountains, which for nearly a thousand miles enclosed long, narrow valleys to facilitate the shooting of light, heat and power back and forth across them in short circuits of electrical transmission. In the newer life of California this force, of which the pioneers dreamed not, is giving the State unforeseen comforts in living and working and justifying us in claiming distinction for the amount and variety of its employment. Dr. Thomas Addison, Pacific Coast Manager for the General Electric Company, gives Californians unique positions as lightning conductors. He recently said:

The individual Californian, on the average, uses electricity more generally than the people of our other States. This is surprising when one considers that our State has barely 3,000,000 population, whereas in some of our Eastern States the principal cities alone have nearly an equal population. Our poorest people have electricity in their homes, a condition not to be found elsewhere. In New York city the poor use the old kerosene lamp, with now and then a gaslight in evidence, but never the electric.

And then, wholly apart from lights, the prevalence of electric appliances enforces California's prosperity and the lightening of woman's burden in the home. Dr. Addison estimates that about 40,000 such appliances are sold annually in this State and they range all the way from flat-irons to wash-tubs and cook-stoves. And then, taking a broader view, another authority says that a report of eighty-four manufacturers shows that over 9,000,000 such electrical household appliances have been manufactured and sold since this industry started in the United States.

But these figures, interesting as they are, do not include the great industrial work of electricity. In California we have relatively greater use of it than other States, in proportion to our manufacturing interests, while in farming uses we have as marked a lead as we have in household appliances.

A NOVELTY UNDER THE SUN.

IT IS seldom that a man lives long enough to see the whole of a thing. He usually gets only a wink at the middle, but it is some satisfaction to remember that one does not have to be very old to have seen at least the front end of this thing. In the latter '70s the electric light bulb was about as big as one joint of a peanut and a flashy youth would wear it as a scarf-pin—twinkling it on and off in wondering eyes. About a decade later electric light bulbs were hanging from trees or from street-spanning wires in many of our mountain towns, taking their juice from little generators grafted on to the flow of mining ditches, and about the same time the tall mast at San Jose lifted its crown of lights into low-flying clouds. A little later the wonderful long-distance transmission line was erected from Folsom to Sacramento, carrying light the incredible distance of twenty miles! Everybody expected the juice to get away before arrival! But the early electric lights in the

mountain villages always appealed to us as most surprising and beneficent. Larger towns had lights of some kind, but the hamlets had only the moon and the stars to lighten their inky darkness in which lurked many dangers. What a transformation the electric bulb worked in such places! We remember starting out from Marysville toward the foothills, groping along the south bank of the Yuba river in that density of darkness which precedes the dawn. Soon we saw a strange glow among the trees and later came into a wide circle of well-lighted dust in the highway. Lifting our eyes in inquiry we saw the glowing bulb above and then, seeking features of the environment, discerned the ancient legend "Yuba Dam," faintly on a board, in disintegrating paint, and we felt the curse as sharply as did the receiver of irreverent information on the same spot forty years before. It produced a strange sensation to remember the story and to see the marvellous light. As we plodded our eastward way the sun gilded the Sierra summits and when we came in daylight to the hamlets, with names famous in mining days, there were the electric lights above the streets still faintly glowing in the face of the sun. Asking a man, who was out to relieve an early-rising thirst, why they did not shut off the lights, we were told: "They just nachully let 'em run: it costs too much to keep turnin' on 'em off and on." And so there came first to the upland villages of California, where it is the chief business of water to run down hill, a fullness of light which, like the light of the sun, is too cheap to limit by switches: a light which is in real truth sunlight, for its creating agency is drawn by Old Helios from ocean depth to mountain crest and set free to seek again its birthplace. And then as it enters upon its downward flow, man takes from it energy and flashes light, heat and power onward, prophesying and preparing for undiminished service as its slower movement fills irrigation reservoirs and navigable streams. The pioneers glorified California for her vivifying streams threading fertile but thirsty valleys, and they did well. They did not know that from flowing water could be taken that which robs it of nothing, but which multiplies incalculably its service to the work and life of man, even hundreds of miles beyond the touch of it. And it is the front end of this marvellous achievement which has appeared to this generation.

CALIFORNIA TURKEYS.

ALTHOUGH the holiday celebrant has to pay rather high for his feast this year there will be some satisfaction in knowing that the money will go to California turkey growers and encourage them to greater exertions for a larger supply next year. It has been depressing in the past to find that so much of our money has gone for prairie production and the superior excellence of our own product has not been adequately recognized. Whether it was the high price of corn or the scarcity of grasshoppers or the flush times at the East which checked shipments to California this year, we will leave it for the inquisitive to figure out. The fact seems to be that no Eastern turkeys have been shipped to San Francisco this season, and none is scheduled to arrive. As a matter of fact, the East is short of turkeys this year. Texas, which is usually a large contributor to California turkey-eating, shipped all available birds for the Thanksgiving trade to the East, and since then has been shipping there for the Christmas holidays at higher prices than they could get in this market. And the Imperial Valley of California also did something eastward to the neglect

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., December 19, 1916.

STATIONS	Past Week	Rainfall Data		Temperature Data		
		Seasonal To Date	Normal To Date	Max'm	Min'm	Mid'm
Eureka	.08	7.76	14.00	52	34	43
Red Bluff	.00	6.99	8.24	68	32	50
Sacramento	.00	3.59	5.57	78	26	52
San Francisco	.00	5.69	6.23	82	42	62
San Jose	.09	3.30	4.73	84	28	56
Fresno	.00	2.21	2.84	75	40	57
Independence	.00	1.12	2.75	60	30	45
San Luis Obispo	.00	6.58	4.73	74	30	52
Los Angeles	.00	4.27	3.74	78	48	63
San Diego	.00	1.38	2.25	76	48	62

of Los Angeles. However, there will be plenty of turkeys in California at good prices for the grower of good turkeys—a point which should receive

more attention. San Francisco is expected to dispose of 250 tons of them during the holidays this year.

By
the Editor

QUERIES AND REPLIES

Inquirers Must
Give Full Name
and Address

Cotton Growing in Central California.

To the Editor: There has been no discussion, so far as can be learned, of the reasons why cotton should not be extensively grown in central and northern California. Soil and climate are both favorable as I have learned from several years' observation both here and in the heart of the cotton growing states. Much the greater part of the crop is produced in a colder climate than this. The nights are warmer there and the atmosphere more humid, but these differences are of no consequence as shown by the results in Imperial valley. Heavy land that would produce large crops of wheat was selected for cotton.—G. C. A., San Francisco.

You are quite correct in your conception that the natural conditions over great areas of our interior valleys are well suited to cotton growing. There are ample records of experience to justify that conclusion. Over 40 years ago a ship load of San Joaquin valley cotton was shipped from San Francisco to Liverpool. But suitability for growing cotton is not the secret of getting a profitable cotton crop. It is the gathering of the crop which determines that. What California has done during the last fifty years to meet that difficulty is a very interesting story which we may try to tell some day. The fact is that California has no cotton-picking population and the frantic efforts which some have made to install such a population are interesting to remember. Perhaps the Japanese could be taught to pick cotton, but the wages they have to be paid precludes such an experiment. The Imperial valley growers started in with the expectation that plenty of Mexicans and Indians would settle their picking problem, but they were only partly justified in this hope, for they have had to bring in many women cotton pickers from Texas, Oklahoma, etc., and they had to marry a lot of them to keep them. Labor supply, willing and able to pick at wages which the traffic will bear, is the key to profitable cotton growing.

Growing Castor Beans.

To the Editor:—What can you tell us relative to castor beans for oil purposes and the quantity of bean seed it takes per acre, etc?—L. C., Stockton.

Although the common ornamental castor bean plant, which grows almost like a tree, is not the species used for oil making, the oil species is quite a large plant and should not stand nearer than three feet apart in rows six feet apart. This would require about 12 pounds of seed. But this is not the important question—which is whether you should monkey with castor beans at all. A few castor beans were grown in Los Angeles county forty years ago, but the crop was abandoned as unprofitable in competition with imports from India. One trouble in California is that the clusters of beans ripen successively and require too much hand-labor in picking, drying and popping out. In the Mississippi valley they have a shorter season and ripen more evenly, but are now considered unprofitable and being abandoned. The high cost of living does not seem to help out castor oil. If, however, you wish to try the crop be sure you get the right kind of seed from an oil manufacturer and a contract for the crop also, for no other buyer on earth has any use for castor beans, which are poisonous. A case was reported the other day of a man who tried to reduce expenses by eating the beans instead of buying the stuff in a bottle, and they put him beyond the reach of castor oil very quickly.

From Alfalfa to Vines.

To the Editor: What is the best way to prepare an alfalfa field for grape planting during coming three months? Which way should I plant grapes: 8x12 or 10x12? The vines are to be irrigated.—Subscriber, Live Oak.

It would be rational to get a good grain crop with the alfalfa waste—disking after harvest to clean the land from any surviving alfalfa, or weeds,

and plant vines a year later. However, you wish to go faster. Plow at once as deeply as you can cover well over the green stuff; cross with a pretty straight disk and let the land lie rather loose for rain. Disk or weed-cut during January and February, when there is green stuff to kill and the soil works well. This ought to leave the land fairly clean and in shape for planting as early as you like. As for distances, you do not say what grape you wish to plant. The Thompson habit is pretty strong in your region, however, and probably that is what you have in mind. Growers do not agree on distances. We should say 8 by 12, but you had better talk the subject out with local growers whose experience you have reason to respect. J. A. Schlueter of Fresno county, whose experience with Thompson vines is given in detail on page 670 of last week's issue, and whose vines are 10 by 12, says he would prefer 8 by 12 to save space. A distance of 6 by 12 would increase danger from mildew.

Peach on Apricot and Plum.

To the Editor: Is it possible to graft the peach onto the apricot and plum? When is the best time to do it? What form of graft would be best for putting the peach scions onto limbs about one inch in diameter?—L. R. G., Oakland.

It is possible, but it is not desirable. In Europe the peach is often worked on the plum to meet heavy soil conditions. In California it was tried and abandoned decades ago because it interfered with such free growth of the peach as we desire and which is easy to obtain on the free soils which we choose for the peach, either with the peach or almond seedling roots. The peach makes a better growth on the apricot than on the plum and shows less over-growth of the stock, still we have few peaches on apricot, but many apricots on peach root, where Myrobalan is not necessary. On stock an inch in diameter we would use a side graft.

If you are asking for garden practice we would say go to your proposition and see what you get. If it is a commercial planting of trees now young, we should keep what we have or pull them out and plant new trees of the kind desired. Peach trees come along so fast in California it is usually a waste of time, money and loss of uniform, satisfactory growth to undertake grafting over young trees in place.

No More Pears for Him.

To the Editor: In your issue of December 2 you answer my questions about preparation for replanting fruit trees on land from which I had blown out unprofitable old pear trees. If I said I wished to re-set pears, I surely told you wrong and I am willing to take it all back, chew it all to pieces and swallow it. It is French prune trees that I wish to plant. I am surely sorry that I did not take out the pears a long time ago and then I would not have been putting such looking dried pears on the market as I have. Well, I hope this will find you in good spirits and looking ahead to the holidays. I wish you many good things and a Merry Christmas.—J. M. P., Healdsburg.

Thank you very much: the same to you. The hints we gave about preparation of land for replanting, applies to prunes and other fruits. Of course the failure of the pears should suggest close inquiry as to whether the land is suited to fruits or not. We have seen fair pears on land from which we would not expect much in the way of prune crops.

Sultana or Thompson?

To the Editor: Which would you suggest, Sultana or Thompson, to plant on white ash land and sub-irrigated? I hear that Sultana would be so late that they would stay to sour. The water level is about six feet.—J. G. N., Dinuba.

So far as we know there is not enough difference in the ripening of the two to render Sultana par-

ticularly liable to souring. In your district both grapes are bearing immensely under such conditions as you describe and even with higher ground water than six feet. You should, however, pay attention to the recommendation of the Raisin Association that the increasing Thompson acreage be carefully considered. It seems to us that there may be considerations on the marketing side more important than on the growing side and it might be desirable for you to make your choice on that basis, rather than on the questionable prophecy about the behavior of the vines.

What Killed the Peach Trees?

To the Editor: I have lost quite a number of Muir peach trees after coming into bearing and most of them have borne for four years. The soil is light sandy. I am also troubled with Black Knot; most of it is deep down in the roots. Certain localities around Hanford have alkali. Would it be a good thing for to put out vines where trees have died?—W. A., Hanford.

Trees often die on sandy soil if they strike down into alkali soil or water below. Sometimes they die on a deep sandy soil for lack of irrigation after fruiting. When you see a tree failing you ought to dig down at once and see if the soil is either dry or muddy below. This ought to be done immediately, for conditions may change after the injury is done and you cannot see the cause. It is probable that your trouble is alkali, and to determine that send to the College of Agriculture at Berkeley for a circular giving instructions about taking and sending samples for examination. Knots on the roots "deep down" may exist for a long time and the tree be thrifty and productive. It is when they are massed on large roots near the surface that they shut off growth, and must be removed as soon as discovered; and they should be frequently looked for. If the trouble is alkali there is little use of planting vines. If it results from drying out vines may do fairly well where peach trees would fail.

Sweet Clover Under Hardship.

To the Editor: I wish you would tell me through the paper will sweet clover withstand wet land black and heavy with not too much alkali. I have grown fair crops of small grain on it but of course the yield is hurt by water.—R. E. S., Bishop.

We have never seen sweet clover (*Melilotus alba*) under your conditions east of the Sierra, but Prof. Linfield of Montana, an excellent observer, says of it: "Extremes of heat and cold do not seem to affect the plant. It grows well in the far south and all the way northward including Montana, where it grows well in every part of the State. It can withstand very great extremes of wet or dry soils and it will grow on stronger alkali soil than any other farm crop." Such testimony warrants you in making a trial of it.

Pruning French Prunes.

To the Editor: How would you advise pruning three-year-old prune trees—that is, would you advise cutting back main branches, etc?—M. A. H., Sloughhouse.

If you have the French prune and the trees have made three seasons' growth and have been properly cut back to get good branching in previous years, we would not cut back main branches any longer. If you have too many branches remove some of them wholly from their starting points, also remove or cut back to a proper lateral those which are going in wrong directions for good shape in the tree. Do not clean off short laterals or spurs; they will give you your first fruit.

Redwood Shavings in Manure.

To the Editor: Will redwood shavings, used moderately for bedding in the stable, injure the land on which the manure is used? If so, how does it affect the land and how could the injury be overcome?—Subscriber, Mountain View.

Used as you propose, such shavings might make light land lighter and more likely to dry out. On heavy land the injury might be changed to a benefit. Practically the amount you would probably use would not make any difference either way, but shavings would not increase the volume of available manure as would the use of straw which more easily decays.

The California Olive Outlook.

Lack of markets has recently discouraged olive growers. Small, unripe, imperfectly processed fruit and lack of organized market development were the causes. These are being removed.

[Written for Pacific Rural Press.]

Is the olive business looking up?

Last spring and the fall before, we attended representative olive growers' meetings and found the growers in despair about selling their crops. This in spite of the fact that California grows less than 2 per cent of the olives of the world, and sells only one-fifth of the olives used in U. S. The rest of the world's consumption comes practically all from the Mediterranean countries. Ripe olives were retailing at about \$2,000 per ton in Chicago, whereas a third of that price would give plenty of profit to everybody and \$170 a ton to the grower, besides increasing consumption enormously.

Since then, three important moves have been made, which improve the outlook.

The California Associated Olive Growers Inc. has been organized with one of its directors appointed by the State Market Director to prevent misuse of power or funds. This co-operative movement is not rushing madly into the quicksands of the great problems of the industry; but is building good roads for itself as it moves forward. Its pack this season was small, but is all sold, having been put up as a foundation for future business.

An amalgamation of some of the largest canners has occurred, which will give a better, more powerful and widespread system of distribution, and can give greater chance for uniformity in grading to prevent the discouragements to consumption which are so often met by those who try to use our olives.

A standard of ripeness has been determined by a meeting of packers and representative growers in the State Market Director's office. Not everyone is adhering to this, but the chances are that those who do, and who advertise the fact among prospective consumers, will be able to sell to better advantage.

Ripe Olives.—We speak of the ripe olive alone, for two reasons. Green olives, used as a relish, must never have a limited market as they have in the past, for they have nothing but the taste to recommend them—and this is no recommendation, in many cases. Ripe olives properly cured, not only have a most satisfactory taste to most people, but they have the digestibility and food value also.

The following table, furnished by Prof. M. E. Jaffa of the University of California, shows the relative food and fuel value of ripe olives. Moderate-sized Mission olives were used for this comparison:

	%	Water	Protein	Fat	Carbohydrates	A. B.	Calories
FOOD							
Olives, ripe	69.60	2.00	21.00	4.00	3.10	958	
Olives, green	78.41	2.43	12.90	1.78	4.48	598	
Pickles	93.80	1.10	.40	4.00	.70	110	
Bread	35.30	9.20	1.30	53.10	1.10	1215	
Rice, raw	12.30	8.00	.30	79.00	.40	1630	
Rice, boiled	72.50	2.80	.10	24.40	.20	525	
Potato, edible portion							
Raw	78.30	2.20	.10	18.40	1.00	385	
Boiled	75.50	2.50	.10	20.90	1.00	440	

Large sized ones would show as much as $\frac{1}{2}$ more food value.

By chemical analysis, the fat or oil of the green olive is only 60 per cent that of the ripe olive, and pound for pound, the olives have $\frac{3}{4}$ the food or fuel value of bread. The chemical analysis does not tell all, however, for the nutriment in the ripe fruit is far more digestible than in the green fruit.

Here, then, we have a sound basis for a great food industry.

Why the Market Has Not Been Developed.—That it has not been better developed up to date has been due to several causes. A packer could not afford to develop consuming demand independently, for he would get only part of the benefit after paying all the cost. Until recently, the packers have been unable to get together at all; and yet there are only a few of them in at least two separate associations besides that of the growers. United financial support of a constructive program of market development has not been possible any more than in the case of dried fruit packers.

Small Sizes Due to Orchard Run Buying.—In the mad scramble among packers to buy fruit, for a few years previous to 1915, they were compelled to buy olives "or-

there are on the market many green olives of far lower food value and no particular flavor, which have been artificially colored and labeled "ripe." Missions have freestones when ripe. Have what you eat been clings or freestones?

Converging Toward Highway of Prosperity.—Confronting and knowing these conditions, the highway seems clear and practicable to permanent prosperity for olive growers. Those who would travel that highway are likely to (1) buy [or sell] olives at better prices for large sizes than for small ones; (2) insist on standards of ripeness and processing, packing, and labeling, that will encourage consumption; (3) combine to advertise the food value of the ripe olive and develop markets which will take a regular increasing supply. All interested in the olive industry are traveling roads which lead to this highway of prosperity, and the future seems bright.

Acreage and Varieties.—By the County Horticultural Commissioners' reports last spring, there were 15,842 acres of bearing olives in the State and 11,574 non-bearing. By estimates from the same sources, about 1600 acres were set last planting season, the number being smaller than usual on account of the depressed markets.

Of this total acreage, by far the most are Missions; and the new plantings of Missions have exceeded all other varieties, largely because packers have consistently demanded them. They are easiest to process

BELLFLOWER POLLENIZATION.

"Are Bellflowers self-sterile?" asks a correspondent of the University Farm as reported in the "Agricola," students' publication. "I have a very light crop on a 20-acre block of 8-year Bellflowers, except where the trees are near a Newtown orchard." Prof. W. L. Howard answers: "This variety, like many others, produces far more satisfactorily when there is some other variety nearby to supply cross pollenization. Since the Bellflower and Newtown bloom together, you can very well topwork every fourth row of the Bellflowers to Newtowns."

chard run." This encouraged the production of small olives and lots of them; for the prices were high. In the fall of 1915 the crash came, and packers were accused, more or less reasonably, of combining to reduce the prices. They refused to buy crops, and many of those under contract were notified that fulfillment of the contracts would bankrupt the packers, and therefore they would not be entirely fulfilled.

It was found that a million dollars' worth of the previous year's crop was still on the shelves in Eastern markets, half a million in hands of California packers, and half a million on the shelves of California retailers.

The significant point is that all the large olives had been sold and the holdover consisted of small sizes. These had been canned because the packers had to take them in the "orchard run."

Unripe Olives Labeled "Ripe."—It is notorious, also, that it didn't make much difference how green or ripe the olives were, when picked—all went in together and were cured unevenly, as well as having uneven flavor, texture and food value, due to uneven ripeness.

The figures above, Prof. Jaffa notes, represent the food value of ripe fruit. Unfortunately, however,

ripe, hang on the trees till picked, often recover from frost shriveling, and are not afflicted with dry rot. They contain an average of about 22 per cent of oil, and the flavor is delectable. The fruit grows medium large if trees are properly pruned and cared for and of the right strain. Three to six distinct strains of Missions have been observed in California, and it is well to know where the buds come from.

Manzanillo is easily the second, being oval in shape, two to six weeks earlier in ripening than the Mission and therefore usually out of the way of frost. It requires prompt, careful, early picking and processing, and in at least two localities is afflicted with a dry rot. Its appearance and flavor equal the Mission in the estimation of many when properly processed. Mission and Manzanillo in the same orchard provide a longer season of picking which is desirable from both the grower's and the packer's standpoints.

Ascolano and Sevillano are large-sized varieties, rather low in oil, hard to process by present methods, more suitable for a relish than as ripe processed olives. But quantities of them are being processed, and with better methods, these varieties may acquire wider popularity than they now enjoy.

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Declining Lemon Trees Renewed.

[By J. D. Culbertson, Santa Paula.]

In the spring of 1914, the performance of much of the Limoneira orchard was so unsatisfactory, with small sizes, ripens, and the other evidences of decadence, all calling for correction, that we undertook carefully to investigate the merits of heavy pruning as a last resort, and to determine in relation to it:—when it may be done with least sacrifice to present crop; when with least sacrifice to the following year's crop; what effect it might have on the percentage of ripens and small sizes; whether one can prune at such a season that the first succeeding crop will mature its fruit for the summer market, thereby compensating for loss in quantity by increased value; what type of cuts should be necessary and best suited to the purpose, as also how much cutting to do; what the expense would be, and how difficult the task of training men for it; what cautions to observe in an orchard-wide policy of heavy pruning, should it seem advisable later.

In brief, our method was to reduce the mean radius of the tree very little, but to remove all cross limbs, superfluous leaders and out-hanging corners, and relieve top-heavy boughs by heavy concealed cuts, avoiding as much as possible "heading" and the leaving of "holes" in the sides of the tree. The result was a sacrifice of perhaps sixty per cent of the foliage and thirty to forty per cent of the fruit spurs—wood less than one-half inch in diameter. For the experiment we selected the block of Lisbon orchard most in need of rejuvenation. All rows were picked just before pruning. Row 1 was reserved as a check to be given our customary prunings; Row 2 was pruned in May; Row 3 in June; Row 4, a check; then July and August and another check, and so on, one row for each month for twelve successive months, with eight check rows so arranged that each pruned row had a check on one side of it. Records of production were kept beginning January 1, 1914, showing monthly yields from each of the twenty rows included in the experiment.

As to the season when heavy pruning may be done with the least sacrifice in quantity of fruit, it is fairly evident that it should be undertaken as soon as possible after seventy to eighty per cent of the crop has been harvested. In our section this would enable us to begin late in May or early June, extending through July, and possibly August. It appears that the heaviest sacrifice results from winter and early spring pruning during the six months November to April, a season when the trees are laden with a full crop all but ready to gather.

Sacrifice to Get Summer Fruit.—While the data as to seasonal yields following heavy pruning are too incomplete for analysis, yet there are strong indications that the heavy sacrifice of yield resulting from winter and early spring pruning may be quite largely offset by a goodly production of high quality summer fruit. A comparison of the ripens reveals the fact that during the second crop year fruit from the unpruned check rows graded 30.5 per

cent ripe, as against only 16.6 per cent from the first four pruned rows, a ratio of practically two to one.

Where heavy pruning is undertaken we learned that whitewash should be used freely and promptly to prevent serious sunburn of large limbs and trunk. This is very important. Paint with asphaltum all large cuts, fumigate cautiously when the new growth has just begun, and spray with similar care.

Aside from the temporary sacrifice of fruit involved, the expense of making such a pruning is considerable. A good man will hardly prune more than eight or ten trees per day, the cost of hauling out the brush, or cutting it, amounts to several cents per tree, while the cost of painting the large cuts and whitewashing, adds at least another five cents.

Trees pruned later than July or early August are apt to put out a short growth that does not have time fully to mature before cold weather comes. As a consequence, it yellows up considerably during the winter months, but with the awakening of spring, it soon regains a normal color, or disappears beneath the out-pushing free growth of early summer.

Attempting tree renewal by heavy pruning, a small experiment should always be undertaken first, and in every locality at an early date; and the grower should be as sure as he can that the trees do not need food, better or less cultivation, pest control, less water or more. It is doubtful if even the heaviest production will bring a tree to the point of decline before the age of sixteen or eighteen years if it has been well treated and fed.

PRUNING HUNGARIAN PLUMS.

To the Editor: I have 150 Hungarian plum trees four years old next spring, planted among olives, so I want all the fruit as soon as possible. The first two years they were cut well back. Last year they were only thinned and had just a scattering of fruit. Would it be best to cut back one-third to one-half of the two years' growth, getting rid of some of the fruit spurs, or only thin them again this year?—R. L. L., Lindsay.

We have a photograph of some Hungarians belonging to Ed Ames in Placer county which had not been pruned for 12 years after they were as old as yours, except for a little thinning of the brush. They were lolling around a good bit like weeping willows, having been bent to that shape by the weight of fruit year after year. Mr. Ames had taken 680 crates from 197 trees the summer previous, and over 1100 the year before that. If you prune this winter you will get wood growth at the expense of fruit. But if the fruit sets too thick it should be thinned either by cutting out fruit spurs now or picking young fruit later.

Farmers along the Cosumnes river in the northwestern part of San Joaquin county have cut as high as 120 bushels of corn to the acre. These farmers are being paid \$2.30 per cental, or 55 cents above the Kansas City market by the Sperry people, the principal buyers of corn in that market.

TALKS ON Nitrogenous Fertilization

Number 4

WHAT is this SULPHATE OF AMMONIA that is so beneficial as a nitrogen fertilizer? Where does it come from, and how? It is a fair question and shall have a fair answer.

Bituminous coal contains about 1 per cent. of nitrogen. When it is made into coke, extensively used in smelting iron ore into pig iron, a part of the nitrogen in the coal is set free. If the coking is done in the by-product oven or coal-gas retort, the nitrogen can be recovered from the gas by passing it through weak sulphuric acid. The

SULPHATE OF AMMONIA

crystallizes out as a greyish-white salt, containing 25 per cent. of Ammonia, and has only to be drained, dried and bagged for shipment.

Coke is the one best fuel for smelting iron—in fact, it is a necessity—but so far two-thirds of this country's coke consumption is made in the old style non-recovery beehive oven, so the ammonia and other by-products are lost.

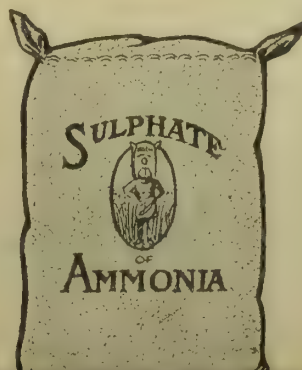
Conditions are changing for the better now and many new by-product plants are building, so a constantly increasing supply of Sulphate of Ammonia is assured.

By this modern alchemy the nitrogen stored up by the wonderful vegetation of the Carboniferous Age returns again to the cycle of life and growth, and furnishes sustenance for the human race.

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Watching Buds in Peach Pruning.

[Written for Pacific Rural Press.]

Some varieties of peaches bear fruit buds far out on the past year's growth—others bear them near the older wood. In any variety, they are likely to be located nearer the base of the branch if they have not been shaded by too much brush, which should have been thinned out in pruning. If the cutting-back system is practiced, there is a good chance of pruning off all the fruit, if a certain proportion or only a certain length is left as many mechanical pruners are likely to do.

This should be considered in connection with the vigor of the growth. Cutting the most vigorous twigs the least; and with those varieties which have wood buds near the older wood, cut them back still less.

F. P. Gage of Sacramento county, who averaged 11 tons per acre for three years previous to last year on 11 acres of 9-year Phillips, heads back all new growth, leaving the fat twigs 10 or 12 inches long depending on the number of fruit buds such heading would leave.

"Pruning is the life of a peach tree," says he. "If you don't cut back a peach tree after it is 7 or 8 years old, it will die back" in his neighborhood. Possibly judicious thinning would work the same effect.

The man who does J. McKindley's pruning in San Joaquin county emphasizes long pruning on Lovells and Elbertas, but short on Muirs, whose fruit buds are close to the crotch. C. W. Van Gelder of the same county lost two crops of Lovells by heading back too far. Now he lets them grow long and thins out without cutting back.

M. Rusznak of San Bernardino

county, who sold to the canners 9 tons of Tuscan from five acres of dry-farmed 8-year trees, clips every branch, leaving two or three good buds on the slender twigs and three or four on the stronger ones. He clips even the spur twigs, hoping each season to finally have only one peach per spur. He finds his best fruit of both Tuscan and Phillips (of which also he has five acres) on these spurs. This clipping of all new growth reduces the fruit set, helps make it larger, and places it down on the strongest wood where it will exert least leverage. He likes to leave an eye above the top fruit bud to prevent the twig drying back through the fruit bud, if the season should prove too dry.

Spring Pruning.—For three reasons, peach pruning is often left until about the time buds are swelling. The strong buds will show themselves at that time. Most of the blighted buds and twigs will show up and may be pruned out. The soft peach wood can heal soon instead of drying out and dying back as there is a chance to do if pruned earlier. Mr. Rusznak points out the care needed in late pruning, not to knock off or loosen the buds that are to remain.

Fruit Buds.—On the peach, all fruit buds are borne on one-year wood. Naturally, there are two at each "eye" with a leaf bud between. Often one of these fails to develop or is knocked off.

It is not hard to distinguish them, though it takes a little longer to prune with regard to them than to shear off all but a uniform length of growth, but it pays well to observe this distinction.

Fast Orange Packing.

[Written for Pacific Rural Press.]

Anyone can amuse himself half an hour watching the oftentimes frantic efforts of orange packers to do fast work. Usually it is the men, who pack fastest; perhaps because they study to eliminate false motions. Instead of violently shaking every muscle in them, they work smoothly, with a swiftness which cannot be followed by the eye.

One of these, B. E. Gelker, was recently observed working at the Highland Exchange Ass'n packing house. The only motion of his body was a diagonal bend as he picked each fruit out of the bin.

When asked how many boxes he was packing per hour, he explained that he could pack only seven per hour of 288's, because the house requires more careful work than many do. However, each box of 288's or smaller counted as two on the pay check, which is rather unusual. He figured on 15 boxes per hour of 126's and 100's. Of these larger oranges, therefore, he would pick out, wrap, and pack some 1600 or 1700 per hour, or about 25 per minute.

While reaching for an orange with his right hand he would place the previously wrapped fruit into the box with his left and reach for another wrapper.

Never would an orange be placed in a wrapper. With the paper in

left hand coming flatwise toward the right, the orange would be hurled by the latter about a foot, into the wrapper. The impact would almost envelop the orange, leaving the corners of the paper ready to twist together. If it were placed against the paper, a few extra motions would be required to get the corners twisted.

While the right hand was catching up to the orange it had hurled, it would be turned nearly palm down with thumb toward the operator. At the same time the left hand would be turned nearly palm up with thumb away from the operator and the fingers closed around the orange.

When both hands closed over the fruit, they were in position to turn the thumbs with a quick twist toward each other, bringing the corners of the paper into a tight twist. Then the whole operation would be repeated.

With small oranges, two or three would be picked up at once, but always the right hand would be drawn back each time for enough to throw the orange hard into the left.

At 4½ cents per box (½ cent more than usual to compensate for extra care) Mr. Gelker was making well over 60 cents per hour.

A movement has been started looking towards the organization of a "Farm Bureau" in Sonoma county.

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Apricot Vigor Due to Pruning.

Apricot habits of setting fruit wood require intelligent pruning to induce enough new wood each year to provide vigorous fruiting buds. Thin out weak branches and leave fruit laterals on the tree.

[Written for Pacific Rural Press.]

Hundreds of tons of "Moorparks" have been sold from the Royal and Blenheim apricots grown by C. O. Silliman, a pioneer and the largest apricot grower of Pajaro Valley. A "Moorpark" commercially, is the grade larger than "extra fancy"; though the Moorpark variety really has a distinct flavor as well as size.

Mr. Silliman attributes his big fruit to vigor of the trees and to proper thinning. There is no irrigation. The soil is a shaley, gravelly loam not over three feet deep, underlaid by yellow shot-clay interspersed with fine and coarse gravel.

Vigor of the trees is due not only to cultivation and fertilization; for many decadent orchards get much of that, but equally to pruning.

In pruning, he is guided by the growth of the tree. He likes a bearing tree to put on a foot or two of new growth each year. To induce this, he prunes at least annually, for an apricot tends to "bear itself to death." It makes fruit buds and spurs at the expense of new wood. These buds become weaker as the tree grows older, and may bloom; but many will not mature fruit. So, new wood to bear vigorous fruit buds is sought yearly. "I prune light for fruit and heavy for wood," says he.

Where new growth has been only one to six inches the past season, it is cut out entirely or cut back into old wood or not but back at all. Cutting back only into the new growth would reduce the already too little new wood available for fruit buds.

But on that limb will be many branches which have been growing so little that there is room for only one or two fruits on the new wood; and they would likely be weak. Thin out all of these and enough more of the weakest ones to throw sap into the stronger growth remaining, and make it still more vigorous.

Three Growths per Season.—On a young, vigorous tree which has grown several feet in the past season, there seem to be three distinct growths, according to Mr. Silliman. The first will be a bare twig perhaps 16 to 18 inches long. It checks up then. When the second growth starts, a lot of laterals put out from the upper part of the first growth. By the time the second growth is a foot long, these laterals may be of equal length, and they may grow six or eight inches more by the end of the season. Fruit buds develop on these first laterals late in the fall to bear next year. During a third growth of several inches, fruit laterals will also develop from the upper end of the second growth, leaving its lower part bare.

Many people cut back to one of these fruit laterals in pruning. They then have a fruit branch at the end of the limb, which cannot develop the required new wood but will bear fruit; and that branch will soon have blocked the limb's chance to grow.

Mr. Silliman does not want those fruit laterals to block the wood

growth. He cuts to a wood bud above the laterals on the first growth and thus gets both fruit and wood. If fruit is wanted lower on that branch, it is cut off below the laterals so it may next season send out fruit laterals lower down. Often a whole branch is cut off because it has not fruit enough low down.

Watersprouts inside the tree are great opportunities to get the finest quality of fruit. Such a sprout is cut back a few inches, and is likely to put out a leader but not many. It will make lots of fruit buds and

bear fruit which is smoother and better because better protected by foliage from the fogs and bright sun of this coast valley.

WINDBREAKS FOR PEARS.

"Wind is one of the worst things fruit growers contend with here," said E. H. Goepfert of Vaca Valley recently. He wanted to raise some pears. So he planted Wilders and Bartlett's with figs between, hoping that the figs would shelter the pears.

Eucalyptus trees make good windbreaks within two or three years, and if subsoiled as described in a recent issue, would not injure the pear trees at all. There might be some objection to eucalyptus for fruits which require bright color, on account of the shade which tall trees cast early in the afternoon.

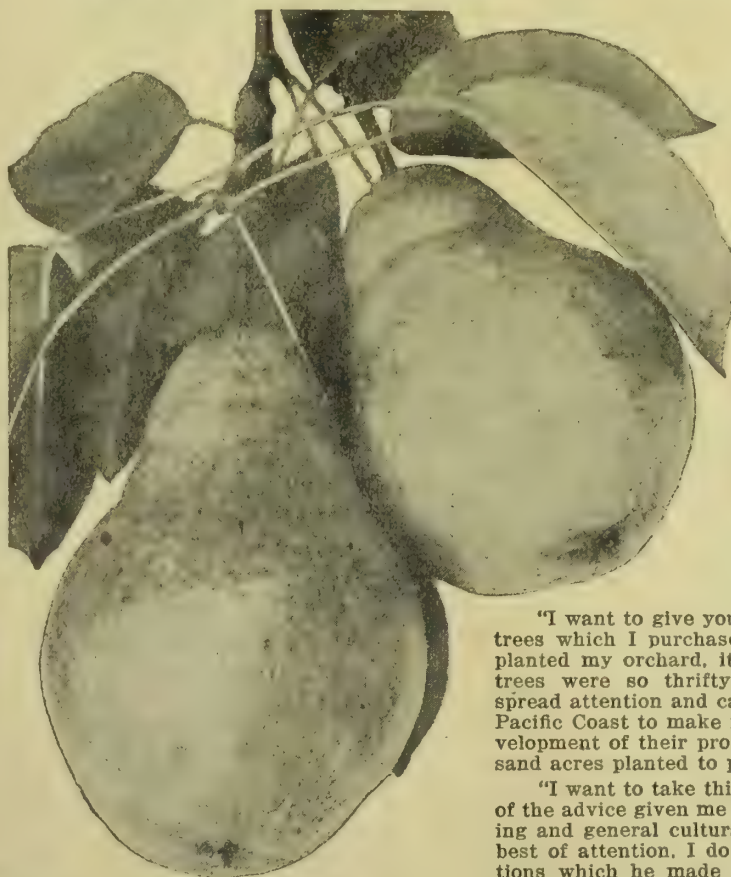
FRUIT TREES REGISTERED.

[Written for Pacific Rural Press.]

New Zealand takes its orchard acreage to assist in developing the industry. Everyone owning one fruit tree or more must register and permit inspection and destruction of such as may be too badly diseased. There is no charge for registration and no tax for less than 1 acre. Registration was to be complete before Oct. 26, 1916. This enables the government to control diseases, and furnishes accurate statistics of acreage.

The Northern California Olive Corporation, according to F. Dunning Fowler, principal stockholder, will open up a retail store for its products in New York City, and sell directly to the consumer.

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"I want to give you a few particulars concerning the Bartlett pear trees which I purchased from you. Within two years after I had planted my orchard, it had made such a remarkable growth and the trees were so thrifty and free from disease that it attracted widespread attention and caused prominent fruit growers from all over the Pacific Coast to make investments and immediately commence the development of their properties so at this time there are over two thousand acres planted to pears and apples.

"I want to take this opportunity to express to you my appreciation of the advice given me by your Mr. George C. Roeding concerning pruning and general cultural directions. Although I gave the orchard the best of attention, I do not hesitate to say that the actual demonstrations which he made in pruning had much to do with the uniform, shapely appearance which the trees present today. My orchard is located on an elevated plain 4000 feet above sea level where the climatic conditions are extremely favorable, causing the pears to ripen very late in the fall so that they keep in perfect condition for the holiday trade. Experts have pronounced these pears perfect in appearance and exceeding in quality anything which they have ever received from any other section of the country. I have planted several orchards since and I obtained these trees from you. These younger orchards are doing just as well as the first one I planted. I have simply had splendid success with your trees.

(Signed)

"B. M. DENISON, Tehachapi, Cal."

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We have just received from the printer our 1917 Catalogue, which is the most complete one we have ever issued. It is attractively illustrated; lists and prices over 2000 varieties of fruit and ornamental trees, vines, shrubs and plants. If you haven't already sent for a copy, it will pay you to send us your name and address now. A post-card will do.

Let Us Help You Decide What to Plant

Tell us what you propose to set out, or let us know the nature of your soil and we will gladly advise you as to what is best adapted to it.

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Plow and Scraper to Prevent Soil Loss.

"The loss of soil by rains is one of the most serious problems of farmers in this section today. Every rain carries away much of the more fertile surface soil from rolling and hilly land, and if we do not want our farms permanently ruined, we must find a means of stopping this process. In Carroll county we recently installed a system of Mangum terraces at a cost of only \$14 a mile which have been in operation for only a short time, but have already proved that they will be effective," says R. L. Furry of Missouri.

"The plan is based on the fact that anything which makes the water flow more slowly, reduces its power to cut and carry soil from the field, and prevents both the gully, which we all notice, and the sheet washing, which most of us overlook.

"Terracing is not needed on land that has a fall of less than four feet in every hundred and will do no good if the fall is more than fifteen feet in the hundred, but no system can save cultivated soil on such steep land. On land with a slope of four to fifteen feet in every hundred, terraces should be constructed—one for every three to six feet fall. They consist of low, broad ridges about eight or ten feet wide running almost square across the slope of the hill, but allowing a slope of six inches in every hundred feet of ter-

race. The lines should never be run 'by the eye.' A surveyor can do it best, but a farm level in the hands of a man who knows how to use it will do very well.

"The terraces are made by back-furrowing along a line selected until about six furrows have been thrown up on each side. A road grader or drag is then run along the upper and lower sides two or three times, throwing the soil up from below and down from above so that there is a broad shallow ditch above to carry the water away at a low grade that will prevent washing. The terrace is about sixteen feet wide the first year and may be widened to twenty feet the second year by plowing two more rounds and dragging the dirt in with a scraper or drag as before. This makes a terrace so low and broad that it is easy to cultivate over it with any farm tools.

"Gullies across which terraces are to be constructed must be filled and watched closely, especially at first as they are likely to break the terrace and defeat its purpose. If the field is near a road, these terrace ditches should empty into the road ditch, otherwise they may empty into the main ditch in the field or any other convenient place. They should not be more than 1500 feet long or they may break during a heavy rain."

San Joaquin Valley Rice.

To the Editor: In your issue of December 9th I note the following item:

San Joaquin lands have been found unprofitable for rice, according to reports from sections where experimental fields were planted this year.

Which is not true so far as this section of the San Joaquin Valley is concerned. Last March this company leveled and checked 140 acres of land of which 132 acres were actually seeded to the Waterbune variety. From this acreage, 3,522 barley sacks of rice was produced, averaging 100.3 pounds per sack, or 26.7 sacks per acre, which amounts to 2678 pounds per acre. Some of the checks yielded about 42 sacks per acre, and others only about 10, but the average for the entire tract was as stated above.

The crop suffered severely from the depredations of blackbirds; and the rains the latter part of September delayed the harvest fully three weeks, which resulted in a heavy loss from shattering. I believe I am safe in saying that the crop suffered a loss of 15 to 20 per cent from these two causes.

This was our first attempt at rice raising, and was in the nature of an experiment, and without any previous experience in rice culture. With the knowledge gained from our first attempt I am satisfied that our next season's crop will largely exceed this.

J. J. Granville.

San Joaquin.

BUSHEL OF EAR AND SHELLED CORN IN BIN.

To the Editor: How many bushels of Indian corn on the ear, and shelled, in a bin 8 feet 10 inches by 7 feet 6 inches by 4 feet 6 inches?—C. W., Sycamore.

There are 2150 cubic inches in a legal U. S. bushel. Since shelled corn is usually measured in rounded bushels, figure about 2300 cu. inches. For ear corn, Woll's "Handbook for Farmers and Dairywomen" figures 2748 cubic inches in a heaped bushel. Divide the number of cubic inches in the bin by the number of cubic inches in a bushel to get the number of bushels. A bushel of ear corn by volume is figured as making $\frac{2}{3}$ of a bushel of shelled corn. This varies with depth of kernels and size of cobs.

BUG-IMMUNE PUMPKINS.

To the Editor: Occasionally I notice in the Pacific Rural Press a question asking what to do for squash bugs that destroy pumpkin vines. We think we have found a solution of the problem. The first two years we lived here we planted field pumpkins. They were beauties, weighing between 70 and 80 lbs. The third year the bugs took the whole crop except a few cushaws in the garden. Although bugs were here by the hundred they did not trouble them, so we just put in cushaws the next year and every year since. The bugs are still with us, but never trouble the cushaws. The largest, firmest cushaws make the best pies I ever ate, and are just as good for baking. We use them for stock too.

Glenn.

Mrs. S. C. Davis.

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Vetch Succeeds After Failure First Year

[Written for Pacific Rural Press.]

Vetch planted the first fall on 15 acres of R. F. Fisher's Humboldt county hillsides at the rate of 50 pounds vetch per 125 pounds oats, was a failure; though the entire field of 20 acres had been manured. The crop was a ton per acre of oat hay. The next fall the whole 20 acres was planted at the same rate, and 15 acres produced three tons per acre of vetch-and-oat hay, while the five acres not in vetch the previous year was a failure. Mr. Fisher also says that he has succeeded with vetch on unmanured land the second year after having failed the first year on the same piece, not having used artificial inoculation.

Prof. B. C. Lipman of the College of Agriculture says, "In such soils as those of Humboldt county, it is very common for the legume bacteria to be either very scarce or non-existent. For that reason the first planting of a vetch crop without adequate inoculation would mean either partial or entire failure. But the seed of the vetch always introduces a great many legume bacteria; and for that reason a second planting may frequently give fair or good success. You see, therefore, that the matter is simply one of inoculation, and the second year's results would naturally be good, whereas the first year's results might fail."

Rural Sanitation.

To the Editor: Farmers are very careful to save the manure from horses, cows, hogs, sheep and poultry so that it can be returned to the land, but the sewage from the house is generally allowed to run into a cesspool that frequently contaminates the water supply in the well causing sickness and death in the family.

If a cement manure pit was built to receive the solid and liquid manure from the stables, it would be an easy matter to run a drain or sewage pipe from the house to discharge into a separate compartment so that it could be pumped over the manure to prevent firefanging; and the manure would be more valuable for the addition. For many years

we have used the dry earth system instead of the water closet system. The dry earth, if a sufficient quantity is used, deodorizes the deposits and if emptied periodically and thoroughly worked over with a shovel it is absolutely devoid of smell and in appearance looks like so much dry soil.

We have grown beets for stock of an enormous size by giving them a good top dressing of the "poudrette" as it is termed.

As long as the cities waste their sewage the farmers will have to purchase artificial manures. The Chinese and Japanese are wiser than we in this matter, consequently for thousands of years they have kept soil fertility.—S. H., San Jose.

Peruvian Alfalfa.

To the Editor: Kindly advise me as to the relative merits of common alfalfa, smooth Peruvian, and hairy Peruvian alfalfa for planting on good sandy loam in the Chino district, plenty of water.—W. W. C., Ontario.

Safe enough in your soil and district where you have good drainage. We print comments on hairy Peruvian by W. E. Bryan, Plant Breeder at the University of Arizona. He has tried it most extensively:

"Hairy Peruvian alfalfa is somewhat more likely to be winter-killed where frost is rather heavy because of the fact that this variety grows at a lower temperature than the common varieties. Its hairiness does not interfere in the least with its feeding value. We have no data which compares this variety with the so-called smooth Peruvian alfalfa. The lowest temperature at which the hairy Peruvian alfalfa will grow is about 49 deg. F., while the lowest temperature that the ordinary varieties will grow is about 58 deg. F.

"This Peruvian alfalfa will produce 1 to 2 cuttings per year more than the ordinary varieties owing to the fact that it grows at a lower temperature and will grow during the winter months. This results in an annual yield about 15 to 20 per cent greater than other alfalfa.

"It makes vigorous growth and recovers quickly after it has been cut. It is cut while still somewhat succulent, it makes as good forage as any other variety. It has, however, the disadvantage of being somewhat woody when allowed to

grow too long.

"As an all-round alfalfa for the Southwest, where thorough irrigation is possible, and where the winters are mild, it will perhaps prove as good as any other variety that can be secured."

THIS YEAR'S CALIFORNIA BEAN CROP.

To the Editor: How does this year's crop of beans in California compare with the average?—E. M. A., Exeter.

From one of the best authorities, we have the following estimate of this year's crop: Pinks 650,000 sacks; limas 1,800,000; small whites 550,000; large whites 150,000; cranberry 150,000; black-eye 150,000; bayou 100,000; red Mexican and kidney 50,000.

The blackeye crop last year was estimated at more than double the above; limas about the same. In 1914 the lima crop of 1,500,000 sacks was the biggest ever; small whites slightly more; large whites about the same, bayous smaller, pinks the same; and the rest double. The total of the estimate of this year's crop is 3,600,000; 1915, 3,868,000; 1914, 2,905,000; 1913, 1,165,000; 1912, 2,013,000; 1911, 2,825,000; 1910, 1,950,000; 1909, 2,340,000 sacks of 80 pounds each.

SORTING FROSTED BEANS.

To the Editor: Is there any way of separating frosted beans from good ones except by hand picking?—E. M. A., Exeter.

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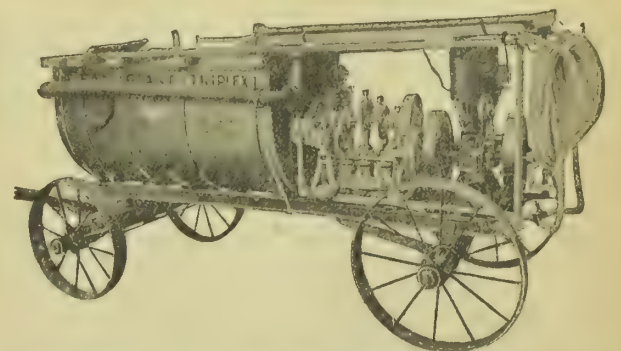
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Alfalfa Hay Grades.

"Many farmers seem to think that alfalfa hay is just alfalfa hay. But some of the growers have found out to their sorrow the buyer does not believe this. Probably 90 per cent of the farmers who are raising alfalfa could not describe the six grades of alfalfa hay as adopted by the National Hay Association," says a University of Arizona writer. Here are the grades:

Choice—Shall be reasonably fine leafy alfalfa of bright green color, properly cured, sound, sweet, and well baled.

No. 1—Shall be reasonably coarse alfalfa, of a bright green color, or reasonably fine leafy alfalfa of a good color and may contain 2 per cent of foreign grasses, 5 per cent of air-bleached hay on outside of bale allowed, but must be sound and and well baled.

Standard—May be of green color, or coarse or medium texture and may contain 5 per cent foreign matter; or it may be of green color, of coarse or medium texture, 20 per cent bleached and 2 per cent foreign matter; or it may be of greenish cast, of fine stem and clinging foliage and may contain 5 per cent foreign matter. All to be sound, sweet and well baled.

No. 2—Shall be any sound, sweet and well-baled alfalfa, not good

enough for standard, and may contain 10 per cent foreign matter.

No. 3 Alfalfa—May contain 25 per cent stack-spotted hay, but must be dry and not contain more than 8 per cent of foreign matter; or it may be of a green color and may contain 50 per cent of foreign matter; or it may be set alfalfa and may contain 5 per cent foreign matter. All to be reasonably well baled.

No Grade Alfalfa—Shall include all alfalfa not good enough for No. Three.

Veneering Baled Hay.—The U. S. Department of Agriculture is investigating the practice of some shippers of hay of veneering or facing the bales. Veneering consists in feeding to the baling machine an occasional forkful of hay that is of higher grade than the bulk of the lot being baled and manipulating the forkful in such a way that the high-grade hay covers the outside of the bale, making the bale appear to contain better hay than it actually does contain. The National Hay Association has requested the department to co-operate with it in trying to eliminate this practice. Buyers of baled hay are warned to be on the lookout for this practice in order to avoid accepting on a cursory examination a lower grade of hay than they intend to purchase.

Uncle Sam Helps Market Products.

The development during the last fiscal year of a more extensive and more highly perfected demonstration market news service for perishable fruits and vegetables and the performance of work preliminary to beginning a similar service for live stock and meats are described in the annual report of the Office of Markets and Rural Organization of the U. S. Department of Agriculture, which has just been published. The news service for perishable foods and vegetables, established for four products in 1915, was extended to include a number of new crops, an additional number of stations in producing territory, and an increased number of permanent offices in market centers. The service has reached a much larger number of persons than during the preceding year and has, according to reports, been valuable in assisting growers' organizations to plan selling campaigns intelligently; in promoting better understanding among growers, shippers, commission merchants and consumers, and in facilitating efficient marketing operations in other ways.

Grading and Standardization.—

MISSION OLIVES EARLY RIPENERS.

THE EHMANN OLIVE CO.

Oroville, Cal. Nov. 17, 1916.

Mr. W. A. Hayne, Box 461, Marysville, Cal.

Dear Mr. Hayne: Answering your kind favor of the 15th, I am enclosing herewith photograph of some of this year's fruit on the Fogg grove, and you will note that they are above the average Mission. We also were able to harvest this entire crop before the frost which shows that they are early ripeners. We will be glad to keep in touch with you on this matter, and if we can be of any further service, don't hesitate to let us know. Yours very truly,

(Signed) E. W. EHMANN.

I propagated the Fogg orchard thirty years ago. The origin of the Fogg trees was directly from the old Mission at Santa Barbara. The trees I have now for sale are full brothers to the Fogg olive trees, and like the Fogg trees, they are all propagated from the large size cuttings. W. A. HAYNE.
Box 461, Marysville, Cal.

The office has continued its studies of market grades and standards for various farm products.

Investigations into the reasons for the economic loss of foodstuffs in transit are being continued, and possible methods of improvement are being studied. Co-operation between shippers and carriers with a view to reducing loss has been stimulated in various instances. Experimental shipments of various products originating on the farm, aggregating nearly 39,000 pounds, were made by parcel post during the year. Results from these and earlier shipments, according to the report, indicate that it is physically possible to ship almost any commodity by parcel post when it is properly packed and handled. The experiments have shown also, however, that comparative returns from other marketing methods must be considered and that it is essential for success in parcel-post marketing for shippers to grade and standardize their products and to use suitable containers.

SWEET OR FIELD CORN AND SORGHUMS DO NOT MIX.

To the Editor: Will sweet corn and Egyptian corn, or wheat, mix? We sowed 5 rows of the Gyp wheat between the rows of fruit trees on an acre of the orchard, and a row of sweet corn in the line of the fruit trees. The Gyp corn grew ten feet high and smothered the sweet corn, but a few of the hills raised and ripened a cob or two. Of these we find the cobs contain a few genuine grains of sweet corn, but the rest of the grain appears to be white field corn. As there is no field corn grown anywhere near us we imagine the sweet corn and the Egyptian wheat have got crossed. We planted a dozen of these grains and they grew all right, but were planted too late to mature seed this year.—S. H., San Jose.

Sweet corn or Indian corn cannot mix with Egyptian. Your sweet corn had been pollinized last year while it was growing, with Indian corn pollen. Or possibly some unknown

agency had carried field corn pollen to the silks of the sweet corn this year; for such a mixture sometimes shows up the season it is made, according to Prof. Madson of Davis.



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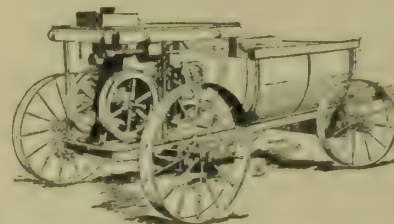
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SAN FRANCISCO

Six Months Not Enough.

To the Editor: Some time ago you answered in the affirmative a query from a man concerning his getting employment for six months on a ranch for the experience before buying a farm for himself. Your answer is of course correct, but I would modify it by saying that six months is too short a time. In the first place, he would at best get the benefit of two seasons only, and every season calls for a different treatment. In the second place it would be difficult to be sure in six months the kind of farming for which one is best adapted. I would suggest that he obtain work on an orchard farm, a dairy, and a poultry farm. Any small ranch and almost all large ones include these three; besides he might find his talents lie in any one of these specialties. A friend of mine bought, in this neighborhood a small but well-equipped dairy which showed a regular and sufficient income. On taking possession he found he couldn't possibly milk more than four cows. He was forced to hire a milker—the income was no longer sufficient. He sold to an experienced dairyman, who is making better than good. I could relate of my many mistakes that might have been obviated by a little experience. We have farmed our present place for two years and we feel we are just beginning to grasp the situation. At the end of our first six months we thought we were old farmers. Today at the end of our two years' experiences we feel we needn't repeat our mistakes of the past, but we know that we will make new ones, less expensive, we hope, in the future. There is so much to be said to men taking up farming, or rather so much that I could say from the point of view of a man having taken up farming late in life, that I won't attempt it now. It will keep for another story. Worthington Ames.

Yuba county.

[We did not prescribe six months. The querist named that period for himself and we let it go at that because it seemed rather promising. So many beginners do not wish to give six minutes but think they can farm better than a farmer without any experience at all, that we simply took what was offered. Of course much longer training is desirable.—Editor.]

MILO MAIZE.

To the Editor: Please tell me something of milo maize in your paper. I suppose it should be planted in rows, and if so, how far apart on good land? How much seed will it require for an acre of ground? Could I, by stopping some of the holes, plant with a grain drill? I have planted beets that way with good success. Will it stand much frost when young? We plant corn from May 1st without much danger. We sow barley from Feb. 15 on. Will milo stand as early as barley, or should one wait until corn planting time? Is the fodder, after grain is harvested, of much value?—R. E. S., Bishop.

[Answered by Prof. B. A. Madson, University Farm.]

Milo maize, like all the sorghums, is very susceptible to frost and cold weather generally, and should not be planted until the weather is quite warm or until the soil is warmed up thoroughly. In fact sorghums of

this kind require more heat than corn and should not be planted until after the corn crop has been planted.

The usual method of planting this crop is to drill it in rows three and a half feet apart, using five to seven pounds of seed per acre. An ordinary grain drill may be used by stopping up some of the holes, though by this method more seed will probably be put on the ground than is absolutely necessary. However, the cost of the seed is a very small item in the production of the crop. The growing season of milo maize under normal conditions is one hundred and thirty days.

It may be used either as a grain or a forage crop, as the vegetative portion of the plant remains green until after the seed is ripe. If it is desired, the seed can be harvested and the stalks then cut and used for fodder, though, of course, the feeding value of fodder of this kind will be relatively low.

EARLY POTATO VARIETIES.

To the Editor: Which are the best two early potatoes to plant for market, as to appearance, smoothness, and yield? What is your opinion of the "Freeman"?—W. C., Watsonville.

[Answered by State Inspector W. V. Shear, Stockton.]

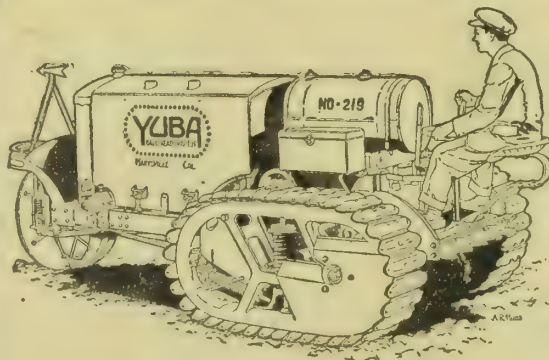
Perhaps the earliest potato used in a commercial way is the Triumph. This is a round, red, rather deep-eyed potato which matures very quickly and is grown because of its earliness. It never yields very heavily. The Cobbler is the next standard early potato. This is a round, deep-eyed potato, especially when grown in rich soil; is a good yielder but not very well known on the Pacific Coast. The Early Ohio and Early Rose are light red, fairly

early standard varieties, the Early Rose being the better yielding variety. On the Pacific Coast the White Rose is most largely used for an early potato, it being smooth, oblong white potato which looks well when boxed for market and takes well with the trade. It is a good yielder on rich soil. The Freeman is a medium early, round to oblong, white, medium shallow eyes and yields well under average conditions. It can hardly be called an early potato.

Owing to the arrival of raw sugar on the market from Cuba the price of sugar in Fresno fell 25 cents on the 100-pound sacks. Sugar is now selling for \$7.40 as against \$7.65 the first of last week. A further drop in sugar is expected.



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Mechanical Power on the Farm.

Users of tractors, engines, pumping plants, motor trucks, automobiles, electric motors, and other mechanical farm power are invited to make this department an exchange of your experiences and troubles.

HOW TO AVOID TRACTOR MOTOR TROUBLE.

[Written for Pacific Rural Press.]

To one who wanted to know how to avoid trouble with a tractor, the lectures at the Gas Tractor Drivers' Short Course at University Farm, Davis, Nov. 13-24, were full of value.

Following are some of the pointers made by F. L. Peterson in one of the lectures Nov. 21.

When you take cotter keys out, stick them back where they belong. This will save time when you need them and will keep them out of the crank case where some have been found.

Get a Dust Remover for the air that goes into the carbureter. When dirt enters via the carbureter, it wears the piston rings and cylinder. It is carried by the oil into the oil of the crank case where it helps wear out the crankshafts.

A man should be intimate with his crank-case. Sometimes baling wire found there would be better elsewhere. The oil well in the crank case should be examined daily and the bearings adjusted while warm. If allowed to get cold and then adjusted tightly the expansion when it warms up may make it stick, and jar things. Be sure you don't get dirt into the crank case from your sleeve.

Stop by Shutting off Gas.—How often the crank case should be washed out depends largely on how you stop your engine. If you stop it by shutting off the spark, there will invariably in a four-cylinder motor be at least one charge of fuel in a cylinder which does not explode. The distillate will then condense and run into the crank case. There it cuts the lubricating oil and makes it feel "chalky."

Changing Crank Case Oil.—How often the lubricating oil in the crank case needs changing depends on its condition. At noon, while it is still warm, put your fingers into the upper inch of the oil. If it feels velvety, it is all right. If it feels chalky, it has been cut by distillate and needs changing. Then feel of the oil in the bottom of the crank case and if it seems thick like well-cooked oatmeal, or jellylike, that means it has broken up into a "sludge" which is of very little lubricating value.

Kerosene to Wash Lubricated Parts.—Kerosene should be used to wash all lubricated parts. Distillate should never be applied to a bearing surface. Lubrication consists of a thin film of oil or grease which fills the necessary space between shafts and bearings, between piston rings and cylinder walls, etc.

Wet a corner of your handkerchief in distillate and rub with one finger across a piston. Then wet another corner in kerosene and rub it across in another place. Then rub a clean finger across both streaks. Where the kerosene was used a "lubricating glaze" will be felt. Where the distillate was used, it will feel rough. If all the lubricating glaze were washed off from a

motor with distillate, 'twould take a week to get the motor back in good condition.

The Best Carbon Remover, after all, is care of the carbureter in the beginning. If the mixture is too rich, the exhaust will throw black smoke. If it does not contain enough gas there will tend to be a "pop back" because it will not explode till so late that it fires the next incoming charge in the intake.

Scored Cylinders and Pistons.—Lack of lubrication, dirt, and lack of effective circulation and cooling are leading causes of scored cylinders.

Lack of Effective Circulation was mentioned as the principal cause of scoring because it allows the engine to overheat. The piston expands and breaks the lubricating film and leaves pieces of metal to grip out the cylinder. Be sure that the pump is working and there is no dirt in the radiator system. One man took two pounds of dirt out of the water-jacket of one cylinder. Water couldn't cool anything through that dirt. Flush the radiator system regularly. Strain the water you use. Watch the lining of the steam hose. You are likely to find it has disintegrated and bits of rubber have rolled up like a ball of chewing gum and stopped the circulation. If you don't know the mineral content of the water you are using look into the teakettle of some one in the neighborhood. If it is considerably scaled up, expect scales in your engine and radiator. They will prevent water from absorbing the heat.

To Remove Scales, completely dissolve 6 pounds sal soda in 5 gallons of hot water, for radiators of over 20 gallons capacity and correspondingly less of each for smaller radiators. Put it into the water tank for a day and then drain the radiator. Take off the hoses and run fresh water through to flush out any scales which may be loosened but not dissolved. This amount of sal soda is not corrosive enough to hurt the machine.

STORAGE BATTERY FOR LIGHTS.

To the Editor: How many kilowatt hours are there in a 6-volt 80-ampere storage battery? Will it light an 8-candlepower 110-volt bulb? If so, will it light five at once? How many hours will the juice last?—P., Kingsburg.

[Answered by W. E. O'Harra, General Electric Co.]

Multiply the volts by the amperes and you have the watts. A kilowatt is 1000 watts. Your battery will handle nearly a ½ kw. load ½ hour when fully charged.

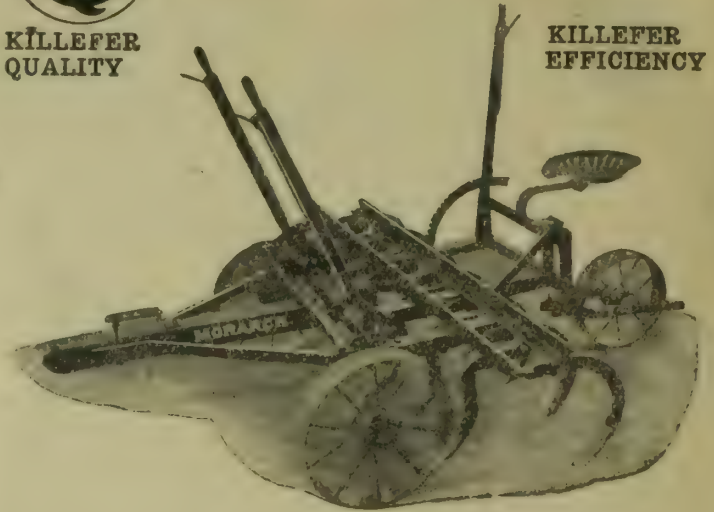
A six-volt battery exerts an electric pressure of only six volts, whereas 110 volts pressure are required to light a 110-volt 8-c.p. lamp. You can get about 110 volts by connecting 18 6-volt batteries in series. If they are 80-ampere batteries, they will light 20 8-candlepower 110-volt lamps for 13 hours. We do, however, construct 2-c.p., 6-volt incandescent lamps which could be used in connection with this single battery.



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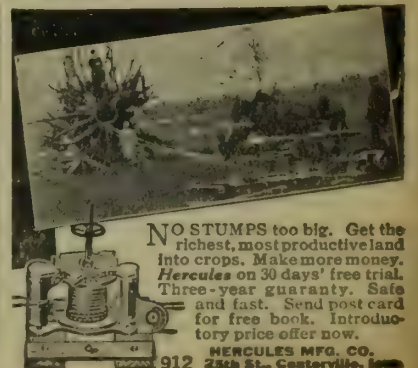
Branches in all principal cities and towns of North Central California.

POWER FOR WATER-LIFT.

To the Editor: How much water can I reasonably expect to raise 55 feet with a 20 h.p. distillate engine and what would be a reasonable cost for distillate, lubricating oil, etc.? Could I lift as much at that depth with any of the pitless pumps as I could by having a pit? Should like to raise 450 gallons per minute.

[Answered by Prof. J. B. Davidson, University Farm.]

It is to be noted in answering the above inquiry that the lift includes not only the distance the water is raised above the pump, but also the



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A pocket memo booklet giving speed and power tables will be sent FREE to all who mail this coupon.

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lift of the water to the pump.

A 15-horsepower engine will lift 500 gallons of water per minute 60 feet, assuming the efficiency of 50 per cent. A distillate engine in good condition on such a load will require 2 to 2½ gallons of distillate per hour.

A quart of lubricating oil per day should be sufficient. The pump must be within 25 feet of the surface of the water in order to be successful, as it is not practical to lift water more than that distance. It is better, however, to have the pump nearer to the water.

WATER LIFT FOR ALFALFA.

To the Editor: How high can water be raised with pump to irrigate alfalfa land and make it pay? How high for orchard land (not receiving so much water as alfalfa)?—R. W. W., Tehama county.

[Answered by Prof. S. H. Beckett, University Farm.]

It is impossible to say how high water can be raised by pumping to irrigate alfalfa or orchard land and make it pay. Such local conditions as market facilities, geographical locations, soil productiveness, local value of the crop, general efficiency of the farmer, etc., all have a direct influence on the maximum profitable lift. As an example, if you are in direct competition with alfalfa growers under a gravity system, other things being the same, fifty feet is generally considered the maximum lift for alfalfa. In other localities where this competition may be lacking and where the alfalfa has a higher market value the limit may extend to possibly 100 feet or more.

[C. W. Woodward of Riverside county paid \$730 for electricity alone for 80 acres of alfalfa, lifting the water about 70 feet, and feeling well repaid not only for this but also for interest on investment in pump, motor, and well. But he gets extra big yields.—Ed.]

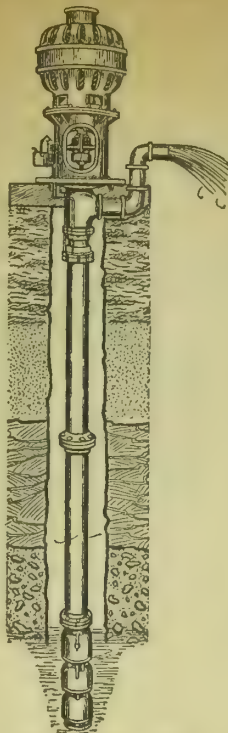
WOOD OR DISTILLATE?

To the Editor: Which is the most economical fuel for raising water when 20 h.p. is required, distillate or oak wood, the latter being \$2.00 a cord delivered?—R. W. W., Bend.

If you already have a steam engine with a wood burning boiler, burn wood as long as you can get it at that price. It will not stay at that price long, however, and the labor of firing the engine must be considered. If you figure on buying a steam outfit, you will have to put in an oil burner before it wears out. Steam engines on California farms are relegated to repose in most cases, being replaced by gas engines which in these days require very little attention and are therefore most economical unless electricity is preferred and available. Reliable distillate-burning gas engines are advertised in our columns.

STIMULATES DEMAND FOR FARM MACHINERY.

Reports from the East are to the effect that farm machinery manufacturers are taxed to the limit to meet the demands of holders of large acreages who, foreseeing a continued heavy demand for foodstuffs from the warring nations of Europe, are sowing larger areas than ever to grain. It is said that increases of 5 to 10 per cent are general in the Atlantic States and the Middle West, and that the increase in our own state amounts to over 5 per cent.

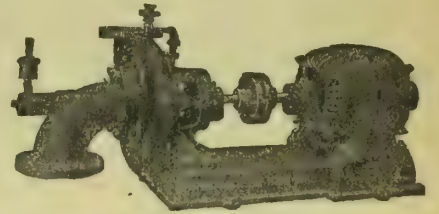


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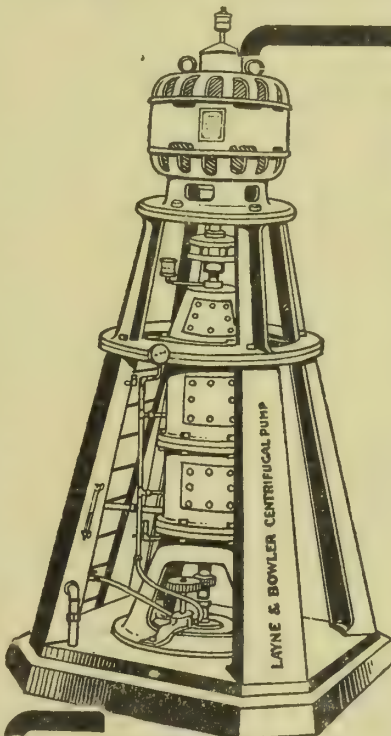
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"World's Largest Water Developers."

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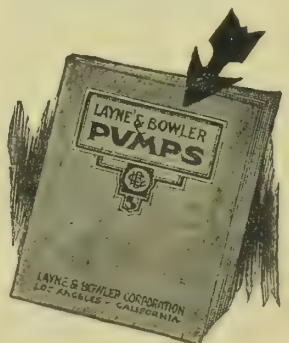
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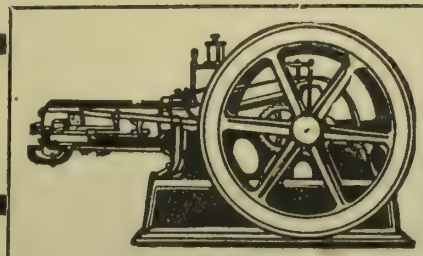
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General Agricultural Review.

FIELD CROPS.

The Lakeside Land Company of Bakersfield have sown ten sections of land to barley.

R. Callens of Hueneme has sold 1800 sacks of limas to T. W. Spier, representing the Lompoc Produce Company, for \$7.30 per cwt.

At Livingston this year growers are holding their sweet potatoes in cellars because of the Pacific coast and northwest markets being glutted.

Fifteen tons of alfalfa seed were recently shipped from Colusa county to Mexico. The prices paid the growers was from 10 1/2 cents to 11 1/2 cents.

Calipatria aspires to be the long staple center of the United States and 10,000 acres of the Balfour-Guthrie company and Coats and Williamson will be planted to it.

An experimental shipment of Japanese onions to California was not successful. One reason is that onions produced in Japan have not the keeping qualities to withstand a long journey.

The Hamilton beet sugar factory of Hamilton City, Glenn Co., which closed when the new sugar tariff became effective three years ago, will resume operations about July 15th of next year, it is announced.

The State Horticultural Commission and the sugar beet growers will send a scientist to Argentina in quest of a parasite which will check the ravages of the beet leaf hopper, which did much damage to the sugar beet crop of the State in 1914.

Many places along the railroads where hay is stored for shipment to this market still have practically their entire stocks on hand as they seldom are able to get a car to load. As a rule, at this season these points have marketed practically one-half their holdings.

Shipments of potatoes from the Dominion of Canada certified by the shippers to be as sound as is commercially practicable and to contain no more than 10 per cent of tubers showing traces of disease will now be admitted at any port of entry of the United States.

The twenty-five thousand acres of Yolo county land, situated in the Holland Land holdings in the Yolo basin, are now about reclaimed. Fifteen thousand acres of the land will be ready for cultivation next spring, practically all of which will be planted to beans.

The Loma Rica Nursery, Grass Valley, is exploiting a seedling pear which keeps for months. The pear was propagated from a seedling on the ranch of Horticultural Commissioner Hassler, of Placerville. It is picked in November and keeps until January and February.

Carbon bisulphide used at the rate of five to eight pounds to 1,000 cubic feet of space is recommended by the Ohio Experiment Station for the destruction of all insects in

stored grain. The grain bins should be air tight and the temperature above 70 degrees.

The report of the Secretary of Agriculture for 1916, just off the press, says that in the Sacramento Valley the acreage devoted to rice has increased during the last five years and that from 1,400 to 67,000, and places the value of the current crop at \$3,500,000.

California is putting in the largest acreage to cereals of the last twenty years, according to George H. Hecke, State Horticultural Commissioner. He says the high prices received by the grain farmers during the last season—barley selling close to \$50 a ton and wheat around \$60—had caused the planting of every available acre.

As a result of a conference between County Horticultural Commissioner Earle Mills and State Horticultural Commissioner Hecke, a new method of inspecting trees will probably arise. It is proposed that quarantine stations be established, and that nursery stock be delivered to these stations for inspection, and after inspection re-shipped by the consignee.

The production of cotton in the Imperial Valley is making notable strides. From a planting of 324 acres in 1909, and total sales of \$12,810, the industry has grown to a planting of 90,000 acres in 1916, and an income of \$7,300,000. The price in the interim has risen from 14c. per pound to 26c per pound, according to a statement issued by the Wells Fargo-Nevada National Bank.

Some of the growers of rice in Butte and Colusa counties will not sell for less than the actual food value of the rice, and if the rice millers will not pay more than the crop will bring from stock and poultry men, the mills will be cut off from their supply. There are thousands of bags of the cereal in the Sacramento Valley awaiting cars for shipment to the big centers where the rice will be disposed of to cattle and poultry dealers.

CITRUS.

This season the Carpinteria walnut growers turned over 293,504 pounds of nuts.

Pohlman Brothers, on ten acres just north of Porterville, netted about \$10,000 from their orange grove this season.

Owing to heavy shipments made recently the Eastern orange market appears to have been somewhat glutted, and prices have fallen.

The Almond Growers' Association of Banning shipped 240 tons of almonds this season, and independent dealers shipped 72 tons from the district.

The Riverside section is coming more into prominence as a lemon producer, not only by reason of extensive plantings, but by increased productiveness.

Fig growers of the San Joaquin and other sections of the State will meet in Fresno January 12th, for a two days' session, to discuss the best methods of fig culture.

Fig growers of the San Joaquin Valley and other sections of the State will gather in Fresno January 12 for a two-days' session, to discuss the best methods of fig culture.

Members of the Butte County Citrus Association have received a dividend of \$2.64 a box for oranges shipped this year, according to an announcement made December 17.

All the packing companies of Northern California report a good run and good prices, despite the fact that Florida and Southern California have shipped heavily in competition.

Work has been practically completed on processing of the Madera and Delano olives at the Porterville Cannery. The entire output of the

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STUMPING — AGRICULTURAL

Here are the subjects of the books that are sent FREE:

Stumps 24 pages, 23 illustrations. Explains and shows the most effective methods of blasting. Tells you how to get out stumps of any size cleaner, easier and cheaper by using either of the Giant Farm Powders—Eureka Stumping Powder for dry work and Giant Stumping Powder for wet work.

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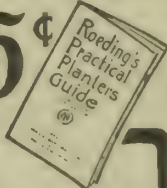
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cannery for the season has been contracted.

The Board of Supervisors of Tulare county at a special meeting, called on the petition of orange growers, refused to appeal the 8-to-1 orange test ordinance adopted some time ago. A rehearing was set for Dec. 20.

The olive interests of Oroville are agitating the desirability of having a bill introduced at the next legislature asking for an appropriation of about \$10,000 for more extensive experimentation work in matters connected with the olive.

According to the announcement from the offices of the Porterville Northwestern Railroad, rights of way have been secured for a six-mile extension of the Magnolia branch of that line, south to the Grand View Heights citrus district.

Following the receipt of quantities of frozen oranges from Tulare county, orange prices slumped in the East, and fruit from all sections of the State is suffering from the lack of confidence in the quality of the fruit, shown by the buying public.

Goleta walnut growers delivered to the Goleta Walnut House this season 1,511,775 pounds of nuts, according to the secretary of the association. The entire walnut crop was sold three hours after the State Walnut Growers' Association fixed the price.

The district freight and passenger agent of the Southern Pacific railroad reports that while there has been a slight loss of fruit because of the frost, there will be between 300 and 400 more cars shipped from the Riverside and San Bernardino districts than last year, provided another cold spell is not encountered.

W. H. Bacchus, near Riverside, says he has to chase his hogs out of his orange grove. After some oranges were blown from the trees by the wind, the hogs refused the usual pasturage, and, standing on their hind feet, ate all the oranges they could reach. Then some of them began to climb trees. So they had to be excluded from the orchard.

As a direct result of the early construction of the Visalia Electric into the eastern part of the Terra Bella district, comes the announcement of the organization of the Grand View Heights Packing Company. The new corporation will not be affiliated with the Exchange or an independent shipper, but will pack fruit for its members and for outside parties.

During the past few days several orange packers at Lindsay have suspended operations until after the holidays, and others are reducing their output. Several of the leading packing houses have installed water separators by which they will be able definitely to determine which

of the oranges have been frosted, and will only ship those which show no trace of frost.

The Terra Bella irrigation district has signed up with W. A. Kraner, of San Francisco, for the construction of the first unit of the irrigation project, the contract stipulating that the work shall be completed on or before January 1, 1918. The cost will be about \$365,000.

Many of the oranges now on the trees in the lower fruit belt of the San Joaquin Valley have become unfit for the Eastern market by the continued frosty weather according to statements of C. E. Campbell, of the Stewart Fruit Company and others. The Fresno foothill district has lost very little fruit, not suffering any damage worth mentioning. Some San Joaquin growers assert that this loss, which ranges from 25 to 50 per cent of the entire crop, is due to the fact that growers could not pick their fruit because of the 8-to-1 test law.

DECIDUOUS.

Apricot and prune growers discussed organization plans at Hanford this week.

About 100 carloads of fruit were shipped from Auburn through the medium of the Auburn Fruit Exchange this year.

The California Peach Growers', Inc., complain that some orchardists who have sold or leased their peach land have not made provision for the delivery of their peaches according to contract.

GRAPES.

More than 300 tons of raisins were dried at the lumber kilns of the Fresno Flume and Lumber Company this season.

The California Associated Raisin Company is able to deliver only about half the raisins ordered for the holiday trade, owing to the general shortage of cars.

At a mass meeting of Santa Clara county grape-growers, held in the Chamber of Commerce Hall, with a large attendance, a resolution declaring lack of sympathy with saloons was adopted.

Dinuba has been made the headquarters for Cimino & Barbera, fruit buyers of Chicago, who this year shipped forty cars of wine grapes to Eastern grape-juice manufacturers and wineries.

A. H. Hendrickson, professor of horticulture of the Department of Agriculture of the University of California at Berkeley, and Professor Flossfeder of the U. C. Farm at Davis, were to give pruning demonstrations at Winters this week.

Frank Henry, the tree and vine expert, has gone down to Lower California to take charge of Francisco Andenaegui's vineyard, and make a study of soil and vine conditions, so that he can direct the work by correspondence this coming season.

Approximately 300 cars of Emperor grapes, packed in drums with sawdust, were shipped out of the San Joaquin Valley this season to Eastern markets. The general plan of shipping drums of Emperors to the Eastern markets late in the season has proved successful, but grapes damaged by the rains will not hold up any better in sawdust than in crates, and some California shippers, it is said, lost money on drums that contained damaged fruit.

THE ARISTOCRATIC BEAN.

High prices have even hit the hitherto humble bean. Down around Santa Maria, where the fearless frijole stalks on the vine, they have been getting all sorts of fabulous prices—\$10 a sack, and such like.

And into a bar-room in that vicinity, a man walked up to the counter, ordered himself a Thanksgiving drink, tossed off the beverage and reached in his pocket.

From the pocket he drew forth a bean, which he laid carefully on the bar. The bartender picked up the bean, dropped it in the cash register and gave the man ten cents change!—Ex.

CORY'S MAMMOTH THORNLESS Blackberry



No briars to tear the hands or clothing—an economy at harvest. The earliest berry to ripen—a guarantee of profit at market. A prolific bearer of gigantic fruit—insuring quantity. A luscious, almost seedless berry of unsurpassed flavor—the final requisite.

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No Split Limbs Left to Decay.

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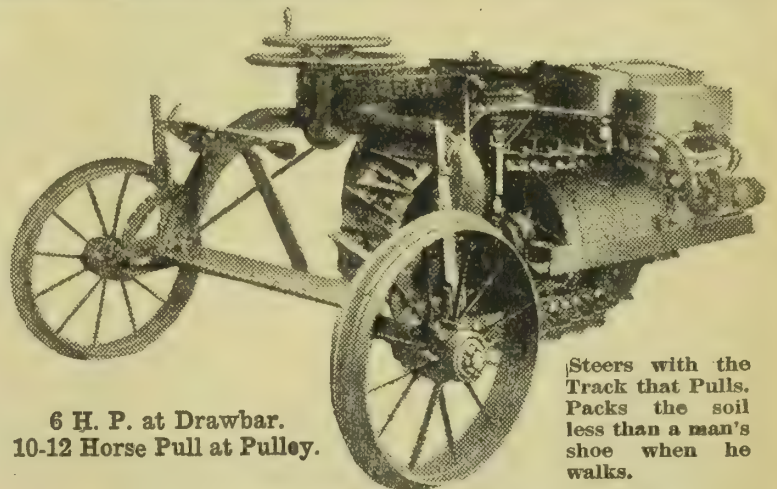
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10-12 Horse Pull at Pulley.

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The Bean Track PULL Tractor Pulls Itself Over the Ground.

It doesn't use up all its power pushing itself along, but pulls like a team. Has giant traction with only 2650 lbs. weight, and easily pulls a big six-horse load. When you hit the soft spots in plowing, it doesn't dig down—just turn the whole front end to left or right, just as easy as a team, and "Gee" and "Haw" it right out. No other tractor will turn clear around in a ten-foot circle. No other can equal it in getting into the corners. No other

can plow within an inch of your vines like this one, without breaking off young shoots. No other can pass under tree boughs only four feet off the ground. And no other can pull so much on the same amount of fuel. It actually does the work of six horses on the expense of two. So simple and sturdy in construction it lasts a life time—this is the little king of tractors. You owe it to yourself to get full information about it NOW.

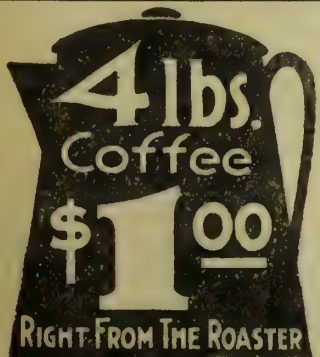
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211 W. Julian St.,
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This coupon does not obligate me to buy a tractor, but is simply a request to reserve one for me for a reasonable length of time. Please also send me prices and terms and the big folder with the complete story of the BEAN TRACK-PULL.

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STREET
CITY STATE



8 1/2 lbs., \$1.00; 3 lbs., \$1.00
NO MONEY FOR COFFEE!

WILSON'S OFFER—
Wilson will parcel post any of the above grades, all charges paid. You use 1 lb. If it is unsatisfactory, return the rest, and Wilson will send you postage.

MIND YOU, NO CHARGE FOR THE POUND USED.

If you are pleased and keep the coffee, you agree to send the \$1.00 within 10 days.

IS THAT FAIR?

When ordering, kindly state how you want coffee ground—fine, medium, pulverized, or in the whole bean.

WILSON'S

868-970 Market St., San Francisco

Livestock Facts and Fancies---XIII.

[By the Editor.]

The organization of the California Shorthorn Breeders' Association, of which the details were given in our last issue, is likely to prove a moving event in the upbuilding of the animal industries of the State. It is a very significant fact, in our view at least, that in all the talk at the meeting for organization there was much more said about the interest of the State in building up a larger and better animal production than about the interests of Shorthorn breeders as such. It surely was a patriotic assembly. Much more could have been very properly said about the Shorthorn service in advancing the interests of the State, and that will come later of course, but it is very promising, both for the growth of the society and its influence, that the first impulse of the organizers was to do something worth while for California.

The society made a good choice in selecting its president. A. W. Foster is not only a Shorthorn breeder of enthusiasm and resources, but he is a Californian of wide experience and success in general affairs. The society has much to do with the general public. To serve its special objects best it must first command attention and approval as a broad-gauged promotion agency. The fact that its president has successfully battled the public eye with locomotives and the greatest ever of world's fairs will help him to drive Shorthorn bulls into it. His informal address when accepting the presidency showed that he knows that the public has to be rung in the nose and not caught by the tail. He lamented the general, and particularly the metropolitan, ignorance and inappreciation of the livestock industry of the State and declared that it must be overcome by education and the organizations of livestock breeders must be the teachers and not spare the rod. He credited the California agricultural papers with good work, but deplored the blindness of the general press which caused its editors to give a couple of inches of space to the great California victories at Chicago and unnumbered columns to matters of no upbuilding significance. The people of

San Francisco must be aroused, he said, to adequate appreciation of their opportunities for efforts and investments which will develop the State. These people own a large share of the farming land of the State, they have the money for its development and equipment for world-beating production, but they do not know what they should do with land and money and how shall they know if they have no teachers? We imagine our brethren of the general press will have the riot act read to them in some very convincing forms when Mr. Foster and his capable associates on the board of directors of the new association get their megaphones adjusted.

It is to be expected that the Shorthorn Breeders' Association will take a strong hold with other purebred organizations for the holding of a livestock show in San Francisco in 1917 and annually thereafter. Several of the members had just returned from the Portland show and were full of admiration of the successful activity of the people farther up the coast. California with better opportunities is not on the show map at all, except in a local way, and therefore not in it in the demand for purebreds and in valuation of them. Unless something is done in San Francisco next year Californians will have to put their thumbs in their mouths and take their products to Portland for exhibition and sale. President Foster believes San Francisco should put up a fund of \$100,000 to secure a show next year and believes also the people will easily do it if the issue, and the necessity for California leadership in the greatest livestock things, are properly shown to them. It is reasonable then to expect that there will be something doing p. d. q. and that the new Association will punch something pretty short and sharp into the side of the sleeping public.

We have an idea that the fact that "California Favorite," the prize-winning steer at the Chicago fat stock show, was a crossbred offspring of Hereford and Shorthorn may start some people off again on the old notion that there is great virtue in cross-breeding. Sometimes of course

cross-breeding does produce striking results in the first cross, and if one wishes to start a new breed it brings a lot of variations to pick from. If one spends a life-time in subsequent selection he may bring out something notable—if he knows what he is selecting toward and is not merely flopping around. But of course, in subsequent generations of cross-breeds one has nothing fixed—he inherits nothing durable from the past and is not advantaged unless he is out for novelties. Therefore the man who desires to develop an enduring type of value in the stock he is growing, does not take to cross-breeding but grades up and up by the continued use of the breed he has chosen to approach. In this way if he selects good individuals for sires, he is practically sure to get where he wants to be. California Favorite did not win because he was crossbred but because he happened to snatch out of his conflicting ancestry the conditions and capacities which made him a good feeder and the University experts picked him to feed because they recognized these characteristics and not because he was crossbred.

SOAKED GROUND BARLEY TO FATTEN HOGS.

To the Editor: What is the best way to feed ground barley to pigs one year old to be fattened? Are carrots or beets good to feed with it?—H. C., Sonoma.

Beets and carrots are fine for this

purpose if not allowed to decay or mix in filth. Soak the barley about 12 hours for best results. Alfalfa pasture or tankage in self-feeders will make the fattening cost less per pound.

TWELVE MONTHS' GREEN HOG FEED.

[Written for Pacific Rural Press.]

Green feed supplements the ground barley-shorts-tankage-alfalfa meal ration for the small Yorkshire herd of Lloyd & Tointon of Sonoma county. Kale furnishes greens from spring until July when beet digging begins. Beets are dug as needed until just before the fall rains when all remaining are stored for winter use. From this time, pumpkins make the pie for the hogs well through winter. Just before the fall rains, vetch and oats are sown for pasture and what hay there is time to cut.

The Bishop Bros.' sheep won at the International Stock Show, Chicago, the following prizes: Purebred Shropshire sheep—three first prizes for rams and ewes; four seconds for rams and ewes; two thirds for rams and ewes; three fourths for rams and ewes, and two sixths for rams and ewes. The Bishop Farm also won the greatest prize offered for sheep, the grand set for five yearling rams. These sheep were shown in competition with the best in the world; Great Britain, Canada, Australia, South American countries and practically every State in this country being represented.

PASTURING PUREBRED SHEEP ON ALFALFA.

[Written for Pacific Rural Press.]

It is no uncommon complaint of sheep raisers that alfalfa pasture is unsuited for sheep raising because of the loss through bloat; but such experiences have not been encountered by Kaupke Bros. of Woodland, who run their herd of purebred Hampshires on alfalfa continuously except during the winter months, when they are fed hay in buildings. They state that in several years' experience with sheep raised in this manner they have lost but two head from bloat. They are careful, though, in turning the sheep into a field for the first time to see that they are well filled with dry hay and water, and after they have been turned in once they are kept there, instead of changing them back and forth from hay to pasture and vice versa.

Another objection, which Kaupke Bros. have not experienced is the packing of the soil, which many complain of where sheep are pastured on alfalfa. They have their fields subdivided and never turn the flock into an enclosure till the land is comparatively dry after irrigation. While they have been pasturing their flock on the same land for a number of years they do not see any noticeable decrease in the annual yield of hay, when such fields are harvested. This they attribute to the added fertility placed by the sheep on the land.

Grapewild Farms Berkshires

Grand Leader 2nd Again Shows Himself a Wonderful Breeder

At the 1916 California State Fair the following prize-winners were sired by the World's Fair Grand Champion Berkshire Boar:

GRAND CHAMPION SOW (which later sold in the Congress Sale for \$500—the highest price ever paid for a California bred Berkshire).

GET OF SIRE—(The most sought-for prize among breeders).

FIRST PRIZE AGED SOW—FIRST PRIZE SENIOR YEARLING—FIRST PRIZE JUNIOR YEARLING—SECOND PRIZE UNDER-YEAR SOW.

He is also the sire of **PREMIER LEADER**—Champion at the Stanislaus Livestock Exposition 1916.

A daughter of Grand Leader, **ESCALON POLLY**, was **CHAMPION** and **RESERVE GRAND CHAMPION** at Oregon State Fair.

STOCK OF ALL AGES FOR SALE.

A. B. HUMPHREY, Prop.

ESCALON,

San Joaquin Co., Cal.

(Escalon is 22 miles east of Stockton on the Santa Fe; also on the Tidewater Southern Electric Railway. Autos take paved Mariposa road direct to Escalon.)

Shorthorn Bulls You'll Like

That's the only kind we have included in our 1916-17 offering, for, above all things, we want you to be satisfied.



Ormondale Victory, the bull shown, is one of the extra good yearling bulls we now have for sale. He is big-boned, growthy, solid red in color, thick meated, sired by the good bull **Imperial Victor**, and out of **Scottish Jane**. The kind any breeder or cattle man can safely buy.

THE KIND THE TRADE DEMANDS.

Come and see our herd, 7 miles from Palo Alto on the Woodside Road, or write us for pedigrees and prices.

SOLID GUARANTEES WITH EACH ANIMAL.

Shorthorn Cattle
Duroc Jersey
Swine

ORMONDALE CO.

R. F. D., No. 1,
Redwood City
California

Dairy Industry Exceeds 40 Millions.

[Written for Pacific Rural Press.]

For the first time in the history of California, the annual value of dairy products has reached the 40-million-dollar mark. Such is the information contained in the eleventh biennial report just issued by F. W. Andreason, Secretary of the State Dairy Bureau.

This is approximately six millions more than for the year ending November 1, 1913, six millions more than for 1914 and two millions more than for 1915, the figures showing that the industry is experiencing a steady, healthy growth rather than a boom.

The totals for the various products for the two years, 1915 and 1916, are given as follows:

1915.	
Butter, 67,549,409 pounds ..	\$19,386,680
Cheese, 6,249,775 pounds ..	881,218
Condensed, powdered, evaporated milk ..	1,352,959
Casein, 690,750 pounds ..	34,537
Market milk, cream, ice cream ..	12,000,000
Calves produced on dairies ..	3,000,000
Skim milk and buttermilk ..	1,750,000

Total\$38,405,394

1916.	
Butter, 70,030,174 pounds ..	\$19,181,264
Cheese, 7,745,124 pounds ..	1,203,592
Condensed, powdered, evaporated milk ..	1,488,818
Casein, 1,864,317 pounds ..	503,365
Market milk, cream, ice cream ..	14,000,000
Calves produced on dairies ..	2,500,000
Skim milk and buttermilk ..	1,750,000

Total\$40,627,039

Milk.—That this increased total value has resulted from increased production rather than from increased values is shown with both butter and whole milk, the report stating, in reference to sweet milk: "In San Francisco, milk was delivered at railroad terminals, a few years ago, by the producers for 18 cents a gallon, with the privilege that the amount delivered could exceed the amount contracted for, five per cent during the season of the year when milk was most plentiful and with the guarantee that it should never fall five per cent below the said amount during time of scarcity. From June 1, 1913, to May 31, 1915, the milk was delivered in San Francisco for 17 cents, with similar privileges and guarantee of delivery during the seasons of plenty and scarcity. Since June 1, 1915, the average price paid to the producer delivered at the terminals in San Francisco, has been 16½ cents."

Butter prices up to September 30, at which time the report was compiled, were less than they have been, and cheese has averaged about as in previous year, as shown below:

	Butter	Cheese
1907	30.10	14.02
1908	27.80	12.90
1909	30.00	14.30
1910	31.30	15.60
1911	28.00	14.50
1912	30.77	15.46
1913	32.12	16.06
1914	27.61	15.79
1915	28.70	14.10
1916	27.39	15.54

Butter Production.—In production of butter by counties, the report shows that Stanislaus is still in the lead with almost 10 million pounds, Imperial is second with 6,780,552, and Humboldt third with 5,588,604. Other counties producing over a million pounds are: Fresno, Merced, Kings, Sonoma, San Luis Obispo, Marin, Yolo, Butte, Glenn, Sacramento, San Joaquin, Tulare, and Sutter.

While we have increased our pro-

duction, the market prospects are bright, as trade connections have been established in new markets. This export trade amounted to about four million pounds of butter, shipped to Australia and New Zealand in 1915, and about two million pounds to England and Eastern markets during 1916. Markets are also being developed in China, Japan, the Philippine Islands, and in Java.

It is pointed out that exporters have usually met success, largely due to the fact that nearly all of the cream used has been pasteurized, a more uniform product resulting therefrom. More uniform packing, salting, and containers have also been factors in improving the grade for export business; and this has been further augmented by the stringent rules set down by the Wholesale Produce Exchanges of the State as to flavor, color, etc.

Cheese is also on a more permanent basis, a number of our factories having started the manufacture of cheddar cheese, which compares favorably with that made in other States, and which finds a ready market for either home consumption or exporting purposes.

Condensed milk production has increased as a result of the European war, which takes the larger portion of Danish and Holland milk out of our home markets.

The report deals at length on the new score cards used in inspecting dairies and their use, and also contains pertinent suggestions and illustrations as to economical, sanitary dairy buildings.

During the two years covered by the report there were 429 arrests of dairymen by the inspection department for failure to comply with the State laws. Of these, 404 were fined, 18 had sentence suspended, 16 were dismissed, and nine were acquitted.

A copy of the report may be had by writing F. W. Andreason, Sec'y State Dairy Bureau, San Francisco.

COMMON SENSE VS. SCIENTIFIC PIG FEEDING.

[Written for Pacific Rural Press.]

About the most striking exhibit at the Ventura Fair last fall was a pen of two pigs, litter mates. One was fed by a boy, Newell Snow, the other fed by the farmer from whom he got the pig, in the usual way in a pen. The boy's pig weighed 198 pounds at the end of the test; the other was thin, long-legged, long-nosed, small, and underdeveloped. It weighed just 100 pounds. W. B. Parker, who was then Farm Adviser of ventura county, writes us as follows:

Sweepings,	110 lbs., value....	\$1.10
Rolls barley,	170 lbs., value....	2.25
Tankage,	39 lbs., value....	1.25
Milk,	210 lbs., value....	.42
Corn suckers,	25 lbs., value....	.05
Raisins,	25 lbs., value....	.25
Alfalfa hay,	30 lbs., value....	.24

In his financial statement, which I have divided by one-half because he had 2 pigs, the cost of the pigs was originally 4.00
Caring for pigs at 10c an hour for ten hours 1.00

Total cost of pigs.....\$10.56
Value of the pig at the end of the contest\$15.84
I think you can estimate the value of the other pig from his weight, minus what the butcher would take off for condition.

The University Farm shipped two fine specimens of Hereford yearling bulls to Honolulu last week.

REMCO

Air-Dried Redwood

PIPE

For Irrigation—Water Supply—Power. Sizes 8 inches to 12 feet. For pressure up to 400 feet head. Guaranteed for 100 per cent overload.

Costs less than any other pipe of equal capacity, efficiency and endurance.

Not affected by worms or insects, acid or alkaline soils, electrolysis or roots.

Withstands extremes of heat and cold, dryness and moisture.

Outlasts any pipe except cast iron, and maintains its full flow capacity to the end.

TANKS

For Water—Wine—Vinegar—Oil—Acids—Solutions. For Storage—Mixing—Fermenting—Pickling—Leaching. In all shapes and sizes—500 to 650,000 gallons.

SILOS

For Dairymen—Stockmen—Feeders. Sizes, 25 tons to 300 tons. The STANDARD.

ALL REMCO PRODUCTS are manufactured to your order from CLEAR, AIR-DRIED REDWOOD. Selected from our stock of forty million feet. Their outstanding features are HIGHEST GRADE MATERIAL, SUPERIOR EFFICIENCY, MECHANICAL PERFECTION, MAXIMUM DURABILITY.

Sold direct to users. Catalogs sent on request.

Redwood Manufacturers' Co.

1608 HOBART BUILDING,

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Let Me Buy Your Shorthorns - Herefords

I have bought show and breeding cattle for most all of the older breeders in California and my wide experience here, together with my knowledge of Eastern herds makes it possible for me to secure

THE BEST AT A BIG SAVING TO YOU.

I am now taking orders for my next trip East to secure on a strictly commission basis, high class stock for California customers. Write me at once of your wants.

As to the service you may expect I refer you to the following satisfied customers: W. Mayo Newhall, San Francisco; W. Bemmerly, Woodland; Parrott Est. Co., Chico; Frankenhelm Bros., Stockton; A. E. Noyes and Son, Sutter City, Stanford University Ranch, Vina; Wm. Russ, Eureka; and J. A. Donohoe, Donohoe-Kelly Banking Co., San Francisco.

ADDRESS ME

R. M. DUNLAP

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Hillcrest Stock Farm

Shorthorn Cattle, Shropshire and Merino Sheep



Shorthorn Bulls for Sale, sired by such noted bulls as King Lancaster, Knights Perfection, Greenwood Knight and Greenwood King. Nearly all offsprings of the famous King Edward.

These Bulls are conceded to be the best offering ever made from the Hillcrest Stock Farm. For Particulars Apply—

T. S. GLIDE

Proprietor

Davis, California

Digester Tankage

Send for Sensible folder on feeding hogs

Western Meat Company

Animal Food Dept. 704 Townsend St., San Francisco

Breeding, Feeding, Care, Win \$25 Prize.

[Written for Pacific Rural Press.]

Besides earning \$80.24 for the month of November, figured on San Francisco butterfat quotations, five cows in the grade Holstein herd owned by the Napa State Hospital, won the \$25 monthly prize of Pacific Rural Press for the best five grade cows, headed by a purebred sire, entered in the California State Dairy Cow Competition.

The average for these five cows for last month is not in itself a fair criterion of their possibilities, for while they averaged 46.587 pounds of butterfat for the month, only two of the lot were in milk the full 30 days, cow number 15 giving 58.35 pounds fat in 27 days; number 30 producing 50.06 lbs. fat in the full 30 days; number 17 milking 17 days and giving 23.52 lbs. fat; number 29 milking 24 days and producing 48.37 lbs. fat, and number 28 milking the full 30 days and producing 49.13 lbs. fat. Number 30 was milked three times a day, but all of the rest were milked twice a day.

each cow, selling off the poorer ones and keeping only the best.

Preparation.—Knowing the value of preparatory work in the profitable handling of a dairy herd, it is the custom to allow all cows in the herd one to two months' rest between lactation periods, most of which time they are pastured on marsh lands. About a week before freshening, the cows are taken to the barn, where they are fed about four pounds of bran daily, and all of the alfalfa hay they will eat. In the case of cow number 30, this was supplemented with 20 pounds of freshly sliced beets daily. All are provided shelter at night and straw for bedding, having the run of a well-drained corral in the day-time, where fresh water and alfalfa hay in racks is provided. Salt is fed in the grain mixture at all times, in about the same proportion as would be used on food for human consumption.

Feeding.—The five cows that were entered in the competition, with the

receiving, except that she was milked but twice a day. Her best day's production last year was 48 pounds of milk a day. This year, with three milkings, she has already produced up to 68 pounds a day, and it is Mr. Heath's belief that she will make 90 pounds a day in another two or three weeks. He attributes this increase entirely to the extra milking and with an average test of 3.24 per cent believes he can demonstrate the practicability of milking all cows three times instead of two times a day.

The actual cost of feed for the cows while on test, figured on a basis of \$14 a ton alfalfa hay, \$440 a ton barley, \$40 middlings, \$32 coconut meal, and \$6 a ton beets, totaled a trifle less than \$55. This leaves a net amount of \$5 per cow over and above cost of feed, and does not include labor, calf, skimmilk and manure.

J. W. Campbell, Holstein breeder of Escalon, reports the sale of bulls to F. L. Green, Escalon; Chas. Popp, Escalon; Edwards Bros., Atlanta, and C. H. Hardeson, Fillmore, Ventura county.

eral opinion of recent literature on the subject points to immunization as the possible relief for this dreaded disease; but according to such literature, the preparation of vaccines has not reached sufficient refinement to warrant their being classed as sure cures, such as might be inferred from the answer given. It might not be out of place to say that the only definite methods of determining contagious abortion are by the complement-fixation and agglutination tests of blood samples of the subjects and the finding of the abortion bacillus. The fact that a cow gives birth to a calf prematurely should be looked upon with suspicion, but should not be taken as absolute assurance that she has contagious abortion as the writer intimates.

L. E. Cline.

U. S. Dept. Agr., Fallon, Nev.

FEEDING COWS \$16 HAY.

[From San Joaquin Farm Bureau Monthly.]

Considerable San Joaquin County hay has been sold to the Humboldt County Farm Bureau this fall. The Humboldt Dairymen pay \$15 to \$16 a ton for this hay at their nearest railroad station. With this hay they feed green corn fodder in the fall and beet pulp and coconut meal in the winter, along with pasture. While hay is scarce in Humboldt county, and some of the dairymen find it necessary to buy this high-priced hay, a great many of them buy it although they could get along without it. Few dairymen will lose any money by buying this hay and most of them will make good by it. Most of the San Joaquin county dairymen would not continue in the dairy business and pay \$16 a ton for hay. The cows would be sold before such a price would be paid.

The Humboldt county dairymen who are buying this San Joaquin hay are not thinking of selling their cows, as they are paying them good money. There is a reason. The knowledge obtained from six years of testing in the Humboldt County Cow Testing Association, along with the use of good purebred bulls, is the Reason.

The Goodyear Rubber Company has gone into the culture of cotton on a 6000-acre tract in Arizona, the product to be used in its automobile tire factories. Five carloads of mules were shipped from Woodland to work on this plantation. This company has disbursed half a million dollars from Woodland during 1916 for mules and horses, the stock being bought all over Northern California.

PACIFIC RURAL PRESS

SAN FRANCISCO, CAL., December 14, 1916 NO. 3039

WELLS FARGO NEVADA NATIONAL BANK OF SAN FRANCISCO

PAY TO THE ORDER OF Owen Duffy, Steward State Hospital, Napa \$ 25.00

Twenty-five and no/100-----DOLLARS

PACIFIC RURAL PRESS

State Dairy Cow Competition

Frank Honeywell

(Fac-simile of the first check awarded by Pacific Rural Press to entrants in the California State Dairy Cow Competition for the highest average production of butterfat by five cows in a grade herd, headed by a purebred sire. Fifteen more checks of the same amount will be awarded during the next 15 months.)

Breeding.—While too much emphasis cannot be given the feed and care these cows received, it is important to know that they have been consistently bred for production for a number of years.

Originally the foundation cows at this institution were Durhams, of the type commonly found and bred in most sections of the State some years ago. These cows were crossed with a registered Jersey bull, the progeny showing an improvement in persistency of milk flow and butterfat content. It also tended to reduce the size of matured cows and improve udder, barrel and back.

The immediate ancestors of the five prize-winning cows on the dam's side were these Durham-Jersey grades, and on the sire's side the Holstein bull, Juliana Lad, a son of Juliana De Kol, who produced over 22 pounds of butter in seven days as a two-year-old, Juliana Lad having been used as herd sire on the Durham-Jersey grades. His prepotency is shown in the increased production of milk, increased size in his heifers and a solid black and white marking of all five winning cows.

To further increase the average production of the 120 cow herd, Dairy Foreman V. L. Heath, under the supervision of Business Manager Owen Duffy, has continually weeded out the boarders by systematically weighing and testing the milk of

exception of number 30, were fed practically the same ration. This contained a mixture of 6 pounds rolled barley, 2 pounds coconut meal, 2 pounds middlings and approximately 30 pounds of alfalfa hay. Number 30 was fed, in addition to the grain mixture, 24 pounds of sliced beets, and cut herself down on alfalfa hay to about 20 pounds a day. Beets would have been used in the ration of all the cows had they been more plentiful, as they are both succulent and nutritious.

Care.—As already stated, the cows were provided shelter both before and after freshening; an old horse barn, equipped with box stalls, affording excellent quarters for this purpose. Mr. Heath states that he finds it a profitable practice to keep all of the cows in these stalls, whether they be on test or not, for a week's time, as in that way he is able to watch both calf and cow at a time when accidents to both are most apt to occur.

Milking of all cows is done in the modern concrete milking barn, which has been completed by the institution during the past year, and the cows have access to a well-drained, rock-covered corral.

Sidelights.—An interesting point brought out by last month's testing was the production of cow number 30. During 1915 she was given the same feed and care that she is now

CONTAGIOUS ABORTION.

To the Editor: Referring to two answers to questions in your veterinary department of December 9, I wish to take the liberty of questioning the advisability of recommending vaccination as a cure for infectious abortion in cattle, inasmuch as the treatment of contagious abortion by vaccines or any other means is considered to be as yet in the experimental stage. Such unguarded recommendations have a tendency to make readers easy victims of abortion remedies, the virtues of which have never been proven. The gen-

KINGS COUNTY JACK RANCH

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AMERICAN JACKS AND JENNETS.

LARGEST HERD IN THE COUNTRY.

80 Head Jennets

40 Head Jacks

CAN SUPPLY YOUR WANTS AT ALL TIMES.

Write, or Come and See Them.

John Burrell, Proprietor

R. B., Box 73.

Hanford, Cal.

Sales barn in Hanford near S. P. Depot.

FIVE MIGHTY GOOD YOUNG Holstein Bulls

STRONG INDIVIDUALS—WELL MARKED—GREAT BLOOD LINES. Will Be Sold at Low Figures.

Write or See WILLIAM LYNN,

SANTA YSABEL HOT SPRINGS,

PASO ROBLES, CAL.

TULARE TO JOIN COUNTY LIVESTOCK CIRCUIT.

As a result of the successful livestock show held recently in connection with the Citrus Fair, Tulare county will probably join the County Fair circuit next year.

E. W. Major judged the cattle; W. Bernstein, hogs; and J. D. McCord, jacks and mules. The awards were as follows:

Jersey Cattle.—Peter Lawson, Tulare, 2nd junior yearling heifer and 2nd in 3 yr. over bull. All other awards to A. A. Jenkins, Tulare.

Guernseys.—All awards to W. J. Higdon, Tulare.

Ayrshires.—All awards to O. M. Smith, Visalia.

Dairy Shorthorns.—All awards to Chas. L. Weaver, Tulare.

Holsteins.—Bulls: Tagus Ranch, 1st, four yrs. and over; 3rd junior calf. W. J. Higdon, 2nd, 3 yrs. and over. Geo. Loughery, Visalia, 2nd,

senior yearling. Ed. Leever, Visalia, 1st senior yearling. R. F. Guerin, Visalia, 1st junior yearling and 3rd senior calf. Alex. Whaley, Tulare, 2nd junior yearling and 1st and 2nd junior calf. L. B. King, Visalia, 1st senior calf. J. P. Walker, Visalia, 2nd senior calf. **Championships.**—Tagus Ranch, senior champion; Alex. Whaley, junior champion; Tagus Ranch, grand champion. **Cows:** R. F. Geurin, 1st, 3 years and over and 2nd senior yearling. W. J. Higdon, 2nd and 3rd, 3 years and over; Tagus Ranch, 1st, 2 years and under 3 years and 2nd junior calf. L. B. King, 2nd junior yearling; Alex. Whaley, 2nd junior yearling and 1st and 3rd senior calf. Geo. Loughery, 3rd junior yearling. **Tagus Ranch, 1st on aged herds.** Alex. Whaley, 1st young herd and 1st calf herd, also first on get of sire.

Berkshire Hogs.—All awards to A. M. Smith, Visalia.

Hampshire Hogs.—All awards to R. O. Bagley, Tulare.

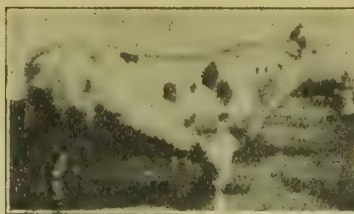
Poland-Chinas.—Geo. Loughery, 1st senior yearling and grand champion. All other awards to R. F. Guerin, Visalia.

Duroc-Jerseys.—Boars: W. J. Fulgham, Visalia; 1st and 3rd aged. W. J. Higdon, 2nd aged. Tagus Ranch, 1st senior yearling and 1st and 3rd senior pig, senior and grand champion. Allen Thompson, Tulare, 1st and 3rd senior pig. C. G. Cummings, Visalia, 1st junior pig. Sows: J. L. Dickinson, Visalia, 1st aged and first produce of sow. Allen Thompson, 1st junior yearling, 2nd senior pig, 1st and 3rd junior pig, 1st herd, senior champion. Tagus Ranch, 1st and 3rd senior pig, 2nd herd, junior and grand champion. W. J. Fulgham, 2nd junior pig, 3rd herd.

Jacks.—J. B. Newman, Tulare, 1st aged, 1st yearling and champion. W. J. Fulgham, 2nd aged. J. Holclaw, Tulare, 3rd. R. E. Chenoworth, Visalia, 1st 4-year-old.

Mules.—J. B. Newman, 2nd and 3rd 2 year old and under 3; 2nd 1 year old and under 2; 1st and 2nd under 1 year, and championship. R. E. Chenoworth, 1st 2 yr. old and under 3; 3rd 1 year old and under 2. W. J. Fulgham, 3rd under 1 yr.

Quality A. R. O. Holsteins



PRINCE RIVERSIDE WALKER, 112081

Dam, Aaggie Acme of Riverside 93957, A. R. O., 28.35 pounds butter, 585.10 pounds milk in 30 days, 808.82 pounds butter in one year. Sire, Prince Gelsche Walker 81663, whose first thirteen daughters averaged 19.50 pounds butter in 7 days, including the State record two and three-year-olds.

OPPORTUNITY KNOCKS BUT ONCE AT EVERY GATE.

Dams of our bull calves have already made good, and will make higher records, as they are all young cows. Buying these calves is not a gamble but an investment that is worth your consideration.

SPECIAL.
The wonderful lot of A. R. O. heifers we recently bought in Washington based to the \$10000 bull, Sir Bessie Fobes Tritonia 125865, are freshening and the bull calves dropped will be in great demand.

Their sire is a son of a 35-pound cow, Jessie Fobes Bessie Homestead, former world's record holder for persistent production. She and three of her sisters, her dam, and Tritonia's sire's dam average 31.03 pounds butter in 7 days.

REMEMBER THAT

Eleven of our Holstein heifers, at average age of 3 years, have made an average of 19.53 pounds butter in 7 days. Highest individual record was 23.31 pounds. They include two granddaughters of King of the Pontiacs and four granddaughters of King Segis.

LOOK THIS OVER.

Eight of our 3-year-old heifers have made an average of 440 pounds butter fat in one year with second calf. Highest individual record 460 pounds fat.

NOW IS THE TIME TO PLACE YOUR ORDER. EVERYTHING SOLD AT THIS RANCH IS GUARANTEED AS REPRESENTED.

W. J. HIGDON, Tulare, Cal.
ROYALLY BRED A. R. GUERNSEYS.

El Dorado



Holsteins

My herd consists of 15 A. R. O. cows and 25 registered heifers, all selected females. Bull calves from such cows and sired by a son of a 33-pound cow are worth consideration when buying foundation stock. **SEGIS PONTIAC DE KOL BURKE LUIT, now heading my herd, CORRESPONDENCE SOLICITED.**

His dam, Luit Burke, has an A. R. O. record of 32.76 pounds butter in 7 days as a junior 4-year-old. She is a full sister to Riverside Sadie De Kol Burke—32.29 pounds butter in 7 days.

His sire, Segis Pontiac De Kol Burke, is the senior sire of the A. W. Morris & Sons, Inc., herd, and was grand champion bull at 1916 California State Fair. Correspondence solicited.

ALEX WHALEY

TULARE,

CALIFORNIA

SUNNYSIDE HOLSTEINS

Headed by the Wonderfully Bred
SIR VEEMAN KORNDYKE PONTIAC No. 156051.

His sire has 75 A. R. O. daughters, nine with records over 30 pounds butter in 7 days. His dam, Beatrice Korndyke Veeman, has A. R. O. record of 30.13 lbs. butter in 7 days.

This bull's best daughters will be officially tested as fast as they freshen.

We have 25 A. R. O. cows and 45 heifers and calves.

Beautifully marked young bulls from A. R. O. cows with records up to 27.41 lbs. butter in 7 days, are priced right to inquiring purchasers.

We have a splendid herd of

Registered Poland China Hogs, prolific and pigs are the easy feeding. Both big and medium type. Sows are early maturing kind.

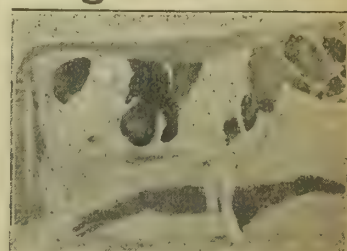
Young boars and gilts for sale.

R. F. GUERIN

Visalia,

California

King's Holsteins



DE KOL CANARY, Dam, Zampa Marguerite 152575, made 23.91 pounds butter in seven days.

With several A. R. O. cows in my herd and the recent purchase of the young bull shown in this space I have a splendid foundation.

Official testing will be practiced. Won 1st Senior Bull Calf and 2nd Junior Yearling Heifer Calf at Tulare County Citrus Fair Livestock Show.

WRITE FOR PRICES ON BULL CALVES.

Lowery B King

VISALIA,

CALIFORNIA



Gertie's Son, Victor, No. 123159. Dam, Victor Lady Lake (R. O. M.) of 536 pounds butter in 303 days as a 4-year old.

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and Start Right

135 Registered Jerseys in my herd, including 18 Register of Merit Cows. Blue-ribbon winners at 1916 Hanford, Bakersfield, and Visalia Fairs.

Correspondence solicited.

A. A. JENKINS

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Cherry Red Color.

HERD SIRES:

Tulare Boy

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E. N.'s Colonel

Tulare Boy was Sweepstakes Winner at 1915 Fresno Fair. Weighed 276 pounds at six months of age.

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and

BEAUTY BOY, NO. 72755.

The kind of sires that get the size on their pigs.

Eight of our brood sows just farrowed 83 pigs.

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Visalia, Calif.

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James W. McCord

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The Virginia State College and Polytechnic Institute has developed, from its Holstein herd, seven of the highest record cows in the State, including Dione De Kol, holder of the State record for 7- and 30-days' milk and fat production. They also developed V. P. I. Viny Vee-man, holder of the State record for senior two-year-olds. The leading State colleges and public institutions, by all tests, have found the Holsteins to be the best and most profitable of all dairy breeds. Send for FREE Illustrated Descriptive Booklets. The Holstein-Friesian Association of America.

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We have 20 head of good gilts and 3 two-year-old sows for sale. Either sired by or bred to I. B. A. Wonder, Reserve Champion at the P. P. I. E. Also a few extra good young boars ready for service sired by I. B. A. Wonder.

Also a fine lot of Fall Pigs.
We please you or refund your money.
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E. F. WILSON, STOCKTON, CAL.

Uniform Livestock Very Desirable.

[Written for Pacific Rural Press.]

Whether hogs are being grown for the block or for breeding purposes, it is undoubtedly a decided asset to have them of uniform size, quality, and color, as experienced breeders and raisers will all agree.

To establish such uniformity in one's herd requires, according to M. Bassett of Kings county, first a definite idea of the type you are to grow, herd sires with prepotency to perpetuate their type and continual selection of the offspring for the reserve herd of brood sows.

Probably nowhere in the country can one find a more decided tendency toward uniformity in livestock than on the Bassett ranch, and Mr. Bassett credits it entirely to the above reasons. When he began breeding Poland Chinas nearly 20 years ago, he had a very definite type in mind.

During that time there have been furies in favor of other types of the breed than the one originally in mind, but to these Mr. Bassett has paid scant attention, for he says, "Too many breeders make the mis-

take of changing their ideals with current fancies instead of staying with one type, thus breeding not one but many types into their herds."

No Inbreeding.—But Mr. Bassett is not a believer of inbreeding in order that uniformity may be secured. In his own case he maintains several families of Polands but in each case they are of the same type. To perpetuate this he has purchased his boars from the same breeders in the East for many years because they also have had but one type in mind.

It is not the object to describe the type Mr. Bassett prefers, in fact that should be decided upon by the breeder himself, but the pertinent fact about Mr. Bassett's experience is that it points the way toward uniformity in any and all kinds of livestock. Of course to be successful, the type decided upon should be one that will meet market requirements; for that is the ultimate source of profit to the livestock raiser, be he producer of pork or breeding hogs.

Pig Feed the Year Round.

[Written for Pacific Rural Press.]

Early in October, 1915, George Farmer of Kings county had eight Duroc sows that raised 78 pigs. In December the pigs, then weaned, were turned into a five-acre field of rye, where they ran till May 1, when they averaged 101 1/2 pounds in weight.

After selecting the best gilts and young boars for breeding purposes, there were 45 to be fattened for the butcher. These were put up in pens. The first week they were fed nothing but soaked ground barley and skim-milk, putting on 11 pounds during the seven days.

The following three weeks, they were fed four pounds ground barley and one pound of cocoanut cake, with about 10 gallons of skim-milk a day. At the end of the 30 days they had gained 64 pounds on the average.

Mr. Farmer is a firm believer in both good breeding and good feeding,

using some grain all of the time in connection with rye, alfalfa, or Bermuda grass pasture, and raising pumpkins in the corn field each year that the hogs may have a succulent feed in the winter months when pastures are poor.

Exercise is also an important consideration, and especially is this true with animals that are to be used for breeding purposes.

For example, in the field which is given over to the herd sires, there is a large patch of brush and small tree at the end furthest from the barn. In warm weather this brush provides a cool place for the boars in the day time and if fed at that end of the field the hogs would stay there day and night. But they are fed and watered close to the barn, thus compelling them to make several trips across the field daily. This develops good strong bone and also keeps the boars in good breeding condition.

Sweet Clover for Foothills.

To the Editor: A few lines about sweet clover in Pacific Rural Press would be interesting to ranchers in all California foot-hill districts. Will goats and cattle eat it readily without being starved to it? Do you believe that merely scratching the ground, as some advertising claims, is sufficient cultivation to start the seed to growing? Will it stand our dry hot summer weather without being killed out? What is the best time to sow the seed? Is this the same as was called "wild sweet clover" in Iowa 30 years ago?—G. L., Auburn.

It is the same. It is used considerably in the orange groves for a summer-growing cover crop. The hot summer does not hurt it if it has water. Even scratching the ground is not necessary to start the seed growing except to cover and moisten it. But a better germination and better growth will be obtained by preparing a good seed bed. When cut or pastured before the stalks get woody, it is a valuable stock

feed; but having a bitterish taste, most stock must first be starved to it. Afterward, they eat it readily. Unless there is waste, its feed value is about equal to alfalfa. For cover crops, it is usually sown in the fall and irrigated to start the germination. It may be sown in spring, where winters are severe or the soil waterlogged in winter.

B. F. Kendall of Hardwick, who recently started a herd of registered Duroc Jersey hogs, also has a vineyard and believes that every vineyard and orchard man should have a few hogs to make use of the waste fruit. Mr. Kendall ships by the carload. He makes good use of his cull raisins and grapes by feeding them with a small ration of corn to his hogs. They make a rapid gain, and the pork is solid and of a very fine flavor.



Here's Where it Tells—

It isn't a question of sentiment whether or not your cows are in the pink of condition—but it does make a big difference in your bank account. Since you are keeping cows for milk instead of for meat, better see to it that their milk-producing organs are kept working normally.

At the first sign of decreasing milk-flow, look for the cause. Ten to one it is due to some trouble with the digestive or genital organs, and such disorders are best set right by the use of Kow-Kure, a cow medicine backed by twenty years of success. Try Kow-Kure on your poor milkers and watch results. Hundreds of doubting cow owners have been convinced that this old remedy has no equal for the prevention and cure of Abortion, Barrenness, Retained Afterbirth, Milk Fever, Lost Appetite, Scouring, Bunches, etc. Buy Kow-Kure from your feed dealer or druggist; 50c. and \$1.00.

Write for our free treatise, "The Home Cow Doctor"

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Write now: **B. F. BAKER CO., NUMBER MAIN ST., BURNT HILLS, N. Y.**
(1-2-20)

Cows on Alfalfa Pasture All Winter.

[Written for Pacific Rural Press.]

About 70 cattle and 40 young stock were pastured all last winter on the sandy alfalfa field operated by C. H. Snell in San Bernardino county; and the alfalfa was not damaged enough to notice. Alfalfa in some parts of Southern California seems to grow more or less all winter.

"I believe," said Mr. Snell, "that if I pasture the alfalfa late so the first crop will not be ready to cut till the rains are over, I can cure the hay better."

In mid February last spring, the alfalfa began to grow fast on account of the hot weather, and one day the cows came up "awful full and with lots of milk." Then some of the smaller ones came up bloated, so a

cross fence was put in and the Snells "almost lived with the cows" for a while. In early March, they were turning them into the alfalfa for two hours in the morning and again for two hours after dinner, but always watching carefully.

The 58 cows then milking were giving about 1200 pounds of milk per day. They wouldn't eat more than a quarter ton alfalfa hay from the stack to which they had access, but they received 200 pounds dried beet pulp per day.

"We never had a big Holstein bloat, but numbers of the smaller boned ones have, and we would like to know why," says Mr. Snell, who cannot just figure the problem out.

Cactus Nutriment for Stock.

To the Editor: What is the food value of cactus, either mountain or cultivated, for stock and poultry?—W. P. B., Lemoore.

A load of spineless cactus grown in Solano county analyzed 92.77 per cent water, 0.52 per cent protein, 0.12 per cent fat, 4.43 nitrogen-free extract (mostly carbo-hydrates), 0.92 per cent fiber, and 1.24 per cent mineral matter. Possibly mountain cactus would contain a slightly smaller proportion of water. O. L. Linn of Stanislaus county writes that T. H. Branson of Manteca is meeting success feeding the green slabs of cactus to his hogs.

He has three 8-months shoats which are the remainder of a herd of 14 that he brought up to about 180 pounds. Their principal ration was about 3 wheelbarrow loads of cactus every day until about a month or six weeks before he wanted to fatten them, when he began feeding them Egyptian corn in the head. Mr. Branson states that the only ration the hogs received until they were fed the Egyptian corn, besides the cactus, was the swill from the house, perhaps 7 gallons of skimmed milk each day, and about one sack of barley to each hog.

Imperial County Butterfat Contest.

[Written for Pacific Rural Press.]

What the cow will produce of butterfat in two days is the contest for which prizes of \$20, \$10, and \$5 will be awarded at the Imperial Valley Livestock Fair to be held at El Centro four days beginning Dec. 27. The testing will be done as in official testing: the cows will be milked clean Tuesday night; twice on Wednesday and Thursday they will be milked, and the milk weighed and tested in the presence of the judge. Feed will be recorded. No animal producing less than a pound of butterfat in a day will be awarded a

premium. The cows will then be exhibited with complete records of the tests.

Fern's Silver Ray, the Jersey owned by Frank Van Derpoel, which completed in September a record of 700.72 pounds butterfat under the ranch conditions of a farmer who has had to struggle for his home, will be shown at the Fair. She has carried a calf 160 days; and if it is born alive, she will be entered in Class AA of the A. J. C. C. Register of Merit. It is said that no other California cow is in this class.

ORCHARD, COWS, AND CORN HELP EACH OTHER.

(Continued from first page.)

persistent milking was to be encouraged, received cottonseed meal, oil cake, bran, etc. But no cottonseed meal is fed within three months before calving, because Mr. Brown believes it causes retained afterbirth.

Cows are kept day and night in a corral of an acre or two, including a shed open toward the south. Part of the corral is well sodded with Bermuda.

Cattle.—All the cows were grades three years ago, and some of them pretty poor producers, as shown later by Mr. Brown's scales and milk records, and Babcock tester. The poor ones were weeded out. Holsteins were gradually replaced by Jerseys, and only three of the typical high producers retained. Eight purebred cows and a purebred bull have been purchased besides a number of high-producing grades. Some of the cows show a weak back-line,

but Mr. Brown is correcting this by use of the bull Imperial Lady's-Financier, a 22-months animal with beautiful back-line, fine bones and withers, great heart girth, very typey, but all male. Fern's Imperial Lady is an R. M. cow with a record of 730 pounds 13 oz. fat from 11,507 pounds of milk, one of the highest six Jerseys in California, with authenticated records, according to Mr. Brown. One grade giving 3 gallons a day had been fresh 14 months; another gives 6 gallons when fresh and 3 gallons when a year along. Mr. Brown is working into purebreds as fast as his capital allows.

According to reliable informants there have been 136 silos constructed in Stanislaus county during the past year. No district in the State is so thickly dotted with these tall structures as the section adjacent to Modesto and it is the claim of those in a position to know that next year will see an even larger gain in numbers in that and adjacent districts.

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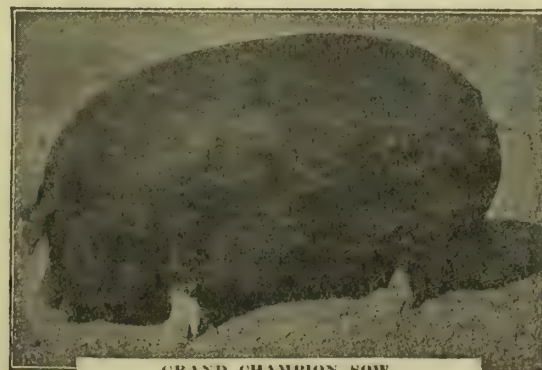
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Write us at once, or call and see the herd.

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GRAND CHAMPION SOW.
P. P. I. E. 1915; Sacramento 1916.

For many years, at widely separated show rings, under many different judges of varying type ideals, my Poland Chinas have been consistent prize-winners. My herd is large, and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished. Young Stock, \$30 Up. M. BASSETT, Br. 1, Hanford, Cal.

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HERD BOAR, ROYAL POINTER 2nd, 197092, First Prize

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Live Stock and Dairy Notes.

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THE DAIRY.

The scarcity of feed has caused a slight slump in the butter output in Kings Co.

The forty-second annual meeting of the Ayrshire Breeders' Association will be held in New York, January 11.

A milk condensary costing \$150,000 is to be built at Galt by the Utah Condensed Milk Company of Richmond, Utah.

Three creameries of Tulare paid out a total of approximately \$110,000 for cream delivered during the month of November.

The butter situation continues a strong one. The reports of the 54 associated cold storage warehouses, in the Central West and East, December 1, showed that there was in store 52,581,000 pounds.

The organization of a cream-pooling association is under way in Madera county. There are three creameries operating there at present and the perfection of this association will seriously affect two of the three.

A cream pooling association has been organized by dairymen of the Patterson community, having seventy-six members, owning 1564 productive cows, for the purpose of collective marketing of their produce.

Dairymen in Eel River Valley, Humboldt county, are asking the United States weather bureau to establish rain gauges on Eel river, making possible the issuance of flood forecasts by the local weather bureau.

A new dairy is to be established on the Poorman cattle ranch of 1700 acres near San Jacinto, which has been used as a pasture for years. The Poormans own a dairy near Perris, and will bring a number of their cows from there to the San Jacinto ranch.

Dairymen in Stanislaus county are looking forward to one of the best markets for dairy products they have ever enjoyed, as the establishment of condensary, cheese factory and casein factory, together with the various creameries, gives them an outlet in four directions.

W. J. Higdon, Holstein and Guernsey cattle breeder of Tulare, advises us that the Holstein cow Paula Segis has just completed a seven-day record of 30.49 pounds butter without any preparation. She is now on a 30-day test. She was sired by King Segis.

It is reported by the Holstein-Friesian Association that the Holstein-Friesian cow Tietje Queen De Kol 95772, owned by A. C. Howe of New Hartford, N. Y., has completed a production of 525.1 pounds milk containing 32.726 pounds fat in seven consecutive days.

Dairymen of the Patterson community have on foot the organization of a cream pooling association, the purpose of which is to sell, collectively, cream for a given period to the highest bidder and through co-operation to cut down the expense of hauling the cream to market.

Additional contracts with dairymen in Alameda, Santa Clara, and San Joaquin counties, insuring increased control of milk production, have been secured by the campaign committee of the Associated Milk Producers. Bottles have been ordered for its direct delivery service.

A. A. Jenkins of Tulare reports the sale of Jerseys as follows: "Gertie's Lad's Count" to Edw. Whaley of Tulare, and "Gertie's Lad of Tulare" to W. H. Herd of Tulare. They are both sons of Gertie's Lad bred by him and going to improve the herds of these progressive dairy farmers.

The Stanislaus County Farm Bureau has recently organized a cow-testing association in that county with a membership of about 1,200

cows. It will operate mostly in the Denair, Hickman, Turlock and Patterson districts, and in that way not conflict with the old association which operates chiefly in the Modesto district.

Dr. Williams of Cornell, an authority and investigator on barrenness and contagious abortion in dairy cattle, will hold a meeting to be arranged by the Imperial County Farm Bureau with valley veterinarians in January. He is brought to this State by the University of California for a veterinarian's short course.

The following is a list of the owners of cows in the Sacramento-Yolo Cow Testing Association that produced more than forty-five pounds of butterfat during the month of November: John Krull, 57.0; Henry Pylman, 54.6; Henry Pylman, 53.1; Garrett Pylman, 52.8; John Knepfel, 51.3; J. D. Feran, 50.1; John Krull, 47.4; W. H. Nichols, 45.9.

The Northern California Stockmen's Association is strongly opposed to the proposed increase in grazing rates in the National Forests. At a meeting held in Redding recently there were representatives from Siskiyou, Modoc, Shasta and Trinity counties who adopted a resolution protesting against the proposed increase in rates and asking Congressman Raker to intercede at the Washington end.

A number of dairymen of Chico have taken advantage of the opportunity for State inspection under the new milk law, which went into effect Oct. 1, and have applied to the State Veterinary Surgeon at Sacramento for inspection. An inspection will be made every six months of the dairies and creameries which have applied. Those who do not permit State inspections will be forced to withdraw from selling milk.

C. A. Starkweather, State Dairy Inspector, informs us that he has visited all of the dairies supplying whole milk for retail consumption in Merced, Madera and Stanislaus counties since October 1 and that he has sent 225 applications to the State Veterinarian for tuberculin testing of dairymen's herds since that time. He is meeting with very little opposition in the enforcement of the new law, finding dairymen willing to test their herds out as long as the State is willing to do it for nothing.

BEEF CATTLE.

Ten Wisconsin farm boys received \$1,025 for twelve beef calves exhibited by them at the first Wisconsin Boys' Baby Beef show recently held at the State capital.

The Napa County Livestock Association appointed, at its last meeting, a delegate to attend the California Swine Breeders' Ass'n annual meeting in Los Angeles January 18-19.

Three hundred and seventy-two yearlings and 2-year-old heifers were sold to the United States Indian Service, and are intended for distribution among the Indians of the Klamath Indian Reservation for breeding purposes.

The heavy frosts of the past two weeks have seriously affected the feed on the ranges adjacent to Oakdale, Stanislaus county, according to Chas. W. Emart, who says that his cattle have dropped off considerably in flesh just recently.

Haden Smith of Woodland advises us that the Duroc boar Uneeda Wonder, owner jointly by himself and H. P. Slocum and Son of Willocks, has been shipped to Mr. Slocum's ranch for the present. His permanent home, after the next two months, will be on the Smith farm.

F. R. Steel of Grants Pass, Oregon, writes us that consignments to the Western Berkshire Congress sale, to be held at Davis, Feb. 15, have al-

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 24c per word.

SWINE.

Poland Chinas.

SMITH'S POLAND-CHINAS—Sows and gilts bred to Joker, First Prize Boar at the Wisconsin State Fair, 1915. These sows and gilts, sired by Iowa Wonder, who is a son of A. Wonder, the most celebrated Poland-China boar, living or dead. Litters from this mating are the best I have ever seen anywhere. Prices low quality considered. Will sell one or a carload. As a special inducement each purchaser will be given a year's subscription to the American Swineherd, the best swine paper published and a copy of the Handbook on the Sow; also a copy of the Pig Feeders' Manual. Geo. A. Smith, Corcoran, Cal.

MAKE BIG MONEY with our big-type Poland-Chinas. Smooth, easy feeders that make greatest weight in shortest time at lowest cost, topping the market at 225 lbs. in 6 months, 300 head, both sexes, all ages, reasonable prices. Some fine bred sows and gilts, and top quality young boars. Best Eastern blood lines. Satisfaction guaranteed. Ranch in Tulare county, but address owner, E. H. Whitten, Route 5, Box 647, Los Angeles.

FOR SALE—One May 7th Poland-China Boar. Big bone, short head and ear. Also 3 Feb'y 24th sows, bred to an Orange Wonder boar. All broad backs, short heads. \$20 each, registered, crated, f. o. b. N. M. Lester, Grady, Cal.

GRAND CHAMPION SUPERBA POLANDS—A few choice spring Superba boars ready for service. Sows bred to Superba for fall litters. Prices reasonably low. Rough's Greenfield, Arlington Station, Riverside, Cal.

REGISTERED POLAND-CHINA BOARS of serviceable age. A Wonder and Chief Picture breeding. Every animal guaranteed. Price \$25. Bar N Ranch, E. A. Noyes & Son, Props., Sutter, Cal.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated. Purchaser to return crates. E. A. Hall, Watsonville, Cal.

REGISTERED POLAND CHINAS—Young boars ready for service. Weanling pigs, both sexes. Prices attractive for quick sales. J. H. Cook, Paradise, Cal.

REGISTERED POLAND-CHINAS—Fertile, fabulous, profitable porkers. Choice boars now ready for service, \$25 each. Weanlings, \$15. Dr. J. A. Crawshaw, Hanford, Cal.

LAKEVIEW STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

FOR SALE—Two O. I. C. Registered brood sows, one registered Poland-China boar, 47 shoats and pigs. John Willerton, R. F. D., Oakdale, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hank Alton, Humboldt Co., Cal.

POLAND CHINAS—The type Shoats, either sex, or in unrelated pairs. O. L. Linn, Lincoln, Route 4, Modesto, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trechett, Box 324, Hanford, Cal.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

POLAND CHINA HOGS FOR SALE—Registration papers furnished free. C. A. Cooley, Durham, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 274, Davis, Cal.

KNOR HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

REGISTERED POLAND CHINA WEANLINGS—Prices moderate. R. R. 1, Box 34, Galt, Cal.

AMAWAGE FARMS—Poland-China hogs and Holstein cattle. G. H. Loughery, Visalia, Cal.

REGISTERED POLAND-CHINA BOAR for sale. Address Walter Teller, Atwater.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

REDAOKS RANCH herd of registered Poland Chinas. W. J. Hanna, Gilroy.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Grand Leader 2nd heads our herd, not only himself a champion, but the sire of Champions. At the 1916 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for Fall pigs. A. B. Humphrey, Escalon, San Joaquin Co., Cal.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckel, Berlin, Cal.

WINONA BERKSHIRES—Three July 27, 1916, daughters of Winona Violet Champion, out of Rookwood Lady 106th, a sister of Laurel Champion. Winona Ranch, R. 1, A. Box 105, Grants Pass, Ore.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

BARGAINS IN BERKSHIRES—Write today for our Special List of high-class boars and open gilts. Both the offerings and prices will please you. Silver Birch Farms, Box P, Newmont, Wash.

KOSE CREST BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Perris, Cal.

CHOICE REGISTERED BERKSHIRES—Exceptionally fine pigs, \$15 each. Unrelated lines, \$40. Boars, sows, and gilts at reasonable prices. W. H. Waugh, Riverside, Cal.

SPECIAL—Six good service boars and a few sows in pig to Premier Leader due to farrow in October. Geo. M. York & Son, Berkshire breeders, Modesto, Cal.

IMMUNIZED NORMANDY BERKSHIRES—Good type. Breeding stock, any age, for sale at all times. Cast iron guarantee. Arlington Smith, Visalia, Cal.

BERKSHIRES—Bred sows and weanling pigs. Write for prices and pedigrees before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

REGISTERED BERKSHIRES of prize-winning blood. Write for description and photos. Pinedale Stock Farm, Modesto, Cal.

REGISTERED BERKSHIRES—For sale, bred sows. Boars ready for service and weanlings. C. H. Thompson, Nevada, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings Co., Cal.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Weanling pigs. \$10. G. A. Cooley, R. 7, San Jose.

BERKSHIRES—Carruthers Farms, Mayfield, Cal. Second annual sale, August 2, 1917.

REGISTERED BERKSHIRES—Young stock for sale. E. W. White, Elk Grove, Cal.

CHAS. GOODMAN—Breeder of high-class Berkshires. San Jose, Cal.

Duroc-Jerseys.

DUROC JERSEYS—My hogs won highest honors at State Fair, taking first prize herd, first prize sow, second prize boar. Were the largest of their age exhibited. Stock all ages for sale. Prices reasonable. Breeding and satisfaction guaranteed. Haden Smith, Route 1, Box 84D, Woodland.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

DUROC JERSEYS—Herd boars. E. N.'s Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. F. Walker, Visalia.

REGISTERED DUROCS—Service boars and open gilts from High Model, Defender and Crimson Wonder stock. River Bend Farm, St. Helena, Cal.

RANCHO RUBIUS DUROCS—All sold except a few July and September gilts. Extra good. Write for prices. Elmer Lamb, Ceres, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Roudier & Son, Napa.

HEAVY BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

DUROCS—Defender Cinc B and Golden Model strain. The big type. Allen Thompson, Tulare.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denver, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hanford.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class pure-bred hogs both sexes, any age.

DOS HERMANOS REGISTERED DUROCS—Duroc & Berkshire. Lodi, Cal.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROC-JERSEY SWINE—Preserved M. Johnson, Napa, Cal.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

Yorkshires.

LARGE YORKSHIRES—Choice spring boars, gilts, and weaned pigs from Champion sow P. P. I. E., or from breeding of champion boar and sow, Sacramento, 1916. If you see them grow you will like them. Rivers Farms, Paradise Road, Modesto, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

Chester Whites.

BILIKEN HERD OF CHESTER WHITE SWINE—Registered and Cholera Immune. 4 bred gilts due to farrow the latter part of January. 10 young boars of service size. 20 open gilts that will be bred to suit the buyer. Write for the booklet "Chester Whites" and find out what the breed is and what they are doing. This herd represents the very best blood lines the breed produces. C. B. Cunningham, Mills, Sacramento County, Cal.

REGISTERED IMPROVED CHESTER WHITES—Grizzly Bear Ranch, East Auburn, Cal.

Essex.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd, L. W. Millsap, Yolo, Cal.

DAIRY CATTLE.

Holsteins.

REGISTERED HOLSTEINS—Herd sire King Korndyke Hengerveld Ormsby 7th, 86623. His full sister as Junior 3-year-old made 32.04 lbs. butter in 7 days. The record of his dam and his sire's dam averaged 30.98. George Kounias, Modesto, Cal.

25 HIGH-GRADE HOLSTEIN Heifers, sired All tuberculin tested. Also 35 yearling heifers sired by same bull. Terms and prices apply to W. A. Nichols, 2552 Haste St., Berkeley, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamella Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

REGISTERED BULLS by King Korndyke Pontiac and out of A. R. O. cows. A splendid selection old enough for service. Write or call. J. H. Harlan, Woodland, Cal.

REGISTERED HOLSTEIN BULLS, \$50 to \$150. Glorietta Stock Farm, Woodland, Cal.

A NICE YOUNG SON from El Prado Wayne Calantha and from a 24.26 lb. dam. J. W. Benoit, Breeder of Registered Holsteins, Route C, Modesto, Cal.

TULARE GUERNSEY AND HOLSTEIN Farm is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

THE McCLOUD RIVER LUMBER CO., McCLOUD, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

THE HENDERSON CO.—Breeders and importers. Registered Holsteins. Sacramento Bank Bldg., Sacramento.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire pigs. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons, Corp., Importers and Breeders. Woodland, Cal.

CREAMCUP HERD—Registered Holsteins Pontiac bull calves. M. Holdridge, Modesto, Cal.

BREEDERS OF REGISTERED HOLSTEIN Cattle—McAlister & Sons, Chino, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. E. F. Guerin, R. 3, Box 58, Visalia, Cal.

FOR SALE—Registered Holstein Bulls. Prices right. E. B. Church, Sierraville, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

REGISTERED HOLSTEIN-FRIESIAN CAT- tle—J. M. Campbell, Escalon, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. O. L. Morse, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto, Cal.

A. R. O. HERD OF HOLSTEINS—Alex. Whaley, Tulare, Calif.

Jerseys.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3 lbs. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

VENADERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly record. Guy H. Miller, Route 1, Modesto, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

BREEDER OF REGISTERED JERSEY CAT- tle—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

YOUNG REGISTERED JERSEY BULL Calves at reasonable prices. O. J. Ames, Oakdale.

JERSEY BULLS—Sons of Gertie's Lad and Gertie's Son's Victor. A. A. Jenkins, Tulare, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

Guernseys.

PACIFIC GUERNSEY HERD—Cattle selected from best imported and Advanced Register Stock. Now offering choice bulls. C. S. Rasmussen, Loleta, Cal.

BELLA VISTA GUERNSEYS—Males from A. R. dams. \$100 up. Hampshire swine from prize-winning stock. Address J. W. Henderson, 1st National, Berkeley, Cal.

EDGEWOOD FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgewood Farm, Santee, Cal.

FINE YOUNG REGISTERED GUERNSEY Bull—\$85. Registration papers sent on request. K. L. Evans, Gilroy, Cal.

Other Breeds.

BREEDERS OF REGISTERED SHORT- Horns—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

BEEF CATTLE.

1500 HEAD HIGH GRADE HEREFORD cows. Some calves by their side. 300 head fine yearling steers. 200 mixed weaned calves. Sixty head exceptionally well-bred grade Hereford bulls. Ten head of very choice registered Hereford bulls ready for service. G. R. Patton, Porterville.

SHORTHORNS—Herd headed by grandson Whitehall Sultan. Calves sired by \$10,000 Prince Imperial for sale. One or a carload for sale. Get our prices before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

SCOTCH AND SCOTCH-TOPPED SHORT- horns—We have the largest herd of straight Scotch cows in California. Foundation stock of both sexes for sale; also a choice lot of range bulls. Barco Ranch, Hollister, Cal.

SIXTEEN HEAD of very choice Shorthorn Heifers for sale. Roan and red in color. Aged from 18 to 22 months and bred to high-grade bull. Will take \$60 per head for cash deal. J. M. Maxwell, Dixon, Cal.

REGISTERED YEARLING SHORTHORN Bull—Heavy-boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1, Redwood City, Cal.

FAIR OAKS RANCH, Willits, Cal.—Young registered Shorthorn bulls for sale. Sired by Landseer 379318, grandson of Imported Villager 295884.

HOPLAND STOCK FARM—Registered Shorthorns. Prices on application. Hopland, Cal.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

ready been received from the following: Joseph Wilson Jr., Mason, Nevada; Winona Ranch, Grants Pass, Oregon, and the University of California.

SWINE AND SWINEMEN.

Oakdale is becoming a stock shipping center. Recent shipments were: J. M. Frailey, a car of fine mules to Kansas City; Boone & Ornbaum, three cars of hogs to San Francisco; B. M. Mitchell, a car of hogs for the San Francisco market.

R. J. Yates, a big breeder of Poland China thoroughbred hogs, will move his entire establishment from Goldfield to a newly acquired property in the Murdock tract near Orland early in February.

The stock and swine men exhibiting at the citrus fair stock show, Visalia, are already laying tentative plans for the second annual event which will be held earlier in the fall of 1917, and not made a part of the citrus fair, as was done this year, that they might get a start on an annual show.

Porterville bankers are co-operating with the Department of Agriculture of the State University in their efforts to improve breeds of hogs, and have arranged to distribute purebred gilts to farm boys on their personal notes. The first shipment has been received.

H. I. Marsh of Stanislaus county reports the following sales of purebred Poland Chinas: Four boars to Red River Lumber Co., Lassen county; a boar to B. E. Sponge,

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

CROLEY'S CALF FEED with skim milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

SIMON NEWMAN CO., Breeders of Registered Herefords. Newman, Cal.

GEORGE WATTERSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms. Mayfield, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Rambouillet and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

KAUPKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

BISHOP BROS., SAN RAMON, CAL.—Breeders and importers Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillets. Hanford, Cal.

HORSES AND MULES.

HORSES FOR SALE—All or any part 170 head. Imported Percheron stallion. 50 grade Percheron mares. 30 three-year-old colts, broke and mated; \$250 to \$300 per span. 30 two-year-olds; 30 one-year-olds; 30 nine months old. S. L. Skaggs, Madera, Cal.

STOCKTON PERCHERONS again winners at Sacramento. Get next, brother farmer. H. G. Learned, Producer, Stockton.

REGISTERED SHIRES—Black Hawk Stock Farm, Importers and Breeders, Easton & Ward, Proprietors, Burlingame, Cal.

REGISTERED IMPORTED PERCHERON Stallion for sale cheap. Hewitt & Hewitt, Dixon, Cal.

MISCELLANEOUS.

SAN FRANCISCO LIVESTOCK EXPORT Co., Eugene R. Croley, Manager, solicits foreign orders for purebred registered and merit breeding animals and fowls. California has great diversity of climatic and other conditions that enable us to select animals that have been raised under conditions similar to those of the location for which they are intended. We should be informed regarding these conditions and be allowed ample time to make selections. Nearly all disappointments in buying afar are the result of insufficient information as to conditions or to lack of time for proper selection. Our plan and terms for "raising animals to order" to fit into peculiar foreign conditions is worth investigating. References: Dun or Bradstreets, or San Francisco banks. Office, 319 Underwood Building, 525 Market St., San Francisco.

THOROUGHbred SCOTCH COLLIES—All bred from our noted prize-winners. Have a few 3 months old puppies—very choice. Write us what you want. Browndale Kennels, Redwood City, Cal.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co., Inc., 531-637 Brannan St. San Francisco.

STOCK RANGES AND FREE RANGE—Different counties. Write for free booklet. Joseph Clark, Sacramento.

D. O. LIVELY, 216 Hobart Building, San Francisco, buys and sells livestock—any kind—any quantity.

DUROCS AND GUERNSEY BULL CALVES. Gilts bred to 900-lb. boar. Ed. B. Johnson, Turlock, Cal.

Fresno; a boar to J. J. Crane, Fresno; and 4 gilts to Fred Hartsook, Lankershim.

A. F. Busch of Potter Valley writes us that he has just purchased a purebred boar to head his Poland-China herd. This boar was sired by Big Clarinda. His dam is Jumbo's Queen 2d, both owned by B. F. Marmon of Farmington, Ia.

J. D. Crawshaw, M. D., has sold Poland-China boars to the following: Frank Pellissier & Co., Merced; W. Zimdars, Columbia; and Dick Wilson, Laton. He says the hog raisers of the State are just waking up to the profits to be derived from improving their herds by using well-bred boars on grade sows.

CONTAGIOUS ABORTION AND CATTLE DISEASES.

On the evening of Tuesday, December 26, Prof. W. L. Williams of Cornell University, will be at Travelers Hotel, Sacramento, as the guest of J. M. Henderson Jr. Prof. Williams is rated as one of the greatest authorities on abortion and other diseases of cattle, and the evening will be given over to an entirely informal discussion of these subjects. Mr. Henderson cordially invites all breeders and dairymen to be present to meet Prof. Williams, and the evening should prove helpful and profitable to all those present who have problems to meet along these lines.

SOUTHERN CALIFORNIA HOLSTEIN BREEDERS' SALE.

[Written for Pacific Rural Press.]

At the combination Holstein sale of the Edgemont Holstein Farm, Anoakia Breeding Farm, and the Whittier State School, Dec. 12 at Rivera, 33 of the 63 head sold brought \$200 or more, nine brought \$300 or more, and one brought over \$400. Total sales were \$14,127.50, an average of \$224.25 per head including 11 calves.

Salomina Palmer Tuebie, consigned by the Edgmont Farm, sold for \$465 to A. E. Austin of Los Angeles. He bought 15 head. J. J. Jeffries bought 20 head, McAlister & Sons 13. There were 10 other buyers who took one or two head each.

STOCKS OF FROZEN AND CURED MEATS, DEC. 1.

This is the first monthly report issued by the Office of Markets and Rural Organization, Washington, D. C., on the stocks of frozen and cured meats held by wholesale slaughtering and meat packing establishments and public cold storages. As a number of firms have not responded to inquiries, the report does not include all holdings.

Reports from 170 firms show that these firms now hold 122,695,990 pounds of frozen beef; 222 firms report holdings of 33,021,327 pounds of cured beef; 117 firms hold 29,

242,941 pounds of frozen pork; 283 firms hold 124,351,542 pounds of dry salt pork; 352 firms hold 210,902,406 pounds of sweet pickled pork; 318 firms hold 52,168,141 pounds of lard; and 101 firms hold 5,085,796 pounds of frozen lamb and mutton.

The 121,456,942 pounds of dry salt pork reported by 234 firms who held 83,414,521 pounds last year is an increase of 38,042,421 pounds or 45.6 per cent.

Pull Big Stumps by hand



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Clear your stump land cheaply—no digging, no expense for teams and powder. One man with a K can rip out any stump that can be pulled with the best inch steel cable. Works by leverage—same principle as a jack. 100 pounds pull on the lever gives a 48-ton pull on the stump. Made of Krupp steel—guaranteed against breakage. Endorsed by U. S. Government experts.

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by a daughter of

KING MEAD of RIVERSIDE

Butter 7 days 35.36—Butter 30 days 141.00—Average % 4.5.

This is the record just made by Anggie Acme of Riverside 2nd.

If you want a bull that will transmit—

HEAVY PRODUCTION—HIGH TEST—GOOD TYPE,

your best opportunity is in a son of KING MEAD OF RIVERSIDE. Our claims for high per cent of fat are not based upon abnormal seven-day tests, but on the average test of his daughters for the year.

His first five two-year-olds tested for the year average 14,325 pounds milk, 721 pounds butter and 4% butterfat. Two of these made over 21 pounds in seven days, and with second calves have made from 26.17 to 28.46.

We can now offer a beautiful son of King Mead of Riverside from a three-quarter sister to Aralia De Kol, 28,000 pounds milk and 1142 pounds butter. His dam made 819 pounds butter from 19,352 pounds milk in a year.

The calf is an 87½% brother to Aralia De Kol Mead, that holds the highest two-year-old butter record in California, 870.61 pounds butter from 16,669 pounds milk, average test 4.18. Born May 28, 1916. An outstanding individual.

Price and pedigree by request. We are sold out of serviceable bulls and you had better buy now if you need a bull for spring service.

A. W. Morris & Sons
WOODLAND, CAL.

Self-Feeders and Pasture for Hogs.

[By F. R. Steel, Grant's Pass, Ore.]

A half-fed pig is no good no matter how well made nor how well bred. If you are not going to feed your young pigs well there is no use in having good pigs—no use in having any kind of pigs at all. The two chief things that a pig must have to grow well and economically are pasture and grain. He can not do well without plenty of each. A third thing that I think he ought to have, although not so important as the first two, is skim milk.

Good pasture for pigs is provided by alfalfa, clovers, rape, peas and oats, oats and vetch, blue grass, and a number of other grasses and mixtures of these. We have found a mixture of alfalfa, clovers, and grasses the best for permanent pasture in hog lots, because it stands heavy tramping the best. Rape and turnips planted in rows and cultivated make a very good one year hog pasture. For the proper accommodation of a purebred breeding herd of hogs it is a good plan to build a series of hog pastures one-quarter to one-half acre in extent and considerably longer than they are wide. These should be laid out along a central feeding lane. One sow and her litter are placed in each lot with an individual house, a self-feeder, and a trough for wet feed in each, besides the watering device. We have found that better results are obtained by giving each sow and litter a lot to themselves. When the pigs are ready to be weaned, which will be when they are depending chiefly upon what feed they eat themselves instead of upon the mother's milk, and usually occurs when the pigs are about twelve weeks old, the sow can be taken out of the lot leaving the pigs in it until time to ship them or to separate boars from the gilts.

In comparison with the quite usual method of raising a litter practically without pasture and on slop feed alone, we conducted an experiment last spring at Winona. All the litters but one were handled in the method I have described. This one litter was raised practically without pasture and without a self-feeder, but with all the slop feed the sow and her pigs would eat twice a day. This one litter was from one of the best brood sows on the place, a sow that is one of the proved milkers and mothers that we have, and whose pigs have proved themselves large-sized, fast-growing youngsters in former litters. We then weighed each litter each week. The weights were:

Average Weight Per Pig.

Age	Pasture, Self-feeder and Slop	Slop
One month	16.0 lbs.	12.1 lbs.
Two months	36.6 "	26.9 "
Three months	67.2 "	48.7 "
Four months	98.0 "	74.4 "

This gives us a difference in the average weight per pig at four months of 26.6 lbs. or over 25 per cent. This experiment proved to our complete satisfaction that we did not want to raise any more litters by the slop feed alone method.

Pasture should be provided for the growing pigs after weaning, for the dry sows, and for the herd boars, as well as for the sows and their litters. Really first-class pasture will practically carry the sows and

boars when mature without any grain, or at least with a very small grain feed once a day. This method insures plenty of exercise too.

Grain and concentrates for hogs should be supplied liberally in a balanced ration, that is, one in which the proportion of protein to carbohydrates equals the needs of the animal—usually about one part protein to six carbohydrates, depending on whether they are young and growing, carrying litters, etc.

Self Feeders.—We have found the self-feeder one of the best and most economical methods of feeding grain to all hogs on full feed. If a proper variety is used in self-feeder the pigs will balance their own rations very well indeed, the younger ones eating a larger percentage of protein feed and the older ones a larger percentage of carbohydrate feed, which is just as science dictates should be done. The labor cost is far less with self-feeders than by hand feeding, and the pigs are sure to have enough grain.

Our self-feeders are home made, wooden affairs, made with four compartments to each feeder. In one compartment we put rolled or ground barley or ground corn, in another compartment shorts, in a third a half and half mixture of tankage and linseed oil meal, and in the fourth compartment the Lovejoy mineral mixture of one bushel wood ashes, one bushel ground charcoal, 10 lbs. common salt, 5 lbs. sulphur, 2 lbs. copers, and 1 lb. lime. We have found that tankage is the most economical protein concentrate with which to balance barley or corn, but that the addition of shorts and oil meal to the ration gives slightly increased gains. If partly grown gilts and boars begin to get too fat on a self-feeder mix alfalfa or clover meal with the grain.

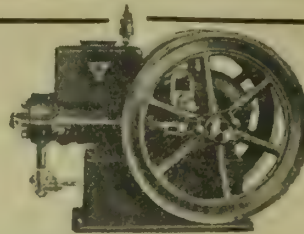
We have found that more gain can be gotten on growing pigs by the addition of skim milk to the ration than in any other way. The benefit of skim milk is out of all proportion to its protein and carbohydrate content. One reason for this is that the proteins contained in skim milk are twice to three times as efficient for growth as are the proteins of the grains. Aside from this, however, there is contained in skim milk the unknown growth element whose presence in every growth-producing ration has been conclusively proved by the recent experiments of Professor McCollum of the University of Wisconsin. Without this element—called the "Water Soluble B"—and which occurs in large quantities in skim milk and in smaller quantities in the leaves of alfalfa, clover and other green feed, but which does not occur in grains to any extent, no growth can be obtained no matter how much grain is fed. This fact probably explains the beneficial effect of skim milk and pasture which has been universally observed and which occurs, as I have remarked, out of all proportion to the nutritive elements derived from these two sources.

As a cheapener of the ration some roots—turnips, rutabagas, mangels, etc.—and field pumpkins can be used to good advantage for mature ani-

mals not on heavy grain feed. Give growing stock all they can eat of pasture and a balanced ration of grain with skim milk, if possible. Feed mature stuff all the pasture

they will eat with only a light grain ration.

Cocoa shells are being fed to cattle in a course of experiments by French dairymen.



USE LOW GRADE FUEL

BUYING AN ALPHA ENGINE means more than buying cylinders, pistons, gears, wheels, and so many pounds of iron and steel.

It means buying an engine with a personality—an engine that is guaranteed to give you the good service you expect. ALPHA ENGINES permit the use of kerosene and other cheap fuels, resulting in great economy of operation.

Stationary **ALPHA ENGINES** The World's
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to show you an Alpha Engine. Note its easy starting and smooth running. If not at your dealers, write us for catalog.

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JAMES BARN EQUIPMENT.

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The blood lines of the herd are unexcelled, the foundation stock having been secured from the Topnotch Herds of the Middle West. Sows of fine quality, yet big and roomy. The sort that have large litters of vigorous pigs.

Offering for sale a choice selection of gilts, boars and bred sows.

W. D. TREWHITT,

HANFORD, CAL.

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15 SCOTCH AND SCOTCH-TOPPED COWS AND HEIFERS.

All registered and tuberculin tested.

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Perkins, Sacramento Co., Calif.

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EL DORADO OIL WORKS,

433 California Street,

San Francisco.

Raising Poultry for Profit

SELECT POULTRY BREEDING STOCK NOW.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

This is the time of year that the breeders should be selected, especially on the farm where they have range. Haphazard hatching results in chicks that are not strong; they turn out poor layers and are unprofitable altogether. Now, in making a selection of breeders, we must either have a knowledge of how to select, or we must depend on trap nests.

The trap nest is really the only reliable information that we can have, but it must be conducted over a certain length of time to be accurate and trustworthy enough to use in selecting the breeders. December, in my opinion, is the time when we should begin to make these selections, because any hen will lay eggs in spring. Nature, at that time is urging all to propagation, and if these eggs are hatched we are just propagating the same kind. Therefore, the hens that are laying now, should be trapnested, their legs banded with numbered bands, and a record kept of what they are doing.

Number the band, write down the numbers in a book, and also on a slate, fasten the slate with pencil attached, to the wall near the trap nest. Then when the attendant goes to liberate a hen her number is taken, and she is credited with an egg. At the week-end the numbers of eggs are copied from the slate into the book, which stands as a permanent record, while the egg record on the slate is wiped off, leaving the band numbers for the coming week.

If we are trying to establish a strain of winter layers, it will be best to continue this work for one year in order to make sure that a hen capable of laying one winter has not used up all of her vitality in that one winter's effort.

After we get the hens' records for, say three months, it will be quite safe to commence to hatch from those hens having the highest records for December, January, and February. In our climate almost any kind of hen begins to lay in March, so, unless a hen had a good previous record, I would not consider her worth while to use in building up a strain of winter layers. Rather would I use pullets or young hens that had been hatched in September or November the year before, because the late laying hen, as a rule, is a good laying hen.

In these days of high-priced feed, we must make an effort to breed up for more eggs. We cannot afford to hatch from anything that lays an egg now and then as a great many hens do. I know from information I get that 100-egg hens are more numerous than are 150-egg hens. This being so we need not wonder that people do not make money in poultry. Hens that can't do better than 100 eggs in 365 days ought never to be propagated; yet I am reliably informed that a great many flocks average only a trifle over that. Even with a 150-egg record, we must feed a hen 215 days in a year for nothing. We want to get away with

the dead-heads of all kinds. All animals have to rest, but in all faith it ought not to be more than half their working time, when their food is furnished.

Under natural conditions a wild fowl lays about the number of eggs she can cover nicely; if her nest is robbed, she immediately lays another batch; thus she doubles her seeming capacity and hustles for her living at the same time. So long as we keep robbing her nest of the eggs and furnish her material for making more, I don't see that the hen has any kick coming; and if the right kind of hen is bred from, she won't kick; she won't have time to kick, because her time will be taken up in laying eggs, when eggs are out of the natural season. The idea is, don't depend on the late spring layer to hatch your chicks from, but commence right now to build for a 200-egg strain of your own; you can do it if you set about it now.

POULTRY QUESTIONS.

[Answered by Susan Swaysgood, Pomona.]

Rabbits Won't Breed.—I did not breed my rabbits in summer, thinking it too hot. About the middle of September I thought it was cool enough and wanted to breed them, but the does would not breed. What is the cause?—P. H.

I am not much versed in rabbit lore, but when any animal refuses, after being bred before, the cause is usually in the animal's condition of health. I would feed them a little higher, give them rolled barley or rolled oats, bread soaked in milk, or anything that would put more life in them. You did not say how you fed, but reason tells me that your rabbits are either too poor or too fat.

Goslings Weakened and Died.—Last spring I raised a nice lot of young goslings to about two months old, when they were getting their wing feathers. Their wings began to droop so badly that they could not raise them from the ground, and some of the goslings got so weak they could not follow the flock and would die, while some would go blind. They had plenty of green feed and running water.—P. H.

The trouble with your goslings was too much traveling. Geese are afflicted with a disease called "blind staggers." In countries where goose raising is carried on to any extent, the old geese are picketed near the water and fed. This induces the young goslings to stay in practically one place all day. Next day the old geese are removed to another section, but are never given their liberty until the goslings are strong enough to tramp around all day. It is too bad you did not confine the goslings to a certain run, even though you had to furnish a little of the feed in the form of a mash. Goose raising is a hobby with me; I love to feed them and watch them grow. If you will try next season to confine them to a limited run until they are nearly full grown, you will not lose any. Too much exercise weakens them, because grass is a diet that is not very staying in quality. If you must turn them loose, feed a good mash once a day, and they will stand it.

Dark Cornish.—Somebody asked about Dark Cornish fowls a short time ago, and I have mislaid the letter; if they will send me a self-addressed envelope, I will give them the address of a breeder, but would prefer some of our advertisers to send in an ad. if they have these good birds.

BROWN-SHELLED EGGS.

To the Editor: In a recent issue of the Pacific Rural Press the poultry editor stated that brown-shelled eggs were discriminated against. When I came to the State a few years ago I was so informed. Later, when I had charge of a butter and egg store in North Berkeley, I found that such discrimination was not justified. Of the customers who expressed a preference between a brown-shelled egg and a white-shelled egg, the ratio was at least four to one in favor of the brown-shelled egg. The great majority expressed no preference.

Hence, those who preferred a white-shelled egg were a very small minority.

I am now producing brown-shelled eggs myself and supplying private trade. Not a person has yet objected to them.

It seems to me that such discrimination is arbitrary and should cease.

E. P. Montgomery.

Walnut Creek.

Those who desire to establish alfalfa in their poultry yards can succeed by ploughing or spading under alfalfa crowns that have been freshly ploughed out from some field near by. Early in the spring is the best time, while the crowns are still dormant. The crowns should be covered four to six inches deep, and the soil wet down and kept moist, and the chickens kept off until the crowns have become established, which will be much sooner than by alfalfa seeding, and will stand much harder pressure.



Canada's Liberal Offer of Wheat Land to Settlers

is open to you—to every farmer or farmer's son who is anxious to establish for himself a happy home and prosperity. Canada's hearty invitation this year is more attractive than ever. Wheat is much higher but her fertile farm land just as cheap, and in the provinces of Manitoba, Saskatchewan and Alberta

160 Acre Homesteads Are Actually Free to Settlers and Other Land Sold at from \$15 to \$20 Per Acre

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The excellent grasses, full of nutrition, are the only food required either for beef or dairy purposes. Good schools, churches, markets convenient, climate excellent. Military service is not compulsory in Canada but there is an unusual demand for farm labor to replace the many young men who have volunteered for the war. Write for literature and particulars as to reduced railway rates to Supt. of Immigration, Ottawa, Can., or to

GILBERT ROCHE,
Canadian Gov't Exhibit, San Diego, Cal.
Canadian Gov't Agt.



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Leather is quickly affected by moisture, dirt and sweat. That's why it pays to keep your harness oiled. The oils fill the leather pores and protect the fibre. Your harness lasts years longer.

EUREKA Harness Oil

keeps your harness like new — black, strong and flexible. Ask your dealer to day.

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Poultry Breeders' Directory.

ROODEN RANCH CHICKS—January will soon be here. Back your orders now for early delivery. Barred Rocks, E. I. Reds, Black Minorcas, Brown and White Leghorns. Quality chicks from first-class breeding stock. Hatched right and shipped right—at right prices. By the dozen or thousands. We can fill it if you book in time. Circular for the asking. Rooden Poultry Ranch and Hatchery, Campbell.

BARRED PLYMOUTH ROCKS—COCKERELS—Cockerels—Cockerels—Yes, we have them; also Hens and Pullets—all bred from our Champion Winners at California's leading shows. Also hatching eggs. If it's Barred Rocks you want, get in touch with me right away. Have bred them exclusively for nineteen years. Send for Catalog. Chas. H. Voden, Box 396, Los Gatos, Calif.

BABY CHICKS NOW READY—Hatches every week. R. I. Reds, Barred Rocks, White Leghorns hatching now. Brown Leghorns and Black Minorcas later. Place Spring orders now, and be sure of getting them when you want them. Send for circular and price list. Campbell Poultry Ranch, Campbell, Calif.

WANTED—A number of hot water incubators. Jubilee preferred, 200 egg capacity or over. 220-egg type, Hoganized, S. C. White Orpingtons and Sicilian Buttercups, cockerels, hatching eggs and chicks. All information gladly furnished. M. S. Woodhams, San Mateo, Cal.

WHITE PLYMOUTH ROCK, White Leghorn Incubator Chicks. Breeding stock. Eggs high class. Scientifically bred. Awarded all first prizes. California State Fair 1916. Make your arrangements for 1917 delivery of chicks. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

CROLEY'S DRY MIXED INFANT CHICK. Feeds for twenty-five years have been California's standard feed for baby chicks. Insist upon getting same from your dealer. Manufactured by Geo. H. Croley Co., Inc., Poultry Supplies, San Francisco.

McFARLANE STRAIN White Leghorn Eggs. \$1.50 per 15, \$2.50 per 30, \$5.00 per 100. \$5.00 per 1000; chicks, 12c each, until March 1st, then 10c. Big plant, lowest prices, best stock. Catalogue free. Newton Poultry farm, Dept. 1, Los Gatos, Cal.

WHITE LEGHORN AND BROWN LEGHORN day-old chicks from healthy, vigorous breeders. "Chicks well hatched are half-raised." Will be pleased to send you our circular. San Jose Hatchery, 373 Meridian Road, San Jose, Cal.

THE SANTA CLARA VALLEY HATCHERY solicits your orders for Fall and Spring delivery in 8 breeds of baby chicks. Order early and get the best. Jos. A. Bihn, Lincoln Ave., San Jose, Cal.

HATCHING EGGS from our "Bred-to-Lay" S. C. White Leghorns. Season opens Dec. 1st. The early hatch lays the early winter egg. Booking now. B. H. Dickinson, Dept. IV, Los Gatos, Cal.

RHODE ISLAND REDS—Cocks, Cockerels, Pullets, Hatching Eggs. Blue Ribbon winners at last Oakland Show. Wm. Larm, 3915 39th ave., Fruitvale, Cal.

DAY-OLD CHICKS—These chicks are hatched from our own flock of 8,000 Utility White Leghorn Hens. George Bros., Petaluma, Cal.

BARRED ROCKS—Grand lot of high-class breeding males and pullets for sale. Satisfaction guaranteed. G. E. Tobin, St. Helena, Cal.

WHITE WYANDOTTES—Blue-ribbon winners. Eggs \$2 to \$5. Chicks, pullets, cockerels. E. W. Stawetaki, Route 2, San Jose, Cal.

HATCHED CHICKS from Barred Rocks, R. I. Reds, White Leghorns. Good stock. Send for circular. G. L. Hawley, Madera, Cal.

EASTMAN'S BRED TO LAY Barred Plymouth Rocks, Chicks, Eggs, Cockerels. Fairmead Poultry Farm, Fairmead, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. Park St., Stockton, Cal.

TURKEYS, DUCKS AND GEESE.

BOURBON RED TURKEYS and Eggs for hatching. My birds won all the honors in the Alameda County Poultry Exhibition in Oakland, 1914, and just as fine this year. A. E. Balmer, Alhambra Valley, Martinez, Cal.

INDIAN RUNNER DUCKLINGS—\$18 per 100. Choice Leghorn, Barred Rock laying pullets, \$12 dozen. Breeding cockerels, \$2 to \$5. Beaver Grove Poultry Farm, St. Helena.

WANTED—Three Narragansett Gobblers for breeding purposes. Address V. Eickhoff, R. F. D., No. 1, Lakeport, Cal.

THOROUGHbred WHITE HOLLAND TURKEYS. Toms \$5; Hens \$2.50. Old White Holland Toms, \$7.50. Pearl Guinea, \$1 each. E. A. McKinley, R. D., Ukiah, Cal.

HART'S BRONZE TURKEYS AND EGGS—Large reduction in price of stock. Order now for fall delivery. Free Circulars. Albert M. Hart, Clements, Cal.

MAMMOTH BRONZE TURKEYS—Mrs. H. B. Kimball, Farmington, Cal.

FREE BOOKS ON POULTRY

Lee's Poultry Book

Secrets of Success with Chickens
Common Sense Chicken Talks
Pointers to Amateurs
How to Read Poultry Diseases
GLOBE MILLS, LOS ANGELES, CAL.

M. M. Welton of Lodi claims to have a pen of thirty-eight White Leghorns that are record breakers in the production of eggs. Last month these thirty-eight hens produced \$24.85 worth of eggs after the Welton family used all the eggs that were needed in a family of two members.

RELIEVING IMPACTED CROPS IN TURKEYS.

An over-distended and paralyzed condition of the crop sometimes appears and is caused by overeating or by swallowing coarse and indigestible substances, such as sticks, pieces of straw or feathers, states G. W. Barnes, livestock specialist of the University of Arizona. The contents of the crop may be removed by forcing the bird to swallow a teaspoonful or more of sweet oil. Then rub the lower part of the gulf. This will soften the contents and they may then be pressed toward the head. Oftentimes this can be done quite effectively by holding the bird head down, and with constant rubbing the greater part of the material may be removed. Do not feed the bird for several hours after it has been thus relieved. If this plan and simple treatment is not successful, the crop can be opened with a sharp knife and the contents removed through the opening. Do not make the opening more than an inch in length. After doing this, wash out with clean, warm water. Take three or four stitches first in wall of crop; after this is completed, take the same number in the skin. Make and tie each stitch separately. Coarse white silk is a good material, but if not at hand, use white cotton. Feed on soft feeds for a day or so, keeping plenty of water before the birds at all times.

SODIUM FLUORID AND POULTRY LICE.

We recently printed in this department of the Rural Press an announcement issued by the Bureau of Chemistry, U. S. Department of Agriculture, that applications of small quantities of fluorid of soda would quickly destroy chicken lice of all forms. We have received several inquiries from subscribers asking for detailed methods of application. This information was not furnished in the Department's preliminary announcement. All poultry raisers who are practically interested in this new suggestion may obtain the desired information by writing direct to Washington, D. C., for the annual report of the chief of the Bureau of Entomology, U. S. Dept. of Agriculture.

POULTRY NOTES.

It does pay to keep pure poultry. Pays better in meat, in eggs, in growth, in satisfaction.

Charles Romwall of Petaluma has been elected president of the newly organized Poultry Producers of Central California.

Leghorns will lay fewer eggs when moulting than the Plymouth Rocks, Wyandottes, or Langshans. Whatever the Leghorns do they do with a will. When they lay they shell out the eggs as though they were paid for the job, and when they moult they simply moult.

The reports of the 54 associated cold storage warehouses of December 1 showed only 1,336,000 cases of eggs on hand against 2,040,000 cases the same date last year, a falling off of 704,000 cases compared with a year ago. There were loaded out of the warehouses during the month of November 881,000 cases against 1,058,000 cases to November of last year. The high prices this year having much to do with the lighter movement of eggs into consumption this year than last. The very light stocks, however, make the market situation a strong one, and the storage supply will doubtless be exhausted early in the new year.

JOTTINGS.

The kelp harvester Alicell, said to be one of the largest vessels of her kind, stranded on a rocky ledge off Point Loma at San Diego last week during a heavy fog.

It is reported that reclamation District No. 1600 in Yolo county has now almost completed its system of levees and within a year will have 6,500 acres of land ready to produce crops.

According to the biennial report of State Engineer W. F. McClure, just filed with Governor Johnson, irrigation in California dates back to the founding of the missions by Junipero Serra.

The annual report of the National Forest Administration says the receipts from timber last year were over \$1,400,000, a twenty per cent increase, while grazing receipts were \$1,200,000 and water power rentals brought in \$100,000.

One hundred and ninety-three different kinds of insects which might prove hurtful to American crops, and 116 plant diseases of similar significance were detected by State and Federal inspection during the last fiscal year on plants and plant products offered for import into the United States.

The Directors of Humboldt County Farm Bureau have named Dec. 23 as the day upon which farmers of Humboldt who expect to receive a long-time loan at the hands of the Farm Loan Association must go to Eureka and assist in the organization of the Farm Loan Board of the Humboldt County Farm Bureau.

The net weight amendment to the Federal Food and Drugs Act requires that all packages of food which are shipped into inter-state or foreign commerce must be marked plainly and conspicuously with a statement of the quantity of the net contents, either by weight or measure. Those who violate this law are liable to criminal prosecution.

The Secretary of Agriculture, in his annual report for the fiscal year ended June 30, 1916, says the decline in beef production reached its lowest point in 1913, and that since that time there has been a very material increase in the number of swine since the census year 1899. The number of sheep has continued to decline, but only to an extent.

A scheme is under consideration in Sydney, New South Wales, for the erection of elevators in the city and country. The Sydney elevator will have an initial storage capacity of 3,000,000 bushels, but will be extended later to hold 15,000,000 bushels on a basis of a 40,000,000-bushel export crop, a conservative estimate of the probable saving per annum is \$3,835,000.

To determine the nature of the soil types in portions of Mendocino county that local farmers may be assisted in adapting crops to soils, the Bureau of Soils in the U. S. Department of Agriculture, co-operating with the University of California Agricultural Experiment Station, has made a soil survey of the Ukiah area of the county. The report of this survey just published by the Department contains a soil map of the county, on which farmers may find the approximate location of their farms, and 53 pages of text, describing the various soils, discussing their capabilities, and suggesting means for utilizing them to better advantage.

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Personal advice on all poultry matters. I guarantee to increase the egg yield, the health and vigor of the flock, shorten the molt and prevent disease if you follow the advice. \$1.00 for advice and formulas.

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California Poultry Practice

A Practical Treatise on Poultry Raising in California

By Mrs. Susan Swaysgood
Writer and Breeder
Of Utility Poultry.

160 pages of text, besides many full-page illustrations. Cloth bound.

This Book Will Help You in the Many Details of POULTRY RAISING.

In writing this book, the author, after a lifetime of active, practical and successful experience in poultry raising on the Pacific Coast, has endeavored to show the farmer how he can make the poultry department of his business more profitable. It deals with actual conditions—not theories—and covers every phase of the industry from eggs, chicks, disease and remedies to the profitable marketing of the products of the poultry farm.

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34x3½	10.95	2.30	2.55
36x3½	12.05	2.40	2.75
38x4	13.20	2.50	3.10
31x4	13.85	2.85	3.20
32x4	14.05	2.95	3.30
33x4	14.70	3.10	3.40
34x4	14.95	3.15	3.50
35x4	15.65	3.20	3.60
36x4	15.85	3.30	3.70
34x4½	20.25	3.85	4.30
35x4½	20.85	3.95	4.35
36x4½	21.25	4.10	4.50
37x4½	21.90	4.15	4.60
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Mrs. Best's Letter.

My dear Friends:—I have seen some very attractive suits for motoring the last week. One was of sage green duvetyne, with full skirt edged with a two-inch band of moleskin. The coat was a Russian blouse model, edged with the fur and having a belt of soft clored embroidery.

The hat to wear with this suit was a touque of moleskin with a soft crown of colored embroidery. A small muff of the same fur completed a very trim, good looking suit.

Another attractive suit was of a tweed mixture with the skirt of five gores with an invented pleat in the back. The coat was a Norfolk model with collar and cuffs of fur. To wear with this, was a stitched Alpine hat of the same cloth with a gay pompon at one side.

Extra coats are much in demand at this time of year and they should be generous enough to slip on over a suit coat. The coats with the raglan sleeves are especially good for that, particularly if made with an invested pleat in the back and under each arm. The convertible collar is another good feature in the winter coats.

For the woman who drives her own car, the white washable kid gloves with snug wristbands are the most practical. The better shoe shops are showing a shoe protector made of patent leather, to strap around the ankle to protect the shoe when driving.

There is a new suede case on the market that is a combination of veil case and vanity outfit. It is about ten inches long, has a flat place for veils and the vanity outfit is on the other side. It swings from the wrist by a strap.

Soft little hats of corduroy are delightful for motoring, for they may be pulled down on the head almost like a cap and do away with the necessity of a veil.

The streaming veils of light chiffon are not worn as much now as formerly—most women who ride a great deal have small hats and face veils fastened snugly over them.

Rosabella Best.

A SPARE LEG.

Jones was old-fashioned and stuck to old-fashioned ways. Smith was modern and bought a fine new automobile. One day he was proudly exhibiting it to some friends when Jones came along.

"Um," remarked Jones, as he sized up the handsome machine. "What's that thing on the side?"

"That's a spare rim and tire," answered Smith. "We always carry an extra one in case one of the wheels goes wrong."

"Just as I always said," was the response of Jones. "I've driven hosses for nigh on fifty years, and I never had to carry a spare leg for one of them yet."

JUST SO.

"Stop, look, listen."

The reflective man stopped to read the railroad warning.

"Those three words illustrate the whole scheme of life," said he.

"How?"

"You see a pretty girl. You stop. You look. After you marry her you listen."

THE HOME CIRCLE

We wish you all a Merry Christmas and a Happy New Year!

DISTRIBUTION OF GIFTS.

Nothing is any more interesting to small children than the hanging of the stockings by the fireplace the evening before and the early rising the next morning to see what Santy brought.

But for a family reunion where there are many gifts to distribute, other methods may seem more attractive.

A Santa Claus shop is a novel idea and can be worked out with material from old dry goods boxes. If one corner of the room is used, you will need one wall and a roof with a counter in front. This should be decorated with cotton and green boughs and a plentiful use of red crepe paper, both inside and out. Use garlands of popcorn, and any glittering ornament suitable for Christmas tree use.

The name "Santa Claus Shop" should hang in front and be surrounded with tinsel, Christmas bells and evergreen wreaths. A jolly Santa Claus behind the counter gives the finishing touch to a very attractive arrangement.

If the party is small, a big cobweb of string that must be untangled and each string followed to a hiding place where the gift will be found affords lots of amusement.

A Christmas grab bag, which is just what the name implies, is good for a Christmas party, where fun and frolic are of more consequence than the value of the gifts. Each article should be securely wrapped and should be of small value.

THE DINNER TABLE.

The centerpiece for the table may be one of the artificial Christmas trees now so popular and so cheap or it could be a star made of holly leaves with holly berries.

A big snowball made of cotton and covered with diamond dust makes an attractive center piece. From it should extend streamers of red ribbon or red crepe paper across the cloth to each place.

Polished red apples in a basket or glass dish can be surrounded by a wreath of green, or a big bouquet of holly berries by itself is an ideal center piece for a Christmas dinner.

Some of the 5 and 10 cent stores show papier mache figures of Santa Claus with a pack upon his back, that would thoroughly charm the children of the household.

Red is the dominant color for Christmas decorations and should be used on the table in some form or another.

Crystal candlesticks with hed candles are very pretty and help carry out the red decoration scheme.

Nut cups made of red crepe paper with a bit of holly tied to the handle are easily made and so effective.

If the holly is not used on the nut cups, a little spray at each place makes a pretty note of color and can be worn by each guest. The artificial holly is really prettier than the real article, and if cared for, can be used over and over again.

For more elaborate table decorations, red tulle is most desirable, used for bows on baskets or candlesticks or as streamers from an overhead light to the four corners of the table.

THE CHRISTMAS DINNER.

The country housewife has a great advantage in the matter of supplies when it comes to preparing a Christmas dinner.

Home-grown fruits, vegetables, fresh eggs, milk and fowls which are right at hand are luxuries her city sister pays dearly for.

In order that Christmas morning may not be overcrowded with responsibilities, preparation for the dinner should begin several days in advance.

The turkey, goose or chicken should be dressed and put one side while the dressing may be prepared all but adding the liquid and filling the bird.

Mayonnaise dressing and cranberry sauce can be prepared days before

before, lettuce can be washed and put in a pail to crisp, while both mince pie and plum pudding are better for the re-heating. With all these things ready, the housewife will have

more time to devote to the jollity of the occasion and a freed mind for guests.

Following is a menu prepared by a noted Domestic Science teacher which may present some new ideas:

Consomme Bread Sticks
Roast Goose Spiced apple sauce
Potatoes in half shells Cauliflower
Grape fruit salad Salted crackers
English Plum Pudding

Brandy Sauce

Salted almonds Bonbons

Black coffee

TRIMMING THE TREE.

In some households, the children are not permitted to see the Christmas tree until time for the distribution of gifts, but if a child is old enough to understand the origin of the gifts, they will usually enjoy helping dress the tree more than they enjoy the surprise.

If possible, use the asbestos snow instead of cotton, the danger of fire from lighted candles is much less.

Strings of popcorn are always good, but large kernels fastened on by a pin give more the appearance of snowflakes.

Tiny baskets of different colors filled with small candies make pretty ornaments and later can be used as gifts for the children who come in to admire the tree. The penny

Floral Department.

[By Geo. N. Tyler.]

As there is not much to do in the garden in this cold and damp weather, I have failed to write an article for three weeks, as I did not care to repeat.

In starting the floral corner I did not know how it would be received, so did not go about it in a systematic way from the start; but as I find it is well received and in fact looked for by quite a few, I will now go back to what I consider the beginning, and at the first of the year take up the plants, etc., as their season arrives—both outside and greenhouse plants—and try and give, as far as I am able, the correct way to start, grow, and care for them, so that my articles can be used for future reference by those who care to cut them out, date and preserve them. The main thing I consider is the correct soil the different plants require. In fact the main secret in growing plants successfully is the soil. I will start with soils and composts.

The principal soils used in gardens, either alone or mixed, to form what are called composts, are loam, sand, peat, leaf mould and fertilizers, and various mixtures and combinations of these made up to suit the different subjects under cultivation.

Loam is the staple soil for the gardener. It is not only used in the pure and simple state but enters into most of the composts prepared especially for plants. For garden purposes loam should be rather soapy or greasy to the touch when moderately dry, not clinging nor adhesive, and should readily crumble when a compressed handful is thrown to the ground. Loam which contains much matter (iron) should be avoided. Sand is by itself of little value except for striking cuttings, for which purpose, fine, clean, sharp, silver sand is best. River sand and sea sand, if the salt is thoroughly washed out, is also good, and may be used, both for propagating purposes and for mixing in composts. For the growth of pot plants sand is an essential part of most composts, in order to give them the needful porosity to carry off all excess of moisture from the roots.

Peat is largely used in the culture of orchids and ferns, but as I am not going into orchids in these columns, I will not further describe it.

Leaf mould is suited for the growth of many free-growing plants. In any state most plants feed greedily upon it, and when pure and free from decaying wood or sticks, is a very safe ingredient in composts. For quick growing plants, as, for example, most annuals cultivated in pots, such as balsams, colias, combs, etc.

(To be continued.)

PRAULINES.

Mix together one cupful powdered sugar, ½ cup maple syrup, ¼ cup of cream and a few grains of salt. Bring to the boiling point and let boil until a soft ball can be formed in cold water. Remove from fire and beat until creamy. Add 1 cup cut walnut meats. Drop from tip of spoon in oblong piles on buttered paper.

CHRISTMAS CAROL.

Oh, ring, glad bells, clear and sweet!
The winds your echoes shall repeat,
And in each heart shall glad
thoughts swell

Responsive to the Christmas bell.
For years ago on Judea's plain
Was born our Lord as King to reign
First star in heaven's bright diadem,
The blessed Babe of Bethlehem.

Be glad, oh earth, on Christmas
night.

Be clad, oh fields, in spotless white.
Let hearts put by the care that
frets;

Cast off all vain and sad regrets;
And in the holy Christmas tide,
Draw nearer to the Savior's side;
To him who died for us, and them
Who hailed him King of Bethlehem.

The song the angels sung on earth
In honor of the Savior's birth
Will we repeat on Christmas eve,
And as we sing may we believe
That "Peace on earth, to men good
will,"

The angels sing on Christmas still.
So ring, glad bells, the while we sing
In praise of Jesus Christ, our King.
—Eben E. Rexford.

SANTA CLAUS IN SEARCH OF A HELPMATE.

He's reached home tired, chilled,
and hungry, to find his wee cottage
dark and his fire nearly gone out.

"I'll just have to get myself a
helpmate," mused he, with a gusty
sigh,—he was well aware really,
truly helpmates do not grow on
every bush!—as he raked the gray
embers into ruddy glow and filled
the kettle, "and that right soon, too,
so's she can give me a bit of a lift
next week. I wonder, now, where did
I put that 'How to Choose Her' Dan
Cupid sent me for my birthday?"

While waiting for his kettle to
boil, he rooted the small volume in
question out from where it had slipped
behind his pile of summer night
caps, and spent from tea till bed-
time studying it with so much ad-
vantage that he was able to add to
the long string of Nellies, Edwards,
Claras, Tobys, and addresses adorn-
ing his little red note-book the fol-
lowing memoranda: "She must be
industrious, but not fidgety; she
must be indulgent, but not extrava-
gant; she must be spry, but not
heedless; she must be capable, but
not bossy," and above all things she
must just love her job." Then he
shut up his books and went to bed.

All next day he kept his shrewd
though merry eye upon the throngs
of women, all shopping and other-
wise preparing for the Day; from
them he singled out four for a closer
scrutiny; and from these four he
was now making his final selection.

All one long forenoon he followed
—unknown to her and at a good
safe distance—the serenely smiling
Aunt Sadie as she skimmed from
shop to shop, closely consulting and
rapidly filling out the long list she
was carrying about with her.

"How very spry she is!" chuckled
Santa, and thought he'd found his
helpmate already, when the swift
shopper suddenly cried out in dis-
may: "Why, here 'way back in my
reticule, is another list which I had
quite forgotten; so now I'll have to
begin all over again, and my money's
almost gone, too!" Once more she
burrowed into the crowd besetting
the dressed doll table.

"She's not the one for me!" sput-
tered Santa, "heedless creature!
Supposing—just supposing—she was
to mislay lists and neglect children
when working with me!" and he at-

tached himself closely (but entirely
unbeknown) to Cousin Flora, who
just then came hustling in. She also
was poring over a long list and won-
dered—while tapping the counter
with a reflective pencil—whether
she could afford that rocking-horse
for Richey and Drusilla's longed-for
doll. "They want them," she con-
cluded, "and shall have them, the
darlings; and Phil shall have his
fiddle, and Polly her pat-a-pans,"
and went right at it, ordering things
till the delighted Santa was just
about stepping forward to ask her,
"Won't you?"—when he overheard
the rash purchaser telling the pa-
tient young woman behind the count-
er "just to charge these few, I hav-
en't money to pay for them; and
send the bill!"

Shocked beyond expression, San-
ta hurried out of the shop, declaring
from under his long beard, "She
won't do one little bit, for all she's
so anxious to give 'em what they
want! Fancy me with bills coming
in to be settled 'way on into the New
Year!"

Next morning he peeped in on Sis-
ter Maria, who, though it was still
very bright and early, was busily do-
ing up things in holly paper, and ty-
ing them up with poinsettia-decorat-
ed baby ribbon, giving the latter an
occasional vicious jerk when, as will
happen, they snarled up a bit.

"Now, she's a wonder and just
about right," crowed Santa, raising
his hand to the door-bell, when he
heard a sharp snappy "Dear me! I
wish Christmas and all its bundles
and buyings and wrappings were
over and done with for good!" which
so scared him that he crossed the
street on a run and rushed into the
little red brick church where Aunt
Sophy was seated among a lot of
young folk, all busily stringing pop-
corn, and filling bon-bon boxes,
while a lot more were standing on
ladders and chairs trimming a tall
and beautiful Christmas tree.

"She's the one! Aunt Sophy's the
very, very one," laughed Santa,
rubbing his hands in glee, "so full
of taste, so neat; so quick to see
what's needed and where, so quick to
know just what to get and just
where and how to place it. She's just
the one I need to help me with work,
and I'm going to ask her to name the
day!" and Santa stepped forward
and had just opened his mouth to
say "Sophy, dearest," when that
energetic person waved him back
with an imperious white hand.

"You're way ahead of time," she
called out, "and we're not nearly
ready for you! Don't stop to talk,
but go right back, and don't you
come rushing in again until I ring
the bell for you!" and, as the dis-
comfited Santa turned and fled, he
heard Aunt Sophy's strident voice
instructing two young men and a
small boy to "take that all right
down again, and loop it up in this
way."

He never stopped running till he
got to the church wall, upon which
he sat down to wipe his heated face.

"What an escape!" he gasped,
"oh-h-h-h-h, what an escape! What
would I be doing with one hectoring
my poor elves and fairies, and boss-
ing me—Me! and here it's most
Christmas, and I've been wasting the
precious days and have no helpmate,
after all!" and Santa shook a deep-
ly dejected head.

Suddenly he sat up and sniffed
and sniffed.

"What is that delectable smell,"
he muttered "it's not cookies nor
spice-cake nor gingerbread, but a
bit like all three of 'em all rolled in-
to one. I know," he shouted slapping
his knee, "it's German Christmas
cakes, and those weird and wonder-
fully decorated lebkuchen I'm smell-
ing; and I'm going to follow that
smell and see where it leads me!"

It drew him into a bit of a house
directly opposite, up two rickety
stairs and into a small and plainly
furnished room, as neat as wax. The
cakes were there, sure enough; pep-
pernuts, honey-cakes, anise stars,
and gingerbread animals and brown-
ies, gay with pink and blue and
green and yellow icing and knobby
with almonds and citron, and sitting
close by, contentedly making ging-
ham frocks for two indestructible
dollies, sat a small, elderly, red ap-
ple-cheeked lady.

"Ach, liebster, bester Santa
Claus," said she greeting him with
outstretched hands. "How very, very
glad am I to see you! Sit down and
try my Christmas cakes—they're not

bad, nicht wahr?—and these other
things I'm making for your Christ-
mas stockings. Will they do?" And
she spread out before him wristlets
and muffetees, penwipers and mit-
tens, book-marks, doll-caps, and
needlebooks all beautifully home-
made of worsteds, scrap of silk, and
bits of ribbon.

"Do!" cried Santa; "well, I should
just think they would! They're just
precisely what I need for filling the
chinks in the stockings. But don't
you want 'em yourself for your own
folks?"

"Ach, nein," sighed the little lady,
"my sons and daughters have quite
altogether outgrown Christmas, and
the children of the neighborhood for
whom I made things and trimmed
trees have moved far, far away. So
take them all, dear Santa, and let
me feel that I am helping along a
bit."

"All this saving and planning and
sewing and baking," exclaimed the
puzzled Santa, "for children you
neither know nor care for; all this
work and bother!"

"Oh, but I do care for them very
much, for the children," answered

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the little lady; "and I love the work and what you call the bother. I love to make things and bake things and just to soak myself in Christmas smells and sounds and sights. Why, Santa dear, you cannot know how I love Christmas and everything that goes with it."

"Affectionate, industrious, and quicker'n a wink!" deliberated Santa, "she's all that and more, too, and, moreover, dead in love with her job!" Whereupon he then and there secured the little elderly lady for his helpmate; he carried her (and her cakes and Christmas contributions) back with him to his wee cottage which ever since has been warm and bright and cosy for him and his helpmate.—Kate Hudson.

Good Health.

[By H. E. Pastor, M. D.]

Sleep.

We all like to sleep, but we like to enter the sleeping state with a pretty positive assurance of waking up again. The sleep that knows no waking has no allurements for the average wooer of Morpheus. Poets, scientists, visionaries, and psychologists have, many of them, exhausted themselves on the subject of sleep, but have far from exhausted the subject itself. It is ever a fascinating and puzzling theme of speculation. While poets have raved over it in meter and the seer has used it in mystic symbolism, the scientist has been studying it cold-bloodedly and trying to correlate its phenomena with other phenomena of a more or less material and explicable kind. But though the scientist has thrown much light on this interesting phase of our existence, his explanations of the phenomenon never exactly explain to the satisfaction of the eager inquirer.

We are told by these scientists that there is a lessening of the blood flow to the brain during that period of unconsciousness of semi-conscious we call sleep; but whether this diminished blood flow to the cerebral centers is the cause of sleep, or merely an accompaniment, is still an open question. We are also told that during our waking hours certain toxic products resulting from the breaking down of the minute cells which form the different tissues of our bodies poison the nervous cells forming the centers of consciousness, exerting a sort of paralyzing effect on them, which produces the condition we call narcosis, or sleep.

The chances are that the sleeping and waking states are part of a natural rhythmic order that seem to pervade all cosmic processes. Suns light up and then die down, seasons of heat alternate with seasons of cold, darkness follows light, and light follows darkness in the diurnal revolution of our planet, plants have their seasons of activity succeeded by a season of dormancy; likewise the brain has its period of active functioning followed by its period of torpor. It is probably inherent in us, and is no more explainable than why we eat, why we think, why we love, why we live at all. Even our Lord rested after a period of six days' toil, and no amount of physiological dissertation could explain to us why this was necessary. The principle of alternating periods of activity and

rest was probably impressed on creation in the beginning, and defies human scrutiny.

Anyway, we have learned, a few things about sleep whether these things do us any good or not, and a few of the things we have learned are these:

(1) As a prelude to sleep, there is a change in the composition of the blood flowing through the capillaries or minute blood vessels of the cortical or outside cells of the brain, where the centers of consciousness reside. The blood-vessels then convey to the brain a larger proportion of the waste or toxic products of the body, and less oxygen; and the toxic effect is expressed by the sense of fatigue.

(2) The blood circulation slows down, causing the cells of the cerebral cortex to become less active.

(3) During sleep, however, conditions are reversed. About double the amount of oxygen is carried to the brain by the blood current that is conveyed there during the waking hours. The accumulation of waste products is rapidly carried to the excretory organs and discharged, and the process of repair or recuperation goes rapidly on.

(4) The benefit derived from this constructive process is proportioned to the depth and intensity of the sleep rather than to its duration.

Muscular labor is more conducive to sleep than is mental labor, because there is a determination of the blood from brain to muscle, and because the toll involved in muscular labor is more onerous and exhausting, which calls for a longer period of recuperation and more profound repose.

These few remarks on sleep are merely intended to make more intelligible a practical hint or two on the subject of sleeplessness, which will be given in the next issue, as our allotment of space has petered out.

To Get Rid Of Warts.

Can warts be removed? Yes, commonly they can. Soften the wart by soaking in water for awhile and apply a few drops of oil of cinnamon. Do this repeatedly and some day when you go to apply the treatment the wart will not be there. "It folds its tent like the Arab and as silently steals away." If this advice (which the writer has frequently tried with success) is too commonplace and homely, the following looks more professional, and is really pretty good:

Take Sulphur sub. 5 oz.
Concentrated acetic acid. . 2½ oz.
Glycerin 2 drams
Make a paste and apply to the warts on small pieces of linen or spread with a brush at night. Wash off the next morning. Repeat till the warts drop.

Don't Lose It Before You Value It.

People love to talk grandiosely of the "main issue of life," and usually put forth some pet and petty hobby as about filling the bill. Being ourself somewhat of a hobbyist, and inclined to the worldly view of things, we here set forth the belief that the conservation of personal health is the main issue with each individual, for without a modicum of good health most other advantages of mundane existence go a-

For every home

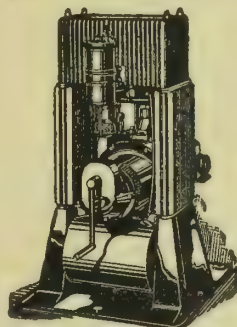
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San Francisco, Dec. 20, 1916.

WHEAT.

While the Eastern market shows extreme sudden fluctuations from day to day, due to the effect of peace talk on speculative conditions, the local market shows little change, failing to reflect even northern changes very promptly. Local trading, in fact, is extremely quiet, owing partly to the holiday season, and partly to the fact that, while buyers demand lower prices, holders take quite a firm view. [First-hand prices on strictly first-class grain, San Francisco.]

Sonora wheat	.....	\$2.75@2.80
Northern club	.....	None offered
Calif. club, cti	.....	2.60@2.65
Northern Bluestem	.....	2.80@2.90
Northern Red	.....	None offered

BARLEY.

Business is dull, with a considerable tonnage sold for shipment but awaiting cars, while local requirements are well supplied. Values appear fairly firm.

Seed, cti.	.....	2.50
Shipping, cti.	.....	\$2.35@2.40
Choice feed, cti.	.....	2.20@2.30

OATS.

A few more Texas reds are coming in, with a fair demand for seed. The market, however, shows the usual holiday quiet, and values are unchanged.

Texas Red seed, cti.	.....	\$2.85@3.00
Red feed	.....	1.80@1.85
White	.....	2.15@2.20
Black seed	.....	2.50

CORN.

Very little Eastern corn is appearing, but with an easier feeling in the primary markets, California yellow is quoted considerably lower, a good deal of it being offered. Samples of Milo are shown, but are generally held far above buyers' views.

[First-hand prices on strictly first-class grain, San Francisco.]

Eastern Yellow, cti	.....	None here
California	.....	\$2.25@2.35
Milo Malze	.....	2.10@2.25
Egyptian, new	.....	2.25@2.35

BEANS.

The usual year-end quiet prevails, with buyers devoting their attention to holiday affairs, while a good many sellers are anxious to clean up odds and ends, and are shading prices on several varieties. Thus most colored beans—bayos, cranberry beans, pinks and blackeyes—have been marked down a little. However, this indicates no underlying weakness, as supplies still available in the State are much less than usual at this season, and a renewed demand is expected later on. There is still a fairly large supply of limas in the South, but they have been moving well, and prices show another slight advance. The prices quoted are for uncleaned stock of average quality, extra dirty lots being lower.

[On wharf, San Francisco.]

Bayes, per cti.	.....	\$5.50@5.75
Blackeyes	.....	4.75@5.00
Cranberry beans	.....	6.50@6.55
Horse beans	.....	3.25@3.50
Small Whites (south) new crop	.....	7.00@10.50
Large Whites, new crop	.....	8.10@9.50
Pinks	.....	6.00@6.75
Limas (south)	.....	7.75@7.90
Red Kidney	.....	9.00@11.00
Mexican Reds	.....	6.50@6.75
Tepary beans	.....	5.90@6.00

SEEDS.

There is little activity at the moment, but alfalfa seed has been moving off well, and guaranteed stock is slightly higher. The other lines quoted receive little attention now, and vetch and mellotus indica are easier, while mellotus alba is cleaned up.

(Ton lots or over, to planters, S. F.)		
Alfalfa, per lb. (guaranteed)	.....	19@21c
Oregon Vetch	.....	4@4½c
Mellotus Indica	.....	5@8c
Mellotus Alba	.....	Nominal
Bur clover, re-cleaned	.....	12½c

HAY.

Local arrivals show further curtailment, and supplies are hardly sufficient for requirements, though so far actual needs have been met by working off surplus supplies in local barns. Most of the hay now arriving is of the better grades, and there is quite a strong inquiry for cheaper grades, causing a very firm feeling as to prices. A good many large buyers are getting into the market for stock hay. Prices here are governed mainly by lack of cars, as there are still liberal stocks at many outside points. According to local dealers, the average arrivals here last month from Southern Pacific points were six cars a day. It is estimated that an unusually large acreage will be planted for hay this season.

[Prices per ton, carload lots, San Francisco.]

Wheat, No. 1	.....	\$16.00@18.00
No. 2	.....	14.00@16.00
Tame oats	.....	13.00@16.50
Wild oats	.....	13.00@15.00
Alfalfa	.....	12.00@15.00
Stock hay	.....	10.00@13.00
Straw, per bale	.....	.60@.80

FEEDSTUFFS.

Alfalfa meal is kept well cleaned up, and is now moving at \$21 to \$22 per ton. Dried beet pulp is scarce, with holders asking as high as \$31, though few buyers will pay that price.

POTATOES, ONIONS, ETC.

The potato market is a little easy, as the heavy Eastern movement of Oregon potatoes that started some time ago has been checked, throwing larger supplies to the Coast. Some holders with large supplies are endeavoring to boost the market, but there is no real strength, and Delta stock is a little lower. Onions remain steady, with all stock closely held in storage. There is a heavy local

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
Prices Quoted as Paid to Producers.

movement of Delta celery at firm prices.

Lettuce, L. A., crate	.....	.50@1.00
Sacramento	.....	.75c
Celery, Delta, crate	.....	\$3.00@3.50
String Beans	.....	10@17½c
Lima beans	.....	10@12½c
Peas, lb.	.....	5@12½c
Tomatoes, lugs, L. A.	.....	1.00@1.25
Rhubarb, lugs	.....	.75@1.00
Potatoes, cti, Delta	.....	2.00@2.10
Salinas	.....	2.40@2.60
Oregon	.....	1.90@2.25
Onions	.....	3.00@3.25
Garlic, new crop, per lb.	.....	3@4c

POULTRY.

While the high prices at Thanksgiving curtailed the demand somewhat, leaving a hold-over at the close, it is expected that the Christmas market will close quite firm. So far supplies have not been excessive, and all offerings are moving rapidly at full prices. Chickens, though in good supply, move well, and several lines are higher. There is quite a large demand for geese. Belgian hares are slightly lower. Turkeys, dressed, large, lb. 23@30c
Turkeys, live, lb. 25@26c
Broilers, 18 lbs. to doz. and less, lb. 26@28c
do, over 18 lbs. to doz. 23@25c
Fryers 22@23c
Hens, extra, per lb., colored 20@21c
Small leghorn 17@18c
Smooth Young Roosters, per lb. (3 lbs. and over) 22@23c
Squabs, per lb. 38@40c
Geese, per lb. 17@18c
Old 17c
Belgian Hares 12@13c

BUTTER.

The recent decline in prices has attracted attention in the East, and there has been considerable buying for shipment, causing the market to stiffen a little the first of the week, though it has receded somewhat since. The shipping business, however, will be against any further decline.

Thurs. Fri. Sat. Mon. Tu. Wed.						
Extra	.....	33½	33½	33½	34½	34
Prime 1sts	.....	33	33	33	33	33½
Firsts	.....	32½	32½	32½	32½	32½

EGGS.

The close of last week brought quite a strong local holiday demand, as well as some shipping business to distant markets, which cleaned up all offerings closely and caused a sharp advance Monday. Demand since then has been less active, however, and with production increasing prices have fallen back.

Thurs. Fri. Sat. Mon. Tu. Wed.						
Extras	.....	39	30	39½	43	39½
Sel. Pul.	.....	35	35	35	36	34

CHEESE.

All grades are cleaning up very well, with some outside business and a little extra holiday demand. Both flats and Monterey cheese are higher.

[S. F. Dairy Exchange prices.]

Y. A. s fancy	.....	19½c
Fancy Calif. Flats, per lb.	.....	18c
Monterey Cheese	.....	19@20c

DECIDUOUS FRUITS.

Supplies of cranberries are rather in excess of requirements, causing a sharp break in prices. Local apples are moving off well, most of the Newtowns now being taken out of storage, and only a few cars remain in the country, with prospects that everything will clean up in good shape in the spring. Northern apples are fairly firm. Cranberries, Cape Cod, bbl. \$9.50@10.00
Apples:

Christmas apples, box	.....	\$2.00@2.25
Bellflower, box	.....	1.00@1.10
Newtown	.....	.90@1.10
Pears, Winter Nellis	.....	2.25@2.75
Persimmons, box, dbl layer	.....	.65@.90

DRIED FRUITS.

The primary market is very quiet in all lines, as attention is now concentrated on the retail movement. In view of the generally large consuming demand, however, it is expected that inquiries for additional supplies in consuming markets will begin to appear early in the new year, and everything in packers' hands is firmly held. Growers have no very large holdings in any lines, and are exceptionally well sold out for the end of the year in the principal varieties. The outlook, accordingly, is favorable for a firm market, with possibly a slight advance on desirable stock, from now until the new crop comes in.

[Net to growers, bulk basis, f. o. b. shipping point.]

Apples, new crop	.....	8 @ 8½c
Apricots, per lb. 1916	.....	15 @ 16c
Pigs, white, 1916	.....	None offered
Plum, blk.	.....	5½ @ 6c
Calimyrnas, 1916	.....	None offered
Prunes, 4-size basis, 1916	.....	6½ @ 7c
Pears	.....	8½ @ 7c
Lake County Pears	.....	11 @ 12½c
Peaches	.....	7½ @ 8c

HONEY.

A few scattered lots are still being shipped out of the country, but most of the crop is cleaned up. Local supplies are very moderate, with the cheaper grades in good demand, and prices are well maintained.

Water white, comb	.....	13@14c
Amber	.....	8 @ 9c
Light Amber	.....	10@12c
Water white, extracted	.....	None offered
Light amber	.....	6 @ 7c
Dark	.....	5 @ 5½c

HIDES.

The peace talk has had a rather demoralizing effect on the hide market, causing a decided slump, and prices are so irregular and subject to fluctuation that it is impossible to give quotations with much assurance of their validity from one day to the next.

A good many interests are holding off from the market entirely until conditions settle, and others will only take hold at figures attractive to them.

Steers	.....	21 @ 23c
Cows	.....	21½ @ 23c
Light hides, 25 to 48 lbs.	.....	21½ @ 23c
Kip	.....	25 @ 24c
Calf and veal	.....	31 @ 32c
Dry Hides	.....	32½ @ 33½c
Dry Kip	.....	35 @ 36c
Dry Veal and Calf	.....	38 @ 40c
Pelts, long wool	.....	\$1.75@1.90
Short wool	.....	.85@1.10
Horse hides, wet, large, ea.	.....	5.00@5.50
dry, large	.....	3.00@3.50

HORSES.

As usual around the holidays, there is very little doing locally in work stock, as few drafters are coming in and buyers are taking little interest. A rather unusual offering here this week is a good-sized lot of saddle horses, brought from the Sacramento Valley.

Drafters, 1700 lbs. and up.	.....	250
Drafters, 1550 to 1650 lbs.	.....	150@200
Chunks, 1350 to 1500 lbs.	.....	150@175
Wagon horses, 1050 to 1350 lbs.	.....	110@150
Green Mountain range horses, 950 to 1200 lbs.	.....	20 @ 75

GROCERIES.

Sugar has been marked down twice in the last week, being quoted on the granulated basis of \$7.05.

Special Citrus Market Report.

Los Angeles, Dec. 19, 1916.

Shipments of oranges from Southern California from November 1 to December 17 were 2,152 cars of oranges and 641 cars lemons against 928 cars of oranges and 631 cars lemons the same time last year.

Shipments of oranges from Central California from November 1 to Dec. 15 were 3,048 cars oranges and 95 cars lemons, against 2,821 cars oranges and 51 cars lemons the same time last year.

Shipments of oranges from Northern California from November 1 to December 15 were 729 cars oranges and no lemons, against 423 cars oranges and no lemons the same time last year.

With the market better supplied the market the past week showed weakness, yet the best fruit sold very well and brought paying prices. The oranges coming forward are well colored and testing very well. The shipments so far are much ahead of this time last year and the weakness noted must be ascribed to this increased movement to market. Lemons were also weaker and the market lacked life and in some instances were lower.

Locally the market was hardly so active as the week before, the trade being pretty well stocked up for the time being. Hence local packers were bidding lower both for oranges and lemons. The larger sizes of new navels were in very fair request, but small sizes were dull. Grapefruit steady and in fair demand. Packers were bidding 1c per pound for oranges in the grove, 2@2½c per pound for grapefruit in the grove. Lemons 1@

1½c per pound in the grove for good stock. Poor stock has to be sold for what it will bring. Weight of oranges, loose box, 50 to 55 pounds; grapefruit the same. Lemons, loose box, 55 to 60 pounds.

EASTERN AUCTION MARKETS.

New York, Dec. 13.—Twelve cars California navels, one car Arizona navels and one car California lemons sold. California navels higher, especially small sizes; Arizona slightly higher. Lemons unchanged. Weather fair. Navels averaged \$2.10@3.15. Arizona navels averaged \$2.60.

Boston, Dec. 13.—Seven cars sold. Market doing better on oranges and lemons. Navels averaged \$2.75@3.25. Lemons averaged \$2.35@2.75.

Philadelphia, Dec. 13.—Five cars sold. Market lower on navels, unchanged on lemons. Navels averaged \$2.75@3.25. Lemons averaged \$2.65@3.00.

New York, Dec. 18.—Twenty-five cars of California navels, one car Arizona navels, two cars California lemons sold. Navels steady on best stock, all other grades lower. Lemons steady on 300s but easier on 360s. Weather fair. California navels averaged \$1.85@3.25. Arizona navels averaged \$2.75@3.45.

Boston, Dec. 18.—Nineteen cars sold. Market easier on oranges and lemons. Navels averaged \$2.10@3.10. Lemons averaged \$1.85@3.20.

Philadelphia, Dec. 18.—Nine cars sold. Market higher on navels and doing better on lemons. Navels averaged \$1.65@3.00. Lemons averaged \$1.65@2.75.

LOS ANGELES.

Los Angeles, Dec. 19, 1916.

BUTTER.

Receipts of week ending Dec. 19, 1916—263,200.
Receipts of week ending Dec. 19, 1915—218,910.

The butter market rallied a little the past week under more moderate receipts, and demand fairly good for all extra creamery, and there was a better movement in prime first. While the consumptive demand was very good, the outside movement was light. In San Francisco the market also made a little improvement. Fresh extras advancing 1c up to Monday and Chicago improved the same, while New York is 2c higher than a week ago. All this had a sympathetic influence upon the market and encouraged better trading on exchange. Tuesday brought little change. San Francisco was off ¼c, while Chicago was up ¼c, and New York unchanged. Here the market remained the same as for the past few days and no trading.

We quote extra creamery	.....	35c
Prime first	.....	33c
First	.....	31c
Wed. Thu. Fri. Sat. Mon. Tu.		
1916	.....	34 34 35 35 35
1915	.....	28 28 28 28 28

EGGS.

Receipts (railroads) for week ending Dec. 19, 1916—837 cases.
Receipts (railroads) for week ending Dec. 19, 1915—728 cases.

There was little life in this market the past week. The fact that the season for high prices is over, and the receipts were somewhat better than the same week last year caused traders on 'change to hold back and do little. The street trade was fair, encouraged by the approach of the Christmas trade. The outside movement, however, was light. The market showed no change here for the week up to Monday, fresh ranch count on call ruling at 38c throughout up to Monday. San Francisco advanced up to Monday 5½c on fresh extras, while Chicago for the same time improved 1c and New York 4c. This, however, had no influence upon the market here. Tuesday there was no change in the market here on call. Chicago, however, was off 2c, while Boston was up 1c and New York was down 1c. Estimated receipts by truck the past week was 600 cases, which with the rail receipts made a total of 1437 cases against combined receipts the same time last year of 1328 cases.

We quote fresh ranch one count, 40c. Pullets, 36c. Candles 2c, and selected 3c over quotations.

Wed. Thu. Fri. Sat. Mon. Tu.						
1916	.....	38	38	38	38	38
1915	.....	36	34	37	36	34

POULTRY.

With the approach of Christmas the market the past week brightened up. Receipts were the lightest for some time and the market was steady and firm. Broilers, fryers and heavy hens were all in good demand. Turkeys were also in very good request and so were ducks. Light hens and geese slow sale.

We quote from growers:

Broilers, 1½ to 2 lbs.	.....	23@24c
Fryers, 2½ to 3 lbs.	.....	20@22c
Hens, over 4 lbs.	.....	18@19c
Ducks	.....	17@18c
Geese	.....	16@17c
Roosters, 3 lbs. up (soft bones)	.....	18c
Turkeys, heavy, 12 lbs. and up	.....	23@24c
Turkeys, light	.....	21@22c
Squabs, live, per doz.	.....	\$1.50@2.00
Dressed	.....	3.75@4.85

HAY.

It was quiet in this market the past week. Receipts were fair and dealers were inclined to hold back and buy sparingly, and only moderate arrivals prevented a decline. Only such lots being taken as had to be had for immediate use. Receipts 193 tons.

[F. o. b. Los Angeles.]

Barley hay	.....	\$16.00@18.00
Oat	.....	18.00@20.00
Alfalfa, Northern	.....	15.00@16.90
Alfalfa, local	.....	17.00@18.00
Straw	.....	7.50@8.00

BEANS.

A quiet market was had the past week owing to the approach of the end of the year. Prices, however, remained steady and firm, the light stocks making holders independent.

We quote from growers:

Limas	.....	\$7.75@8.00
Large white	.....	9.25@9.50
Small white	.....	9.50@10.00
Pinks	.....	7.25@7.50
Blackeyes	.....	6.25@6.50
Tepary	.....	5.75@6.25

WALNUTS.

With the association having closed up its season and out of the market and the independents having exhausted their supply, there was nothing doing from first hands the past week. No. 1 and 2 walnuts were to be had from first hands. They were bid for at ¼c over Association prices, but were not to be had at this advance. Some culls continue to come in and are selling at 5@6c per pound.

The Associated prices this year and last are:

	1916.	1915.
No. 1	.....	15.50c 13.50c
No. 2	.....	12.50c 10.60c
Budded	.....	19.90c 17.00c
Jumbos	.....	17.50c 16.60c
Orchard run 3c less.		
Culls, per lb.	.....	5@6c

WEEKLY BUTTER AVERAGES.

Cents per pound for Extras.

Week	San Francisco	Los Angeles
ending	1915	1915
Jan. 2	.....	28.60 28.00
	.....	28.80

"	9...	25.32	26.65	26.00	28.16
"	16...	27.50	27.83	26.83	28.10
"	23...	28.66	28.25	30.66	28.50
"	30...	28.66	36.33	28.00	36.66
Feb.	6...	26.88	30.25	26.80	32.33
"	13...	26.74	31.40	27.90	33.25
"	20...	29.00	32.00	27.16	32.00
"	27...	29.10	30.90	27.00	35.25
March	6...	27.00	24.08	25.25	24.16
"	13...	24.66	29.91	24.00	28.83
"	20...	22.00	28.33	22.50	27.16
"	27...	22.91	28.50	23.00	28.08
Apr.	3...	22.00	28.50	22.23	28.83
"	10...	23.08	29.31	32.00	28.00
"	17...	23.00	27.33	22.00	27.50
"	24...	23.00	25.25	22.00	25.00
May	1...	23.08	24.33	22.00	25.33
"	8...	23.00	24.10	23.08	25.00
"	15...	23.16	24.58	23.00	25.66
"	22...	23.75	25.00	23.25	25.00
"	29...	23.08	26.50	23.00	26.50
June	5...	23.90	26.50	23.00	27.00
"	12...	24.08	25.83	23.83	27.00
"	19...	25.16	24.50	26.00	25.91
"	26...	25.50	24.50	26.16	25.91
July	3...	25.83	24.60	26.16	26.00
"	10...	26.21	26.40	26.00	26.60
"	17...	26.58	25.83	26.00	26.00
"	24...	26.41	26.00	25.50	26.00
"	31...	27.00	26.00	26.00	25.91
August	7...	27.00	26.16	26.00	26.00
"	14...	27.00	26.50	26.00	26.00
"	21...	27.50	26.50	26.00	27.95
"	28...	28.00	27.25	26.00	28.50
Sept.	4...	28.00	30.00	26.00	30.50
"	11...	28.00	30.20	26.00	32.00
"	18...	27.00	30.41	26.00	31.09
"	25...	26.50	30.41	26.00	30.50
Oct.	2...	25.91	31.66	26.00	32.16
"	9...	26.91	32.91	26.00	32.83
"	16...	27.00	33.50	26.00	33.50
"	23...	27.00	32.75	26.00	33.00
"	30...	27.00	32.59	26.00	33.00
Nov.	6...	26.55	32.66	26.00	33.00
"	13...	28.11	32.80	26.33	33.00
"	20...	29.59	35.25	28.60	35.66
"	27...	28.90	36.69	28.80	37.59
Dec.	4...	27.41	35.60	26.50	36.80
"	11...	27.33	34.83	23.83	35.16
"	18...	43.08	33.75	36.00	34.50
"	25...	26.40		28.00	

WEEKLY EGG AVERAGES.

Cents per dozen for Extras.

Week Ending	San Francisco	Los Angeles
Jan.	2...38.50	35.60
"	9...32.66	31.41
"	16...31.00	30.33
"	23...30.50	34.83
"	30...28.16	36.33
Feb.	6...23.23	35.66
"	13...23.00	28.90
"	20...23.60	23.66
"	27...21.40	20.30
March	6...20.50	18.33
"	13...20.66	19.50
"	20...21.00	20.00
"	27...20.83	21.41
Apr.	3...	21.75
"	10...	22.00
"	17...22.00	21.16
"	24...21.80	21.83
May	1...26.16	21.00
"	8...23.33	21.20
"	15...23.58	24.58
"	22...23.58	25.46
"	29...23.50	25.33
June	5...22.50	25.00
"	12...22.00	25.00
"	19...22.00	24.53
"	26...23.33	24.66
July	3...23.33	24.60
"	10...25.50	26.30
"	17...24.83	27.16
"	24...25.41	28.20
"	31...25.80	28.50
August	7...30.50	31.00
"	14...31.16	33.08
"	21...31.25	33.09
"	28...30.58	33.50
Sept.	4...30.08	36.12
"	11...34.33	37.90
"	18...37.98	38.83
"	25...38.66	39.75
Oct.	2...40.08	39.75
"	9...40.08	42.25
"	16...45.50	48.50
"	23...48.08	47.01
"	30...48.58	47.09
Nov.	6...51.08	47.66
"	13...54.25	49.50
"	20...53.83	52.59
"	27...52.90	50.59
Dec.	4...43.91	45.10
"	11...41.16	40.25
"	18...27.83	39.66
"	25...40.80	36.60

Publisher's Department.

A Merry Christmas to every reader of this journal.

Use a little of your spare time during holiday week and secure a new subscriber for the Rural Press.

We haven't said much of late about our book "Second Thousand Answered Questions in California Agriculture," but we are selling it in increasing numbers, which proves its value. Every reader of the Rural Press should have a copy of the book handy for ready reference. Price \$1.50 postpaid.

As the end of the year approaches we are cleaning up tag ends of business in order to close our books in the best shape possible. Our book keeper has two dollars, which were sent in some time ago, that can not be placed upon the books because we do not know who sent the money. One of these dollars came in a letter from Hollister last May, and the other came from Los Banos in Oct. If the parties sending the money will write us we will gladly credit them, but a letter containing a dollar bill or stamps with no name absolutely gives no means of identification.

SPECIAL LIVESTOCK MARKET REPORT.

San Francisco, December 20.

CATTLE: The present supply is proving sufficient for the demand but there is still a strong tone to the market. A few cattle are coming from Utah but the market here is not quite good enough to compete in any large way with Utah prices.

SHEEP remain as last reported, supplies coming from feed lots and market remaining firm as last quoted.

HOGS: Receipts the past week have not been so heavy as for the week previous and another falling off in shipments is looked for the coming week. Prices continue strong as last quoted. The first small shipment of Utah hogs arrived during the week, selling f. o. b. San Francisco at prices quoted. They were of good quality. Heavy runs of hogs are reported in Eastern markets but prices are well sustained.

WOOL: Inactivity in country buying characterizes the present wool market. Buyers are endeavoring to contract for the spring clip but without apparent success. From 5 to 10 per cent advance over our quotations may be looked for in this early contracting for year's fleece, providing it is good long staple wool. With present high values ruling, long staple goods will sell for more, comparatively speaking, than shorter staple goods. A letter from a large eastern operator says that general satisfaction is being experienced in importing foreign wools, even at advanced prices over domestic supplies because of their superior worth. The last of the series of London sales is now on, prices higher at the beginning and market holding particularly strong.

[Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F. Hog prices subject to seller standing one-half of all hogs condemned by government inspectors.]

Steers, No. 1	7 1/2 @ 7 1/2 c
No. 2	6 @ 7 c
Cows and Heifers	6 @ 6 1/2 c
No. 2	5 1/2 @ 6 c
Bulls and Stags	4 1/2 @ 5 c
Calves, light	8 @ 8 1/2 c
Medium	7 @ 7 1/2 c
Heavy	6 1/2 @ 7 c
HOGS, grain-fed:	
100 to 150 lbs.	8 1/2 c
150 to 300 lbs.	9 1/2 c
300 to 375 lbs.	9 c
SHEEP: Prime Wethers	7 1/2 @ 8 c
Lambs	9 1/2 @ 10 c
Ewes	6 1/2 @ 6 3/4 c
WOOL: Red Bluff, year's	25 @ 27 c
Mountain, fall	16 @ 20 c
Sacramento Valley, year's	19 @ 25 c
Mendocino, year's	32 @ 33 c
Mendocino, fall	19 @ 21 c
Southern, year's	18 @ 21 c
Southern, 7 months'	13 @ 16 c
Southern, fall	11 @ 12 1/2 c
Imperial Valley, year's	17 @ 19 c
Imperial Valley, 7 mos	14 @ 15 c
Nevada	22 @ 24 c
Fall wool	10 @ 20 c

Los Angeles, Dec. 19.

CATTLE: The past week brought no noticeable change in this market. There was a fair run of good grass-fed steers both from California and Arizona and they met with a very good demand. Killers were all in the market and wanted supplies, and in sympathy with strong market East prices were firm, though not quotably higher. Fat cows and heifers also sold fairly well.

Quotations f. o. b. Los Angeles: Beef steers, price 1000 to 1100 lbs. \$7.00 @ 7.75

Stockers and feeders 5.50 @ 6.00 Prime cows and heifers 6.25 @ 6.50 Good cows and heifers 6.00 @ 6.25 HOGS: A steady and rather firm market was had the past week, though the market was hardly so active. California furnished most of the supply, but the arrivals as a rule were light weights and in only fair flesh, showing that raisers are marketing their hogs before they are finished to save high-priced feed. Killers were all in the market and wanted supplies and what hogs coming in were sold without trouble.

Per cwt. f. o. b. Los Angeles: Heavy, averaging 250 @ 300 lbs. 9.25 @ 9.50

Mixed, 200 @ 250 9.25 @ 9.50 Light, 175 @ 200 9.25 @ 9.50 SHEEP: The market the past week was much the same as the week before. Arizona, Utah and Idaho furnished most of the supply and some very good yearlings and lambs, which made up most of the supply. Not many heavy sheep coming in. Killers were all in the market and wanted supplies and prices were firm without being quotably higher.

Per head f. o. b. Los Angeles: Prime wethers 7.00 @ 7.25 Prime ewes 6.50 @ 6.75 Yearlings 6.50 @ 7.00 Lambs 6.50 @ 7.00

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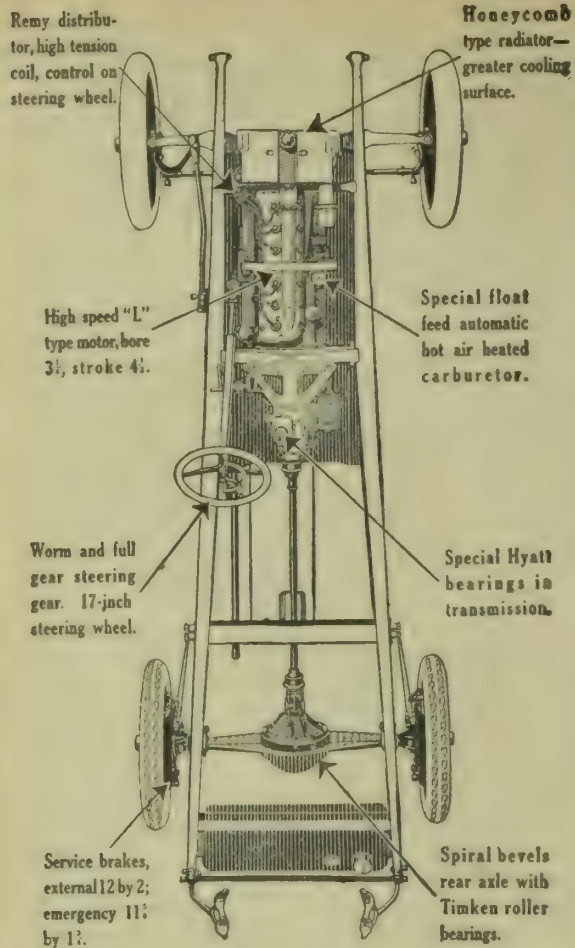


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DECEMBER 30, 1916.

LOS ANGELES

Range Management of a Beef Herd.

[Written for Pacific Rural Press.]

HERD management is a contributing factor to success in all branches of animal husbandry work, but nowhere is it more important for the grower to formulate definite ideas on this subject by his own and others' experience than with beef cattle.

It was to answer a subscriber's query relative to the management of a beef herd that the following views have been secured from W. Mayo Newhall. As Mr. Newhall's advice is based on almost a lifetime's experience and as he is conceded to be one of the most successful cattle growers in California, his ideas should carry more than ordinary weight with both experienced and inexperienced cattlemen.

Proportion of Bulls.—The number of bulls that should run with a given number of cows varies according to the ages of both cows and bulls and the character of the range. With bands of 100 to 150 cows three years and upward, three bulls, three years and upward, will serve 100 cows. With bands of more than 150 cows three years and upward in larger fields, four bulls, three years or upward, will be necessary for each 100 cows. If the country is rough and the cows are scattered it would, Mr. Newhall believes, be better to use five bulls for each 100 cows.

In Mr. Newhall's own operations he exercises great care in mating cows of a given age with bulls of the same age. This overcomes the use of heavy bulls on young cows and excessive service by young bulls. He thinks that two-year bulls should be used with heifers 18 to 24 months old, being bred for the first time, in the ratio of five bulls to 100 heifers. Bulls under three years of age should not be used with cows four years or over, neither should they be used with heifers being bred for the first time. He is decidedly opposed to the indiscriminate mixing of bulls of varying ages, as loss both through bodily injury and smaller percentage of cows bred, invariably results from such practice.

Replacing Bulls.—On the ranches of the Newhall Land and Farming Co. the graduation of service bulls is almost automatic, the replacement of the older bulls being accomplished by the introduction of the same number of two-year-olds each year. As they grow older they are graduated into bands of cows the same age, or as near the same age as practicable.

The period of usefulness of bulls on large areas depends upon their increasing weight and retention of vitality and activity. All bulls vary in these respects; but it has been Mr. Newhall's observation that Hereford bulls seem to have a period of usefulness one to two years longer than Shorthorns. It is possible to extend the usefulness of all bulls, if they are taken out of the breeding herd in the late summer or early fall and cared

for separately through the winter.

When put into service as two-year-olds and cared for as mentioned, they should as a rule be usable till six or seven years old if Shorthorns, and seven or eight years if Herefords. Assuming a normal

preservation of vitality, the usefulness of a bull is impaired by increasing weight and consequent development of laziness.

When practicable, bulls under four years old should not be put in the same fields with maturer bulls, and it is always advisable to have a few extra bulls in reserve above the number actually needed, to replace any that might have been injured or become out of condition. Frequently this supply of reserve bulls overcomes a shortage of serviceable animals in the middle of the breeding season, thus increasing the percentage of cows that calve. Another insurance of high percentage of cows bred is accomplished by Mr. Newhall by turning the bulls with the cows at different times. For example, if 20 bulls were in service he turns out 15 first and then turns out the other five at a later date. Those turned out last are more vigorous than the others by that time and breed some cows that would not otherwise be cared for.

Replacing Cows.—Properly a cow herd should be so managed as to turn off cows at seven years of age and never later than at eight years old. They become "shelly" after that and their beef value is diminished. This plan gives cows a breeding period of four years, having their first calf at three years of age and their last at six years.

A proper plan for the management of a good herd of 100 breeding cows is to take out 25 old cows and 15 of various ages that have become incapacitated with spoiled udders, and those that are inferior breeders, and to replace the number taken out each year with an equal number of two-year heifers. Care should be taken that the two-year heifers get with calf and that they are not too fat, as missing the first breeding year tends to make irregular breeders of them later. Heifers should not be bred younger than 18 or 20 months old.

Total Number Sold Annually.—By practicing the above methods Mr. Newhall finds it possible to market 80 steers and cows a year from each 100 breeding cows. Taking a 100-cow unit as an illustration, the calf crop should be 86 per cent—43 steer calves and 43 heifer calves. Reserving 40 of the heifers for replenishment of the breeding herd, the beef output each year, less loss by death and accident, should

be 43 steers and 40 aged cull cows. If the ranch or range is properly fenced to permit necessary segregation of breeding cows, steers of several ages, cows not to be rebred, and yearling heifers, the beef turned off annually will far exceed the amount a great many cattlemen are now contenting themselves with. Owing to the increasing cost of production with the higher land and labor costs, without proportional increase in market value of beef, it becomes increasingly necessary to apply scientific precision to the operations of production.



The Proper Management of Beef Herds on the Range Calls for Well-bred Cattle, Such as Are Seen on (top) A. E. Noyes & Sons' Ranch, (middle) T. S. Gibson Est., (lower) C. U. Hawkins' Ranch.

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EDITORIALS

GOOD CROPS AND BETTER MEN.

CALIFORNIA received on the eve of Christmas the greatest gift possible at this season of the year—a great rainstorm, which poured down volumes of water in all parts of the State. The south vied with the north in measures of bounty, and all producing districts will now go forward with confidence in the seasonable sowing and planting, for which ample early water gives assurance of success, and the markets will generously welcome the first contribution to the food supply of 1917, in this hemisphere, which the earliness of the California harvests will render most timely. We cannot recall a year in which both cultural and commercial conditions joined to warrant producing effort and investment, as they now do, and the fact is being generally recognized. The acreage of grain, hay, and other field crops will be notably increased, and there promises to be not a ton too much. Preparations for fruit planting are also being pushed with an extent and confidence greater than have been noted for a decade or more, because prices have shown the capacity of a demand which is chiefly American, and because of earnest belief that intelligent, co-operative organization will constitute producers something more than hewers of wood and drawers of water for the financial and commercial interests. And this remark is made without reflection or rancor against any individuals or classes of our present population. The unfairness has come down to us from remote ages. Perhaps the world started right when it made nobles of Adam, Cain and Abel, but it took a sad misstep at some later date, when it placed the warrior at the head and the farmer at the foot of the social scale. The distressing experience of Europe during the last two and a half years warrants that conclusion at least. And the outcome of that distress should not be, and will not be, the inversion of this obsolete social order, but something immeasurably better—equality of opportunity and reward to every man according to his ability and the value of his service to mankind.

INSTITUTIONAL ALTRUISM.

LAST week we noted the wonderful increase in individual Christmas observance this year. Rather more significant than that is what we may call the institutional outburst of the Christmas spirit until some one suggests a better name for it. Charitable institutions have long seized this opportunity for beneficence, which has shed much kindly light upon the pathways of the unfortunate and the distressed, but the events of this year have made all such relief efforts appear but as twinkling starlights in the glow of sunshine. Great corporations have found their souls, and have dispensed millions among their employees. Municipalities have installed great Christmas trees in public places, and have welcomed to the gladness of them all the children—without discrimination for or against poverty or wealth. From slum and boulevard, and all points between, the little ones have come running to merriment and feasting. The more one thinks of this

new thing under the sun the deeper the significance it embodies. It is the Declaration of Independence, spoken in the child-language of sparkling lights and bulging cornucopias. And though its meaning is beyond the ken of childhood, there will be a feeling in the fact which will grow with the child. Its deepest, immediate, significance is for the elders—that they have seen the sweetest, cleanest thing on earth, an emotion of joy in the heart of a child. These public provisions for Christmas, which have arisen in our great civic and other corporations this year as never before, appeal to us as evidence that we, as a nation, are learning our lessons from the horrors of Europe. Inhumanity abroad is teaching humanity at home. We are learning a new patriotism. We are receiving deeply a new conception of Christmas observance as not alone an institution for ourselves, for our offspring or our own social set, but as a gift of God to uplift mankind.

ALTRUISM AND SUGAR BEETS.

WE HAVE to admit that as one advances in altruism beyond the jollification of the kids, difficulties arise. Between the brilliance of the future, in which every man will love his neighbor as himself and a little better, and the darkness of the past, in which every man did his neighbor if he could, there is a great gulf fixed. In the present we are trying to get far-sighted discernment across that gulf through a perspective which is not always clear. We may as well illustrate with the sugar beet because that issue is now arising in concrete form. Last week sugar-beet growers of Milpitas district, dissatisfied with what they declare is a low return for their crops in the face of increased sugar prices, appealed to Harris Weinstock, state market director, to investigate their difficulties and aid them in getting higher prices. The letter to the market director was signed by ten growers cultivating 800 acres of land. Allan M. Standish, one of the growers, says that the sugar-beet raisers hope to form a State organization. At present, according to Mr. Standish, sugar companies are paying \$5.50 a ton for beets testing fifteen per cent sugar. A ton of sugar beets, he said, would make 300 pounds of sugar, which the refineries sell at wholesale for \$18."

Although the figures cited by Mr. Standish are variable and subject, on the selling side at least, to very sharp fluctuations, the position taken by him and his associates rests on a good foundation of growers' experience. Not only individual growers, but whole sections of them, have abandoned beet-growing, because they could not get a fair margin above cost of production, unless they limbered up their backs and went down on their own knees in the beet rows. This they have solemnly refused to do, so long as there is a vacant seat in a saddle or on a tractor which they can vault into. The result is that beet growing has yielded profits chiefly to Orientals or Europeans who could bend the pliant hinges of their knees that thrift might follow weeding. Is this right? From the point of view of an owner of good beet land, certainly not. A crop which requires such good land and such a large pay-roll should pay a profit on both. We apprehend that Col. Weinstock, if he undertakes to investigate the matter, will find that the margin in the past has been far too largely on the side of the manufacturer of beet sugar, and shared only with those who commanded a cheap labor supply in growing. But the whole question is not as simple as this. Sugar manufacturing requires large capital, and though it is in some instances amassed by co-operative effort of beet growers, such an undertaking is difficult and risky. It is also quite risky when the capital is not supplied by growers' cash or credit. The investment is likely to be almost swept away by a crazy free-trade administration, as it was in 1913, to be snatched from the pit by a world-war. Fortunately neither free trade nor war are likely to recur in this generation, so capital invested in beet-sugar making may be expected to be as stable and productive as it was previous to 1913. How was it then? It was too productive to the sugar-maker and yielded too little to the beet grower. Does capital expect this? Surely. Recent investment in factories and adjacent beet lands have not

been made on the basis of war prices of sugar. They have been reasonably made on the conviction that it will take the world some time to return to its old figures of sugar production, and that our government policy must favor American sugar for an indefinite period. How shall the grower get his share of this reasonable outlook? The investment in a factory is insured against everything but free trade by the factory-owned beet lands on which it can grow beets by a sawed-off tenantry with knee-joints bending both ways. Can the proprietary beet grower insure his returns by reversing the process of the factory owners? Shall we buy a factory near to his land and get the manufacturers' profit for his margin above cost of beet cropping?

But some reader may say this is not altruism at all; it is economic warfare. Oh, no, not in the long run; altruism is a product of war. The altruistic product of the present world war is perhaps the surest outcome of it. If we could have a good stiff fight over sugar beets, we might be able to see a great deal farther than we can now.

ALTRUISM IN ELECTRICITY.

ANOTHER problem in practical altruism is to be found in California transmission and sale of electricity, if current reports are accurate. They are that two millionaire electric promoters of Los Angeles recently fell apart, and in dividing their property and prospects, one took control of Southern California and the other the control of the San Joaquin Valley—each agreeing to keep off the preserve of the other. It is often said that a Los Angeles promoter is never satisfied with anything but the whole earth, and it seems that the Southern California magnate is invading the San Joaquin, despite the "gentleman's agreement" aforesaid—thus casting a shadow upon the proverb that there is honor among aspirants for the penitentiary. We do not guarantee these statements to be facts; we simply give them as we get them. If they are facts, and we have seen other things among control-artists which indicate that they might be, is it not humiliating to think that two men, with powers and supplies for manipulation, can dare divide California into spheres of individual influence, even if they do get to fighting about it afterwards. For we know very well that getting into a fight of this kind means getting together afterwards and employing the squeezing powers of both, released from each other, upon the general public. Fortunately we have now the intervention of the Railway Commission as a public protection against the altruism with which reconciled magnates yearn towards each other when their cruel wars are over. But the possibility of applying "addition, division and silence" to subdivisions of this great State does humiliate us, although we have fortunately protected ourselves in some degree against the most obvious evils of it. It makes us feel like shouting aloud the declarations of the National Conference on Marketing and Rural Credits, which assembled in Chicago last month, in these words:

"We protest against the passage of the Shields and Myers waterpower bills (now before Congress), or any substitutes for them, which fail to protect the public interest by requiring compensation for valuable public rights and by fixing a definite time at which each waterpower leased shall revert to the people, so that the conditions under which it is used may be readjusted to meet the public needs of that time. We call upon our senators and congressmen to defeat the Shields and Myers bills, and to pass water power legislation providing for compensation and effective time limits in all water-right grants, together with full publicity and effective regulation of charges so as to prevent monopoly and extortion."

WHAT THE EAST DID MUST THE WEST REFUSE?

BUT here again altruism (which in this case may mean the loss of present development for the sake of our great-grandchildren) is not as clearly advantageous in practice as it seems to be in principle. Suppose the pioneers of California had been as warm-hearted as all our professional conservationists now seem to be, and had forborne enterprises based upon individual appropriation or quit-claim purchase, for fear that some later comer might be thereby prevented from measuring

up to the Declaration of Independence, where would California's present industrial achievement be? And the same question might be asked about everything west of Plymouth Rock. And must the individual freedom and opportunity which built up the East and Middle West be restrained from operation west of the Rocky Mountains or the Sierra Nevada? It is, perhaps, possible that the far East should see most clearly, and the Mississippi Valley somewhat less clearly, that individual initiative and inducement should be merged in altruism and conservation. It seems to be about the only way in which the East can get a second draw on the national domain without undertaking again the pioneering by which the grandfathers of the present conservators enriched themselves at the East. From one point of view these zealous Eastern conservators are saying: "Our grandfathers grabbed everything in sight, but either there was not enough to grab, or else they had too many grandchildren; give us of your oil, for the lamps are

going out." And so, it seems to us, that the Western view should be that the development game with natural resources must be fairly played. Fair play has always been a Western attribute, and there should be fair play in altruism as in everything else. How can we build up strong States for national advantage and for the prosperity and joy of the inhabitants thereof, and still not lose our share in individual initiative and reward which have built up the older parts of the country? The resolution of the Chicago conference which we have quoted above, seems to embody the principles which should be applied. Regulation of possession, which shall on the one hand welcome and safeguard enterprise and investment, and of operation, which shall reasonably requite actual investors, and not make millionaires out of shoe-string promoters, will be best for this generation, and if our grandchildren do not like the condition which comes to them, they can shovel it over for a new fermentation.

alfalfa in the spring in time for a Sudan crop?—R. W. C.

Sudan cannot be successfully sown anywhere until frost danger is over. This is about corn-planting time. Your plan seems to be to get a winter growth of Sudan, which will not work. It would hardly pay to try for a catch-crop from May sowing to plow up in July. If you intend to re-sow alfalfa you had better plow up now and get the land ready for as early sowing as is safe. You can, of course, plow in the spring in time for Sudan just as you could for corn, but it is better to break up the land now for either and work it over again in the spring. Sudan does not give you anything permanent. It has to be resown annually to get what you can between spring and fall frosts.

Plowing Under Tomatoes.

To the Editor: Will plowing under at this time the scattering tomatoes that are on the ground injure trees which will be one year next spring? The soil is part clay and part gravel. My reason for plowing so early is that the last two irrigations were not followed by cultivation, consequently the land is run together and, should it become dry later, might bother me in getting it plowed.—J., Santa Clara.

No harm will result from plowing under tomatoes as you propose. It is conceivable that one could cover in so much fermenting stuff that roots might be injured or soil soured, but the litter from a crop cannot injure trees or coarse grain though it might reduce the stand of some garden seeds. Your idea of early plowing, under the conditions you describe, is good.

Peach Gum and Peach Blight.

To the Editor: There was something wrong with our peaches this last season: gum appeared some times on every peach on the tree. The gum came from the kernel of the pit. Is it peach blight? Can peach blight be identified at this season of the year?—G. R. S., Hemet.

Gumming of the fruit of the peach was discussed on page 635 of our issue of December 9. Cause and cure are not known. It is not peach blight which is manifested by gumming from little pustules on the bark of the new wood and you can see it now if you have it. The treatment for it is Bordeaux mixture. It should have been applied a month ago to be most effective but may perhaps reduce the trouble somewhat now, if the disease has been late in appearing owing to the dry air condition which has prevailed.

Barley or Oats for Wet Land.

To the Editor: Will oats stand wetter land than barley?—R. E. S., Bishop.

Barley has the general reputation of caring most, and oats are reputed to care least of all the cereals about soil and moisture conditions under which they are called to grow. Therefore oats will take wetter land than barley. But there are aerial conditions, and influences therefrom, which might make the fastidious barley better locally than the careless oats. For example, in the greater part of Northern California, oats are better near the coast and in the mountain valleys and barley better in the interior valleys.

Run Away From Wireworms.

To the Editor: Some of the bean land here is infested by a little yellow worm (some call it a wireworm) that bores up into the hollow stalk of the young bean plant and kills many and cripples many more and makes a good stand difficult to get. What can we do?—Reader, Marysville.

Run the land into grain or hay for a year or two. You ought to get a big crop after the beans and wireworms could not do much with it. Wireworms are one of the pests which have to be fought by rotation of crops.

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco, for the week ending at 5 p. m., December 26, 1916.

STATIONS	Rainfall Data		Temperature Data	
	Past Week	Seasonal To Date	Normal To Date	Max'm Min'm
Eureka	2.70	10.46	15.62	59 34
Red Bluff	.41	7.66	9.32	58 32
Sacramento	.76	4.35	6.57	56 34
San Francisco	1.80	7.59	7.58	58 38
San Jose	1.28	4.58	5.70	56 30
Fresno	.96	3.17	3.22	54 34
Independence	—	1.12	3.16	60 —
San Luis Obispo	5.12	11.70	5.26	60 32
Los Angeles	2.55	6.82	4.64	62 38
San Diego	.74	2.12	2.80	62 40

By
the Editor

QUERIES AND REPLIES

Inquirers Must
Give Full Name
and Address

Plants for Alkali.

To the Editor: I have several acres that are very damp and perhaps water-logged during the irrigation season. Some of this land is strongly alkaline, although several kinds of weeds and wild millet seem to thrive. Part of this land is very rich, having been used for two years as a stock pasture. I have been thinking of planting stock beets next month. If this would not be advisable, could you suggest some grass that would be likely to grow? Would perennial rye grass do, and if so, has it much value for dairy stock?—G. R. E., Turlock.

To the Editor: What are the surest crops to raise on alkali land for chickens and cows, and when to sow them?—C. F. C., Fresno.

Some weeds like alkali well enough to grow on the roof of a soap factory. If you learn the lesson they try to teach, they may tell you that useful plants will not grow. Such weeds are not an indication that the land is good, but of the contrary. Still if stock found stuff they would eat, the chances are that the alkali is not as bad as it might be and you should determine that by trying to grow what you want. Long red mangel wurzel, which grows largely above ground, will pump out more alkali and water than any other forage plant and will help you to shift the alkali into your cows, with what effects you will have to find out from the creamery man. Do not plant beet seed in cold, wet ground. If it is that way in January plant a little later. Rye grass will stand more alkali than most other good grasses and it likes the water, but you will have to try it to see how it likes you. It makes a good dairy pasture.

Our second querist can take some hints from the foregoing. What other plants you can grow depends on how strong the alkali is, and the plant itself is the handiest chemist available to all farmers. Therefore try a little of a number of plants and see what they say about it. If you cannot get a crop of barley there is little need to try other grains of winter growth, and of summer growers the sorghums are most tolerant. Sow as early as you can after good amount of rainfall all plants which will stand frost, for the rains carry alkali down and that helps to start the seed and most plants are most sensitive just after germination. Tender plants like sorghum must be started as soon as possible after frost dangers are passed.

Cabbage Troubles.

To the Editor: I have planted a half acre of cabbage in October and some have small heads already, but the cabbage worm, a green worm $\frac{1}{4}$ in. long, is at work pretty hard eating the leaves. A gray louse is at it on top. Please tell me the best way to get rid of them. Will Paris green mixed with bran and put on the cabbage poison the cabbage or burn it?—Subscriber, Fresno.

The Paris green and bran mixture will not hurt the cabbage nor poison anybody. It is usually made of a teaspoonful of Paris green and a pound of bran stirred into a gallon of water and the moist bran is then sprinkled over the cabbages. A cheaper treatment is two pounds of lead arsenate

powder (or four pounds of the paste form) to 50 gallons of water—to be sprayed on the plants. To hit the louse also, add four ounces of tobacco extract (40 per cent) for each 50 gallons. The plants ought to be watched and sprayed again later, for both these pests are liable to keep coming.

As for poisoning the cabbage with the arsenate, a late government report says that one must eat 28 head of cabbage at once to get poison enough to make him sick. Still, outer leaves should be removed before cooking. We would not use the tobacco spray on heads nearly ready, as most people prefer plug to extract. A good hard rain or a stiff spray with cold water will dislodge most of the lice.

Gypsum Not Indicated.

To the Editor: Some of my neighbors say that I should use gypsum on my land as it needs a fertilizer. Another says that gypsum is useless on it as the land is too sandy. What would you advise me to use on very light soil for trees and vines? The land is under irrigation and I can not get stable manure.—J. L., Dinuba.

Gypsum furnishes lime directly: indirectly it makes other plant food in the soil available; mechanically it makes a heavy soil more mellow. As you probably need none of these things, the use of gypsum is not indicated for you. As you have no stable manure you are prevented from making the best possible application for your purposes. The next best thing is to buy a complete fertilizer from one of our advertisers and use it to grow green stuff to plow under. With such a fertilizer and water wisely used you can grow rye and vetch in the winter and cowpeas in the summer and keep at it until you sand into a rich dark loam which people will come miles just for the joy of kicking into.

Fertilizers for Beans.

To the Editor: On account of the poor yield of rice here, much of that class of land will be abandoned next year. I have been asked if there is a fertilizer for beans that may be drilled along with the seed which will cause this poor land to yield?—Subscriber, Yuba City.

Of course land can be strengthened for beans as for other crops by use of stable manure spread early and leached out by rains so as not to interfere with spring working. To this (or without it if none is available) use 200 pounds of complete fertilizer running it in with the seed as you propose. There is some question of the need of the nitrogen item for beans, and excellent results have been secured by using superphosphate and potash, three parts of the former to one of the latter.

Alfalfa and Sudan.

To the Editor: How early can Sudan grass be sown in Fresno county? I have an alfalfa field which is running out. Would it pay to disk this with Sudan and get a mixed crop? I expect to plow this field up in the summer but would like to get a Sudan crop from it. Could I plow up the

Cherry Future Bright for Fittest.

[Written for Pacific Rural Press.]

Great adversity to an industry gives great profits to those who escape that adversity by reason of natural advantages or superior manipulation. It has proved true in the pear industry of California, and seems to be proving true of cherries.

The grand old cherry orchards to be found in many districts of California, horribly mutilated by removal of branches as big as 10 inches in diameter, and made lonely in their old age by the death of gummed or gophered trees, tell a tale that makes a man pause before deciding to plant, and points the way to prosperity if he has the right conditions.

The die-back which has resulted in so many mutilated old trees and the removal of whole orchards, has not been explained more reasonably than as being due to the death of root hairs. The fuzzy growth of root hairs at the terminals of the roots, which supply the moisture and soil food for tree and fruit, seem, on the cherry, peculiarly tender in case of overwetness or overdryness. When they are rotted or drowned by too much water or killed by drying out, the tops of the trees die back.

Magnificent trees had thrived in many parts of California for decades, but since the drouth of 1912 and '13, they have been butchered because the great tops were not supplied with enough moisture and food from the dried-out roots.

The other great drawback to the cherry industry has been gum disease. There are several causes of gumming; but there is reason to believe that many of the really serious losses due to gummosis are caused by bacteria. They affect the sweet cherries principally. Pockets of gum form and spread under apparently healthy bark; and only when it breaks out is the trouble discovered. Many trees seem to have recovered naturally, and control measures have been worked out more or less satisfactorily to those who apply them conscientiously.

Die-back and gummosis have discouraged so many orchardists that, like the pear industry, those who have the right conditions and treat their trees right may expect rich reward.

The Right Conditions.—We have seen thrifty cherry trees on many kinds of soil. The soil does not seem to us to be the deciding factor except as it influences the amount of moisture around the tender roots.

Clay soils, so far as we know, are out of consideration for cherries. They hold the water too closely in the wet season.

Sandy loams seem best adapted because they drain well. If so located that they do not drain, they are out of the question. But if they dry out late in summer, die-back is almost sure to follow to greater or less extent.

Irrigation.—Previous to the past few years, it was considered that the cherry did not need irrigation; and the principal cherry districts did not have it. Santa Clara county, which leads with over 1800 acres, has recently put in many irrigation plants, but this has not occurred to so great an extent in the other dis-

tricts with less favored conditions.

Atmospheric moisture seems equally necessary, for it is only in the bay districts and neighboring valleys that cherries continue to thrive. Sunburn and small fruit seem the rule in the interior valleys away from the Delta.

Acreage of Cherries.—San Joaquin county, open to the ocean breezes and not far above ocean level, has almost equal acreage with Santa Clara. Alameda had 1000 acres bearing last spring; Solano and Sonoma about 700 each. Napa, Sacramento and Placer had about 350 each, and Contra Costa had about 200. Placer, the farthest removed from coast influences, has some of the oldest cherry trees in the State, on the American River bottoms where, as W. R. Fountain says, "It is sandy and there is no bottom." But in the granite foothills of the New-castle fruit district, the trees are dying back and being removed, though in several cases, Mr. Fountain relates, no expense has been spared to make them a success.

Napa County Horticultural Commissioner J. J. Fox suggests an east slope and perfect drainage as the locations where cherries will do well.

For Sonoma county, L. Hillis says that he believes the redwood soils desirable for cherries; but not "pine or hardwood soil." A rolling situation, with natural drainage and volcanic formation, is preferred.

One of the best orchards we have seen in Santa Clara county was on sandy soil over 30 feet deep, and was judiciously irrigated.

F. B. McKevitt, president of the California Fruit Distributors, sums up the cherry situation in the following words:

"I would not recommend that cherries should be planted, rather than other fruits, in any district in the State, unless it would be in a limited way on soil specially adapted to the requirements of this fruit and in locations where the climatic conditions would justify it. There are very few places in California where all conditions seem suitable for the cherry; and even in those places the crop is considered more uncer-

tain than most other varieties of fruit. I would not advise any one to plant their entire acreage to cherries, even in those localities best suited to it. This uncertainty of cropping offsets to a great extent the prices obtained for the early product.

"The particular points to be specially observed in the planting of cherries are: the selection of soil, which should be preferably a deep sand loam, rich and well drained, and if possible, subirrigated. The location for a cherry orchard should be as free from heavy winds as possible, and if it can be planted in the lee of a hill which would protect it from the north winds particularly, it would be very desirable. It is unnecessary, of course, to state that nothing but first class, clean, and well-grown stock should be planted. For this purpose a tree four to five feet is my preference, one year from the bud.

"Before planting, the ground should be deeply plowed, subsoiled if possible, and well harrowed. Thorough cultivation and good care are essential to a continued and healthy growth of the trees.

"The best varieties for shipping purposes are: Chapman, Burbank, Advance, Tartarians, Royal Anne, Bing, Lambert and Black Republican. There are other varieties not extensively grown that promise well; and it may be experience will determine that the above selection can be improved upon.

"For canning purposes Royal Anne is probably the best; it is also one of the best bearing varieties. If the locality does not produce early shipping cherries, it would undoubtedly be better to plant for canning purposes.

"Probably there is no tree grown in California that is more liberal in its setting of buds than the cherry; and it is more than likely there is some well-defined reason why these buds fail to mature, and if they do mature, why the young fruit drops off when about the size of a pea. Thinking orchardists and scientific investigators from the universities have here a problem that I believe can be studied to great advantage, as it is my belief that the trouble can be controlled when the cause is once understood."

Making Buds Bad to Birds.

To the Editor: Do you know of any spraying mixture to spray on the apricot trees to prevent the birds from picking the buds? The birds were hard on them last year and I see they are at it again this fall. I am going to spray them now with bluestone and lime and I thought it might help to put on a good coat of lime. If you have some spray that will keep the birds away and not hurt the buds you will do me a great favor to describe it. I have planted alfalfa in my orchard this fall and would like to ask if you think the lime and bluestone mixture will hurt it now when I spray the trees.—H. B. C., Fresno.

[We do not know that any of the frequently mentioned poisons and repellants have been demonstrated to be effective. If any reader has succeeded in solving this problem, we shall be glad to hear from him. It

is not likely that your Bordeaux spray will hurt alfalfa unless you tip over the spray tank.—Eds.]

LIME FOR SOUR LAND.

To the Editor: Which is best and cheapest to apply to sour land, air-slaked lime, or ground oystershells at \$7 a ton f. o. b. Berkeley?—E. B. P., Lincoln.

Theoretically both are of the same nature and the same value; but air-slaked lime may contain a lot of water now which you can get cheap at home. Ground limestone will cost about \$5 a ton at main line points in carlots. Some of it may leach or wash away before it becomes available. Hydrated lime contains about twice the value and is more quickly available. It will cost about \$11 per ton delivered at main line points.

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Prune French Prune Trees Every Year

[Written for Pacific Rural Press.]

Vociferously we were told that prunes should not be pruned oftener than every three years. But we didn't believe it. Everywhere in Santa Clara Valley are old prune orchards of declining vigor and no recent big crops. Frequently we see orchards pruned every third year, in which a crop is lost by being about all cut off at once and by the vigorous wood growth of the next season robbing what fruit buds are left. In many cases not much of a crop is lost, for there wouldn't have been much. The French prune of mature age tends to make fruit buds too thickly and wood growth too short.

Perhaps the sap cannot freely pass through thickened cell walls. Anyhow vigor is lacking, and the old clogged-up wood must be removed. If it is removed annually, there will be enough new growth to keep the tree supplied with all the fruit buds it can mature fruit on; and do it every year.

Because the prune bears near the terminals, where new growth is short and full of fruit buds, it cannot well be cut back. But weak brush can be thinned out. This is now the practice of W. A. Yerxa of Colusa county, who bought a 15-year declining prune orchard twelve years ago and now has healthy annually renewed tops on the old trees.

"Size up a tree for vigor before you start to prune," says O. N. Featherston of Santa Clara county, who has 12 acres which produced $3\frac{1}{2}$ tons green per acre last year which dried to 44 or 44½ per cent. "Thin it out more if it is less vigorous as shown by last year's growth. But do not cut it back." J. M. McKinnon is another who gets new growth and spurs down on the limbs all through the tree, by thinning only.

Everywhere among the old prune orchards we see where trees have been heavily cut back. The exposed limbs have been sunburned or become barkbound. The stubs have sent forth some new growth which could not protect them from decay

before decay became established.

N. Perusina, now working for A. W. Johnson in Santa Clara county, was experienced in the Bosnian prune orchards of Europe before coming to this country. "The main thing is pruning every year," says he. This to avoid making big cuts and subsequent rotting. He would leave growth low on the tree, but cut it enough to keep out of way of horses.

Broken Limbs Teach Lessons.—

The damage done by allowing all fruit to set at the ends of limbs was well illustrated last season in an orchard whose crop was not heavy but which was full of props and broken limbs some time before the fruit ripened. In almost all cases the broken limbs were about four feet bare and then tipped with fruiting brush. If the same fruit had been distributed down the limbs it would have been saved, and the limbs would be there next year.

This orchard illustrated other points to be avoided. Most of the broken limbs were horizontal back to a diameter of over two inches. One had simply split and buckled the lower half of its circumference. Far less strain would have been put on them all if they had been pruned to grow diagonally upward and to fruit more along the limbs. Less strain would have occurred at their junctions with the main limbs, where most of them had broken loose. One had grown out from the side of the older limb, and easily twisted away under the weight of fruit. Another had joined the older limb in a wide flat thin junction in which there was little strength. Another had broken off where the limb from which it sprung had been cut off, leaving a stub which rotted downward in the heart. The break disclosed the rotten, weakened wood. Another broke a foot above where two two-inch branches had been cut off. The upper third of the remaining branch had rotted clear to the center and upward to where it broke. It was five feet upward from the break to the first brush.

Planting Grape Cuttings.

To the Editor: In starting a Seedless vineyard, would time be saved by setting out cuttings instead of rooted plants?—W. A. A., Ceres.

Although vineyards are often planted with cuttings it is well to remember that the first year after a cutting is made, might as well be spent in a propagating bed so that the proposed vineyard acreage may be used for some crop that will put it in good shape for the vines and yield a return, without plowing and cultivating around the cuttings. The

vines will make as good growth the second year as if the cuttings had been set in place. By planting rooted vines you avoid loss of space for a year's time where cuttings might not grow or where they would be damaged during the first year's cultivation.

TRANSPLANTING TWO-YEAR FIG TREES.

To the Editor: Can fig trees that have been planted and grown two seasons be successfully transplanted? I have a piece of land that I wish to plant figs on. The only trees that I can get this year of the kind that I want to plant are two-year-old trees and they have made a good growth. I have blasted the holes. Do you think it would be all right to dig large holes, save all the roots I can and cut back the tops pretty well?—F. M. Reedley.

You plan is safe and sane. Settle the dirt in the blasted holes before planting, so you will not find later that the trees are too deep.

TALKS ON Nitrogenous Fertilization

Number 5

WHAT amount of SULPHATE OF AMMONIA should you apply? That depends somewhat on circumstances, including soil, crop and climate. Generally speaking, 100 to 300 pounds per acre will prove profitable on field, truck or orchard crops. For well grown citrus orchards, say, $8\frac{1}{2}$ to 10 pounds per tree per year in several portions; for younger trees, half this amount.

SULPHATE OF AMMONIA

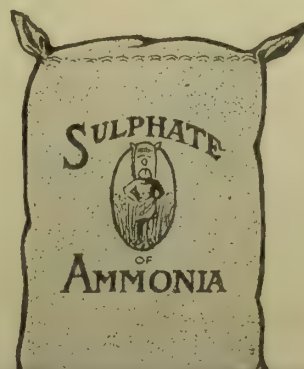
Much depends on the humus content of the soil. The more humus and the more favorable the conditions for the nitrifying bacteria, the more ammonia a given soil can handle and pay a profit on the investment.

The best advice is to try a moderate application at first, watch your results carefully and be guided by them. In this way you will learn whether your maximum profit is at 100, 200 or 300 pounds per acre, or even more.

Do not forget that your crops must have phosphoric acid, lime and potash, as well as nitrogen.

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Cory's Thornless Blackberry.

The Thornless Mammoth Blackberry was first discovered by Martin Meuli on his ranch in Tuolumne county in 1909 in a patch of regular mammoth blackberries. One vine had one branch which was practically thornless. A Mr. Beede working for him was interested in vine culture, and he took a few tips from the first cane. He went to Grass Valley and from his few tips he got about 75 tips. Then W. C. Cory rented the Meuli place, and Mr. Beede came to work for Cory for two years. In that time they propagated about 3,000 plants, but only one-third of them were thornless. Mr. Cory then propagated from the old thornless a true thornless blackberry which is nearly free from seeds, entirely free from thorns, and of gigantic size. This berry has a distinct flavor of its own, unlike any other blackberry. Cory's Thornless Mammoth Blackberry is the largest blackberry grown anywhere, averaging the size of a man's thumb, and the meat is firm enough to ship.

While it is a prolific bearer, one

of its most essential features is its early maturity, being the first blackberry ripe. Strong one-year plants set out in February bear ripe fruit the first of June. The plant is hardy, thriving in almost any soil but preferring sandy loam. Its yield is commensurate with the amount of cultivation, irrigation, and fertilizer used. One acre which is in bearing on Mr. Cory's place produced three hundred crates, and about half of the canes were used in tipping for new plants. Much nourishment is diverted from the usual growing of thorns to improving the size, quality, and quantity of the berries.

The cost of picking the fruit is cut in half owing to the absence of thorns. Also, the cost of pruning and trellising up the new wood is more than cut in half.

[Several sample canes sent to this office bear out the thornless quality, even canes $\frac{3}{4}$ inch in diameter having only a few very small short points in place of the thorns that make the ordinary Mammoth pruning a mean job.]

Pollenization of the Almond.

To the Editor: I have a lot of two-year Nonpareil and IXL almond trees set in alternate rows. The nurseryman told us they would interpollenize to make each other bear. Others are telling us they will not. Should we graft over one variety, and to what?—I. O. R., San Francisco.

Evidence conflicts as to which varieties interpollenize best, because climate and location seem to alter cases. From the "University Farm Agricola" we quote regarding experiments begun three years ago:

"At the present time the experiments seem to show that certain varieties will not cross-fertilize when placed side by side in the orchard. Good examples of this are Nonpareil and IXL. Others, such as the Ne Plus Ultra, seem able to pollinate several other varieties, including Nonpareil and IXL."

P. D. Bane of Glenn county, whose 20-year orchard consisted of Nonpareil, IXL, and Ne Plus, cut out the Nonpareils gradually on account of alternate bearing, but retained the IXLs. In planting new orchards he used IXL and Ne Plus, with Drakes outside, because the latter are "the strongest pollenizers." In the

new orchards he secured a succession of ripening, which enabled him to keep a small force busy through a long season—IXLs ripen first, then Ne Plus, then Drake. Nonpareils ripen at the same time as IXL, but tend to close again so are harvested first of those two. Texas Prolific is a great pollinizer, but blooms a little later than Nonpareil and IXL, so that only its early blossoms can fertilize the late blossoms of the others. Ne Plus grafted into non-bearing Nonpareils in Sacramento county resulted in heavy crops.

Since Nonpareils and IXLs are the highest priced varieties, if we could get dependable harvest help we would not graft over either of them, but graft into one high branch of each alternate tree a scion of Ne Plus, Drake, or Texas Prolific. Ne Plus come next in price below IXL. The varieties must be kept separate at harvest, or the whole lot will sell down toward the price of the poorest variety. If harvest help is not dependable it might be well to replace every fourth or fifth tree each way with one of the pollenizers mentioned.

Orange Soil Hardened.

To the Editor: I have 20 acres of orange trees on red soil underlaid by hardpan. Have been irrigating and cultivating these trees for a number of years. Now the ground seems to be getting very hard and runs together. Am thinking of fertilizing this year with either ground lime rock or air-slaked lime. Which would be best and how much would you use per acre?—H. B., Orosi.

You want quick action on that soil, which can be obtained best by hydrated lime, about one ton per acre. Air-slaked lime may contain a lot of water now, which would be expensive at the price. Ground limestone would act more slowly. Lime is not a fertilizer, but when worked into intimate contact with soil particles, it loosens them and softens the ground.

If it were our orchard we would also dynamite it as described in an article recently printed in Pacific Rural Press, and then plow under all the cover crops we could possibly grow for all the years to come—and we would expect results.

TEPARY BEANS.

To the Editor: Where is the tepary bean grown most in California?—F. W. R., Modesto.

Probably around Stockton, though we know of no figures on acreage. They are grown in considerable amounts in your own neighborhood, around Fresno, in Southern California, and in Arizona. A place to sell them should be found before planting them extensively.

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BARTLETTS FREQUENTLY NEED POLLINATION.

To the Editor: Am sorry to say that I must take issue with you when you make the statement in issue of December 16 that the Bartlett needs no pollinizer. Think you really have not meant to make so broad a statement.

My own experience has carried me far in the other direction, and I contend that the Bartlett frequently needs a pollinator, particularly throughout the entire foothill fruit belt. Under valley, conditions, where the vigor of the tree is developed to the fullest degree, I know of many instances where pollination appears as if it might be superfluous. However, even there I am inclined to believe that pollination would make for more regular cropping. It is true, thinning would frequently have to be done, but it's so much easier to pull fruit off than it is to stick it on.

In tests made here in our orchard we have had a tremendous increase in fruitfulness since placing pollinators in a block of old Bartletts. In many other orchards throughout the foothill belt I find certain blocks of Bartletts are uniformly and heavily productive, and practically without exception find some other variety of pear close enough for pollination.

An experiment in pollination is now under way in the State under test conditions where an increase in fruitfulness of the Bartlett of 1000 per cent was realized this year, but as this experiment is not yet complete I am not at liberty to give details.

We have under way the planting of nearly 300 acres in our orchard to pears. We plant not more than six rows of Bartlett in a block and then two rows of another sort for pollination, using for this purpose principally Anjou and Comice. There are several other desirable sorts blooming with Bartlett that would also be desirable as pollinators.

With plums, cherries, apples, and pears I am convinced that there is greater need of pollination than we generally recognize, and not a year goes by without giving me concrete evidence of the benefits to be derived from this practice.

Instead of making the sweeping statement that heads your comment, tell the fruit growers that we have much to learn upon this subject and recommend a careful observation on the part of the thousands of orchardists of the State until we have accumulated conclusive evidence as to the conditions under which pollination may or may not be beneficial.

A. L. Wisker.

Grass Valley.

[Thank you. We wish all of our readers were as prompt to point out desirable modifications in our statements and to tell us their experience.]

The Federal Farm Loan Board announces that the blank form of articles of association to be used in forming National Farm Loan Associations has been printed and is now ready for distribution. If interested persons will address a letter to the Federal Farm Loan Board, Treasury Department, Washington, D. C., these articles of association will be sent, with instructions for further action.

Roeding's Page

APRICOTS

ON TREES

IF THERE is any one thing for which California stands out pre-eminently it is Horticulture. Those who depend on the soil to make their livelihood must necessarily realize a profit, otherwise they cannot go on with their venture. If there is any one thing that has militated against the building up of the fruit interests of California more than any other it is the cry, and quite frequently a very insistent one, that a certain variety of fruit has been planted more extensively than it should be. The word "over-production" stands out so prominently to the man who has practically made up his mind what he intends to plant, that it causes him to waver and it is more than likely that he embarks in the very venture which he should not have engaged in.

\$50 A TON FOR PITS

It is the unexpected which has probably contributed more to the building up of the fruit industry in California than possibly any other cause. Who would have thought ten years ago that apricot pits, which were selling for \$8 per ton — (and their only use was for the raising of seedling stocks by the nurserymen and for fuel in the homes of the orchardists) — would within such a short period have a commercial value and that the price would advance steadily, which it has done, reaching what

might be termed a maximum in the year 1916 when apricote pits sold for \$50.00 a ton.

A CALIFORNIA MONOPOLY.

We did not realize then that this magnificent fruit, grown under conditions which seem to be more favorable in California than in any other place in the world, would with the intelligent effort displayed by the grower, cause our

product to be so highly appreciated that at least 60 per cent of the output should be used for export. Here are the figures from the annual report of the State Agricultural Society, which speak for themselves. In the year 1902 we exported 1,928,237 pounds. In the past nine years the average annual export has been in the neighborhood of 18,000,000 pounds, and in 1915, under the adverse conditions of transportation, and with Germany, the heaviest purchaser of this fruit, practically out of the market, we exported 27,764,342 pounds.

FRESH, DRIED OR CANNED

Bearing in mind that the apricot is such a delicious fruit when fresh and apparently it loses none of its piquancy when dried and canned, it is not surprising that this industry which is typical of California should present such great possibilities. It is a well-known fact that apricots do very well in many of the interior valleys, but it is in the Coast counties more particularly where the tree luxuriates and the fruit is of exceptionally large size and highly flavored.

PLANT APRICOTS

In view of the above facts we can see no reason why you shouldn't profit by planting apricots. We will be glad to advise with individual growers as to whether their soil and climate is adapted to this fruit. Write us.



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Experience in Dry Farming.

[Written for Pacific Rural Press by J. W. Lyle, Sheridan, Cal.]

I have been requested to give the readers of the Press some of my experiences in dry land farming. My experience was gained chiefly in the dry land belt of eastern Oregon, Washington and Idaho, and a limited experience in Central California. I have found the methods that I will describe equally good wherever I have tried them, with slight modifications to suit local conditions. The only doubts I have in my own mind in California are the exact time of seeding and amount of seed per acre. There is so much variation in types of soil and climatic conditions in this State that each locality will have to work out these problems to suit local conditions. However, I wish to emphasize the fact that the methods I give in regard to preparing the soil will give as good results in California as in the north.

The climatic conditions in the north are rather severe, the thermometer frequently going to 20 degrees below zero in winter. Usually there is little rain and sometimes little snow. During the growing season there will be days of raw, chilly winds followed by days that are calm and very hot. Sometimes when the wheat is in the dough there will be dry, hot winds from the north. The only way to dry-farm is the bare summer fallow. If the soil is in such condition that the plow will turn clods under, the surface should be disked or harrowed or both until the clods are thoroughly pulverized before plowing. If a plow sole has formed, it should be broken up. A subsoil plow is better for this purpose than to turn the soil from too great a depth to the surface. After plowing and before the soil has had a chance to bake or dry out, it should be worked down and finely pulverized and then it should be cultivated at intervals all summer. The time between the different cultivations is governed in a measure by the character of the soil and climatic conditions, and will vary from two weeks to a month, and even longer under very favorable condi-

tions. A man has to mix judgment and brains with his work to be a successful dry farmer; and no farmer no matter how good, under favorable conditions, can become an expert dry farmer in one year or two. If the soil is very retentive of moisture and there are no adverse conditions, such as dry winds, and the soil has been well saturated with moisture, a month or more will not be too long between cultivations. If the soil is of such character that the loss of moisture by evaporation is rapid and there is little moisture in it, two weeks between cultivations is too long. To make a success of dry farming it takes experience, intelligence and work, work, work, and more work.

For cultivating a summer fallow a good spring tooth is a splendid implement; on some soils a good drag harrow does very well—anything to keep a good dust mulch and keep down the weeds. If the summer work has been well done there will be an ideal seed bed at seeding time. A drill, preferably a press drill, should be used. Do not seed broadcast and do not seed too heavy; for fall-sown wheat never under any circumstances more than 45 pounds per acre; and under some circumstances considerably less. Again, experience and brains.

SULPHUR ON ALMONDS.

To the Editor: What is the right mixture of sulphur and water for spraying four-year almonds?—H. P. H.

Sulphur does not mix practically with water except in such special preparations as atomic sulphur, etc., directions for dilution of which are on the packages. The only use of sulphur that would pay on your trees while dormant is lime-sulphur which can be obtained from our advertisers ready to mix with water. It will kill the eggs of the brown almond mite often called the "red spider."

FARM LOAN BLANKS READY.

Word comes from the Federal Farm Loan Board at Washington, D. C., that they expect to announce the location of the twelve new Federal Land Banks before Christmas. The interest manifested in these banks has been most gratifying to the officials having their establishment in charge, and they are sending out the following instructions for the information of farmers who may wish to form associations for the purpose of borrowing money:

The Federal Farm Loan Board announces that the blank form of articles of association to be used in forming National Farm Loan Associations has been printed and is now ready for distribution. If interested, persons will address a letter to the Federal Farm Loan Board, Treasury Department, Washington, D. C., these articles of association will be sent. When they reach you, call a meeting of the prospective members of your association, adopt these articles, and have each member sign them and acknowledge them. Fill in the blank space at the top the name your association adopts. Then, at your first meeting, elect a board of five or more directors and have the directors meet and elect a president, a vice-president, a secretary-treasurer, and a loan committee of three members. The loan committee may begin at once to value the lands of the members and prepare its written report of these valuations, which must be unanimous.

Do not send the signed articles of association to Washington, but hold them until the Federal Land Bank of your district is located. Then, write to the bank asking for forms which include an application for a charter. When these come, fill them out and send them, together with the articles of association and the report of the loan committee, to your Federal Land Bank.

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Alfalfa Silage Experience.

[Written for Pacific Rural Press.]

The most complete manual of alfalfa, where and how much it is grown, how to grow it for hay and seed, how to feed and market it, is just published by the Kansas State Board of Agriculture. It shows that Kansas led with nearly a million acres of alfalfa in 1910 by the U. S. census, while California was fourth with 484,134 acres.

In Kansas, the California trouble of rain on the first cutting is sometimes extended to several cuttings. There, as here, the silo is empty about the time for the first cutting. Probably, also, they have weeds in the first cutting, which might make poor hay. We quote the experience of a Kansas farmer as published in the manual:

"Under ordinary conditions, the making of alfalfa into silage is not profitable. . . . On our farm, dairying is the main business. . . . For a cow to do her best, part of her ration must be succulent as well as nutritious. Silage is one of the most inexpensive of the succulent feeds.

"When the Silos are Emptied, before the succeeding corn and cane crops are ready, we use alfalfa silage.

"The alfalfa is cut for silage when

in proper stage to cut for hay. The rake follows the mowers, and the green alfalfa is hauled at once to the silo. We put it into the silo without running it through the cutter. This materially lessens the cost of filling. We are extremely careful in spreading the alfalfa evenly to insure even settling and to avoid 'pockets.' It is also well dampened when put in, which aids very much in getting it tramped tightly.

"Fermentation begins within 12 hours, and progresses rapidly. The silage may be fed after 36 hours without danger of bloat. In color, alfalfa silage is a light brown, nearly tobacco-colored, has an agreeable odor, and is relished by the stock. If fed outside, it should be fed in racks instead of bunks, to avoid waste.

"According to reliable authority, alfalfa does not make as good silage as many other crops that are used for silage, as it is lacking in sufficient sugar to produce the proper fermentation. However we have secured better results from alfalfa silage than from any kind used; but not enough better to warrant its use in place of the crops ordinarily used."

FUNDS FOR FARM LOANS.

To the Editor: Can you advocate the enactment of a law by Congress to allow the Postal Savings Banks to buy the bonds issued for rural credits? It is the safest investment for such money or the money of estates or widows, and if the amount of money that each one could deposit in postal banks was raised, I believe that an abundance of money could and would be deposited for all rural needs, and the bonds could bear a very low interest. I with others would like to borrow on farms, but fear the first issue will bear a higher rate of interest than later ones.—J. B. G., Napa.

This matter was very strongly urged upon the attention of Congress before the enactment of the existing law and found impracticable at present, at least. There is no use agitating the question until this law has had trial on its present provisions. It may be very important later. As for getting stuck on higher rates than may be available later, the mortgagor can release his debt by buying and surrendering bonds which have run five years from date of issue and that will cancel his loan and mortgage at any time. It is hardly likely that such bonds will be worth premium enough to make the operation expensive.

SUDAN FOR FOOTHILLS.

To the Editor: Is it necessary that Sudan grass be grown on loamy ground or will it do well on ordinary red soil? Does it have to be irrigated the same as alfalfa or can it be grown to advantage with one or two waterings or without water at all? What time of the year is the best time to sow it? When is it fit to cut? How many pounds are sown to the acre?—H. J. A., Fourth Crossing.

It will do well on ordinary red soil if the climate is warm. An irrigation or two are very desirable, but monthly irrigations are unnecessary. Plant it broadcast about 20 pounds per acre or in drill rows 32 inches apart about 3 pounds per acre after danger of frost is over and the

ground warm. Mow it for the best quality of hay at full bloom; but to get two or three cuttings you may have to cut it less mature. It will ripen seed in about three months from sowing. Be sure the seed do not contain Johnson grass. If in doubt, send a sample to the University for a free test.

Kerman farmers have organized a permanent Farm Bureau local with a membership of more than 150.

NITRATE OF SODA FOR APPLES.

[Written for Pacific Rural Press.]

Nitrate of soda increased the size of fruit when sprayed on apple trees and when applied to the soil, in experiments conducted by Prof. C. I. Lewis of Oregon Agricultural College. The thrifty green of the trees was noticeable a mile away in comparison with untreated trees nearby. The same amount of nitrate was ap-

plied to each tree whether in the spray or on the ground; and the difference was slight in total production per tree. But of sizes larger than 100 per box the sprayed trees produced 33 per cent; those treated with dissolved nitrate on the ground produced 48 per cent; and those to which dry nitrate was applied produced 68 per cent of sizes over 100's. Untreated trees produced only 5 per cent larger than 100's.

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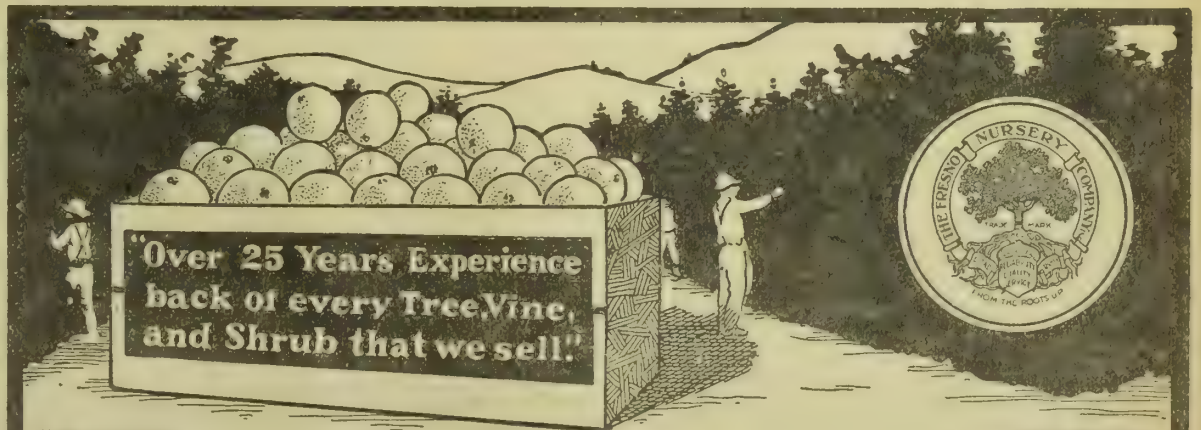
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Cheap, Effective Flood Control.

[Written by F. M. Olmstead, Los Angeles, to San Diego Chamber of Commerce.]

As promised, I send you the following notes on the subject of Flood Control:

The "Levee System Only" has almost invariably proved a disappointment for flood control wherever it has been tried in the whole world, so far as I have been able to secure data. Large storage reservoirs, where possible, when used for flood prevention, are the surest remedy against flood damage; but it is seldom that good reservoirs exist, and it is prohibitive generally from financial reasons to use them solely for protection against floods. To combine the use of a reservoir for storage, for irrigation use and as a regulator for flood flows, in many cases, such as exist in San Diego county, there may be practically a combination of these uses; but I maintain that there is need of a clear definition as to whether any large dam built to store water is primarily a conservation proposition or a flood prevention measure.

Many of the rivers in the old country are leveed, and releveed until the beds of the streams are as high as the roofs of the houses. Here in California the streams come out of the mountains riding on top of the detrital cones.

Now if clear water alone was to be provided against, these levees would probably be the best, simplest and most permanent protection, but this is not the case. The waters of any mountain stream come down a channel of very steep gradients, which gradually, or possibly at one point, are pronouncedly reduced, creating conditions in the water course that sooner or later spell disaster.

A stream running five feet a second has three thousand times the transporting power for moving detritus along down the channel that a stream has which runs one foot a second, or, differently expressed, a mountain stream running five feet a second will drop 2999-3000 of its load when the grades change to one foot a second velocity, other factors of flow remaining equal. This means at these points where grades change to lesser, the sand, silt, cobbles, etc., are deposited until the stream breaks over the levees or restraining walls and seeks better grades. This almost uniformly has been the ultimate result of levee construction alone.

Cheap Check Dams Stop Silt.—The system of check dams in mountain streams, which has of late frequently been called the "Olmstead Check-dam system," has been used

for at least forty years in the old country, and I cannot claim more than to have recommended it to Los Angeles county. The system I advocate is a combination of small, inexpensive checks made of rock or timber, or of both rock and timber, in the small mountain ravines, and the loose rock dams (porous, but substantial) at certain favoring narrows in the larger canyons. With the opportunities which naturally exist in most watersheds, the danger from flood damage can be at least wonderfully minimized, by substantially reducing the crest of the flood and by eliminating most of the silt, sand, gravel, etc., that menace the restraining walls below.

It would seem that this system would long ago have appealed to observing men everywhere as the one sensible first thing to do. It is inexpensive; and of necessity, to some extent, conserves the golden water crop, which, moving down in flood flows, so seldom does anyone good and so often does many harm.

The data on hand for estimating the benefits to be derived from check dams are first the foreign work of Austria and Switzerland, about which the United States Government furnished me information in 1915, and second, the results of my own observations on the work of the Los Angeles County Experiment Station in Clear Creek, Big Tujunga, and the check dams built during the last two years in Haines Canyon. The knowledge we have of foreign work is derived from authentic data, but not greatly in detail. We only know that immense sums of money have been spent in controlling mountain torrents by check dams, and that the work is based on the theory that grades must be reduced below the debris transporting power of the floods to be able to maintain the confining structures below.

Our Own Work in Los Angeles County, although observed only over two flood periods, and most of it only through the floods of 1915-16, is entirely reassuring. The exact degree of reduction of flood water peak is unknown, and the exact degree with which the low water supplies of a treated watershed are reinforced are still in question, but that the flood crest will be decidedly reduced under average conditions and that the minimum summer flow will be greatly improved, there is no doubt in my own mind from my own observations. There is no need in any particular district to depend upon what has been done in Europe or even in Los Angeles county. A few dollars spent in checking any mountain stream in San Diego county will show the zone of saturation extending out into the crevices of the rocks and the interstices of the disintegrating side slopes from the immediate flood channels, and the vegetation springing up, so that when the next succeeding rainy season sets in there will be observed altogether new conditions; the stream will be running clear and this clear water will be seeking entrance into every possible opening in the soil under the heads created by these little dams. The conditions will be

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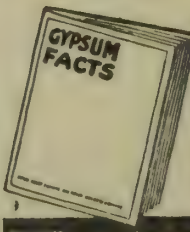
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MISSION OLIVES EARLY RIPENERS.

THE EHMANN OLIVE CO.

Oroville, Cal., Nov. 17, 1916.

Mr. W. A. Hayne, Box 461, Marysville, Cal.

Dear Mr. Hayne: Answering your kind favor of the 15th, I am enclosing herewith photograph of some of this year's fruit on the Fogg grove, and you will note that they are above the average Mission. We also were able to harvest this entire crop before the frost, which shows that they are early ripeners.

We will be glad to keep in touch with you on this matter, and if we can be of any further service, don't hesitate to let us know.

Yours very truly,
(Signed) E. W. EHMANN.

I propagated the Fogg orchard thirty years ago. The origin of the Fogg trees was directly from the old Mission at Santa Barbara. The trees I have now for sale are full brothers to the Fogg olive trees, and like the Fogg trees, they are all propagated from the large size cuttings.
W. A. HAYNE.
Box 461, Marysville, Cal.

different, so that the more water that is passed into and through the thirsty soil the more open the interstices become, instead of being quickly clogged up with the silt as before. This particular detail is of greater importance than at first thought possible. Any surface covering of the earth soon becomes highly porous from the action of an infinite variety of insect and animal life, but generally after the first rush of flood waters carrying alumina binding material, there is formed a matrix that more or less effectively seals over any minute opening over which the flood has passed.

The stability and cost of these small dams have been fairly well demonstrated by the Clear Creek and Haines Canyon work. Structures that would be indefensible from an engineering standpoint, if placed in a stream uncontrolled above, are perfectly secure when placed in line below a string of structures that have subdued velocities to not over four feet a second. The average cost of the many structures so far built under my direction has not been over \$20 each when separated from overhead and trail building expenditures incidental to the work. Trail building and overhead charge will have to be added in almost every case, but in any particular estimate the relative importance of these factors can readily vary from two to

thirty per cent of the cost of the whole work, and should be considered separately when discussing the actual cost of the building of the retarding structures. The general treatment of a watershed, as well as the location of the structures and the detail plans, should all be intelligently planned, having in mind the amount of money available. Especially is this true where only a limited amount of money can be had, for in this case structures in certain places have a more positive effect in diminishing the crest out of the whole watershed than if located elsewhere.

Since I first commenced to make careful observations on the relative flood run-off of different canyons and to co-relate these run-offs to the natural conditions back in the watersheds themselves, I have been surprised to note the wide range of discharge from adjacent watersheds where the rainfall itself must have been much the same.

If the people of San Diego county will only commence to study their own problem in detail they will find that without prohibitive expense, and whether the U. S. Government or any great private enterprise goes ahead with the work, they, themselves, can, if they will combine, furnish their own relief against ordinary flood conditions and add very materially to their minimum water supplies.

Sugar Beet Growers Organizing.

[Written for Pacific Rural Press.]

Sugar beet growers of Santa Clara county have started the ball rolling for a higher price than they got last year and are being offered this year. Ten white growers representing practically all of the 800 acres produced last year in the Milpitas district, have petitioned State Market Director Weinstock in the following words, and Mr. Weinstock has agreed to address a meeting of the growers at Milpitas Jan. 3.

"We, the undersigned growers of sugar beets, request that an investigation be made by you and advice given, whereby we may be aided in obtaining better prices for our crops. In view of the high prices which have prevailed for the past two years, and the likelihood of their continuance, we believe the prices we are obtaining are not what should be had."

Sugar beet growing in the Milpitas district revived two years ago with perhaps 600 acres. Last year about 9,000 tons were produced on 800 acres according to A. M. Standish, one of the signers of the petition. Only two factories are near enough to use the beets of this district, the Alameda Sugar Co. of Alvarado and the Spreckels Sugar Co. of Spreckels. Both have paid \$5.50 per ton for the past two years at Milpitas, the former paying a flat rate. They are now offering to contract at \$5.50 for 16 per cent beets, with 25 cents per ton extra for each additional per cent of sugar.

The growers feel that \$7 would be a fairer basic price. Sixteen per cent beets yield 320 pounds of sugar per ton, which the factories have been selling around \$20, of which the growers got \$5.50.

Since tomato canners are offering high prices and beans are very prof-

itable, much of the Santa Clara county beet acreage will be devoted to these crops unless beet prices are raised.

IRRIGATION COST.

To the Editor: What price can one pay per acre or by the inch for water for irrigation in the foothill region and make the investment pay? W. H., Angels Camp.

It depends on the kind of a crop you can grow, how much you can grow of it, and how much net profit you make in marketing it. You could pay very much for water to irrigate vegetables if you can sell them well; and very little for hay. For shipping-fruits in the Placer county foothills they are paying \$45 per miner's inch per season of 5 months, getting that amount of water in multiples and by turns. This irrigates about five acres as they irrigate. A miner's inch running continuously would cover an acre one inch deep in about 50 hours.

SULPHUR AND GYPSUM FOR ALFALFA.

To the Editor: Would it be better to mix sulphur and gypsum for alfalfa than to use gypsum alone?—Sub.

[Answered by J. M. Bomberger, Modesto.]

At present prices of sulphur and gypsum, it is more economical to use all gypsum. Sulphur alone has not shown good results on old alfalfa that evidently needed other plant foods besides sulphur. Sulphur seems to require the presence of stable manure for best results.

A syndicate of San Jose capitalists, headed by Wm. C. Anderson, has purchased 610 acres in the Linden section. In the spring the land will be set out to walnuts.

"Second Thousand Answered Questions in California Agriculture"

(Sequel to "1000 Questions in California Agriculture Answered")

By Edward J. Wickson,
Editor Pacific Rural Press

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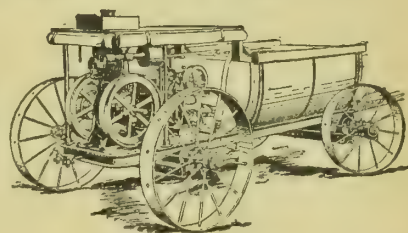
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PUMP AND EARLY SOWN COVER CROPS HELPED MAKE POOR PRUNE ORCHARD PRODUCTIVE.

[Written for Pacific Rural Press.]

A 28-year prune orchard that bore close to 70 tons green on 18 acres last season is to the credit of G. W. Cox of Santa Clara county, where many such old orchards are bearing less than half that much.

"Four things you must do to get prunes," says Mr. Cox: "Prune right, cultivate well, give it water and lots of it, and grow a cover crop to turn under."

For many years this orchard did not bear over 1½ tons green per acre. It was on light soil from which brush had been cleared, and on which natural grass had never grown. It was producing about eight sacks of barley or five of wheat before the trees were planted.

For ten years he tried to grow bur clover without inoculation or nitrogen fertilizer, though some potash and phosphoric acid had been applied. Finally natural inoculation was worked up to the point of giving a good crop of bur clover in 1912-13 and each year since. It grew 2½ feet high a year ago last winter. Last winter's crop dried up because he irrigated, then sowed bur clover in October and waited for rains which did not come soon enough.

Another irrigation could have been given, but the preferred way now is to sow and then irrigate; because if irrigated first, it must dry enough

to cultivate before sowing—then it gets too dry to sprout the seed properly. About 50 pounds of seed are broadcasted on the 18 acres. It is plowed under in April, though if irrigated and allowed to grow longer, it would make that much more humus and nitrogen.

Early sowing of the cover crop is made possible, and late plowing also, by the well which has been put down since the two dry years reduced his crop. A gas engine lifts 600 gallons per minute 120 feet and supplies both Mr. Cox and a neighbor.

BREAKING HEAVY MARSH SOD WITH TRACTOR.

[Written for Pacific Rural Press.]

On the ranch of the Napa State Hospital there are several hundred acres of low bottom land which formerly overflowed from a nearby slough in the winter months, making it of little value for farming purposes.

In late years, this land has been reclaimed by the erection of a small levee that protects it from the overflow water. While there is still more or less salt and alkali in the soil, deposited there by the tide waters, good grain crops are grown on it after the first year's plowing.

In its virgin condition this soil is covered with heavy marsh grass sod and tules, presenting an almost impenetrable condition for the plow even when a large tractor is used. On that account a double disk is hooked onto the track type tractor and run both ways across the field

before plowing is attempted. This cuts the heavily matted sod and the top portions of the roots into comparatively small pieces. When the heavy disk plows are attached to the tractor for final plowing, it is only necessary to cut the roots in the bottom of the furrow. This makes a much finer seed bed possible; and after being exposed to the weather in this manner for a year, the land has produced as much as 24 tons of silage corn to the acre.

AUTOMOBILE HISTORY.

[By C. S. Rieman, Elgin Motor Car Corporation.]

The first internal combustion engine was invented by Abbe d'Hauteville in 1678, in which the explosive power of gunpowder was employed to drive a piston in a cylinder. This was the forerunner of the modern gasoline engine. Some years later John Street developed an engine operated by liquid air ignited by a flame. The first internal combustion motor which used gas

was invented in 1884 by Gottlieb Daimler. In 1885 he successfully applied this engine to a bicycle, and in 1886 Carl Benz invented his Single Horizontal Cylinder, water-jacketed engine, which he applied to a three-wheeled carriage. The first practical gasoline automobile built in America was constructed by C. E. Duryea in 1892, but it was found to be under-powered.

In 1894 he built a new four-cylinder car which proved quite successful in the Chicago "Times-Herald Race." The first automobile endurance race of international importance was held in France in 1894. Two Panhard machines contested. Both claimed a 3.5 horse power and were driven by Messrs. Panhard and Peugeot. In 1895 the second automobile endurance race was held in France and covered a distance of 1,730 miles at the then remarkable average speed of 15 miles per hour. Six years later, however, the same course was covered at the rate of 50 miles per hour. In 1897 at the

Highest Competitive Awards

at both the San Francisco and San Diego Expositions, were given to Zerolene—an oil made from asphalt-base crude.



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You can PLOW—20 acres a day at a cost of 40c an acre, as did Mr. Hughes, of Kahlotus, Washington.

You can DISC—30 acres a shift at a profit of \$25, as did Mr. Morrison in Sutter County.

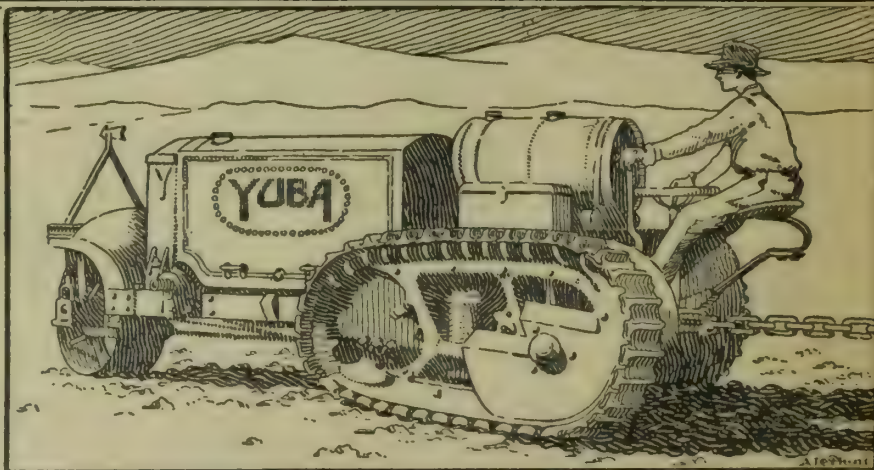
You can HAUL—426 sacks of barley on one load, as did Mr. Leathers, of Woodland.

You can do ROAD WORK—receive pay for 96 days out of 100 working days, as did Mr. Russell, of Saratoga.

You can plant eight rows of beans at a time, as do Chew Mock and Chew Fook.

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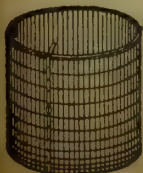
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Paris-Trouville road race, a speed of 29 miles an hour was developed in a gasoline automobile. What a difference today. Not long ago a 300-horsepower car raced at a terrific speed of 143 miles an hour. Even pleasure cars easily run off 50 miles an hour. What next?

ELECTRICAL EFFICIENCY ON A DAIRY.

[Written for Pacific Rural Press.]

The profitable uses to which electricity may be put on the farm seem almost endless in scope; and particularly is this true where districts are favored by a low rate, as is so often the case in California.

In illumination alone, electricity has a place on every farm, as was evidenced by a recent visit of the writer to a large dairy in Stanislaus county.

Besides lighting the dwelling and the interior of the barns and stables, this dairyman had erected high candle powered globes on lofty poles in front and back of the residence, in the horse corral, near the hog pens, in the cow corral and between the silos and dairy barn. Both of the silos were lighted on the inside also; and we were told that early morning or late evening work could be performed as well, with the strong illumination of these lights, as in the middle of the day, at a cost very low in comparison to the added efficiency of the hired help.

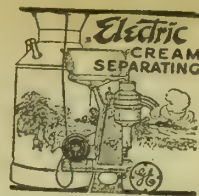
But illumination was only one of the electrical advantages. At the well was installed an electric motor to furnish the power for pumping the water into a high water tank which furnished water to the various parts of the ranch and also provides excellent fire protection. Cream separator and washing machine were also run by electric power facilitating the work and reducing labor cost in both instances.

AUTO-TRACTOR ATTACHMENT.

[Written for Pacific Rural Press.]

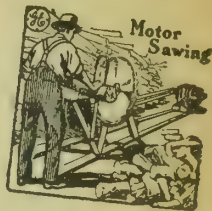
Another effort to utilize a small automobile as a tractor is now on the market to pull two plows. The auto wheels are replaced by tractor wheels, the rear ones being large and heavy to get good grip on the round. Pinions are put onto the driving gear of the car to run in a cog circle inside the rim of the wheel. The power of the car is claimed to be multiplied 13 times by the gear reductions which make it travel slowly enough for plowing while the motor runs at the speed used for 18 to 20 miles per hour as an automobile. The outfit is cheap and easily put onto or off from an automobile, and it opens a use for second-hand cars as well as those being used regularly.

It must always be remembered that a tractor works steadily for hours at a time; while the high-speed automobile engines are not always designed for unremitting work, the down grades giving them a chance to rest and cool off. However, the man who has only a little tractor work or who could use a tractor for only a short season of the year, and who is willing to watch his cooling and oiling apparatus, can have the use of his machine as a touring car when he isn't plowing or hauling loads, etc., with it. This avoids idle investments.



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Just a glance at these illustrations will show you a few adaptations of



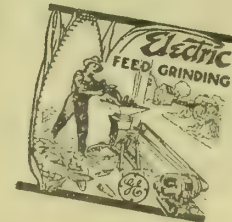
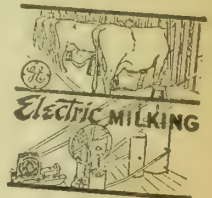
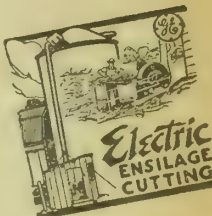
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General Agricultural Review.

FIELD CROPS.

The rice season has practically closed.

The prospects for a season of heavy tree planting are not good around Stockton.

More than twenty growers of potatoes of the famous Fruit Ridge district near Placerville have formed a potato growers' association.

Application has been made to the State Railroad Commission to have rice classified as stock feed in order that it may take the lower railroad rate.

The Spreckels Sugar Co. has purchased 449 acres one mile east of Manteca, in the South San Joaquin district, as a site for a \$2,000,000 sugar refinery.

It is said that Balfour-Guthrie Co. plan to erect a cotton seed oil mill at Calipatria before another season. Calipatria is also to have a meat-packing house.

It is announced from Calexico that a cotton-picking machine has been invented there that promises to solve the labor question for the cotton growers of Imperial Valley.

Northern California can grow cotton, says the Gridley Globe, both the short fiber and long fiber varieties, but cheap labor to make cotton growing a success is not available.

The distribution of \$166,532.90 to the members of the Ventura Lima Bean Growers' Association has been made by Secretary Frank J. Sifford. It represents the December payment for November deliveries.

Geo. Hecke, State Commissioner of Horticulture, has visited Gridley, Butte City, Hamilton and Chico sections to look into conditions as they relate to Johnson grass, the yellow star thistle and other noxious weeds.

One step towards the eradication of the yellow thistle pest in some sections will be the planting next spring of several hundred acres of sugar beets. The sugar beet is known to be effective in destroying the thistle.

Inspector Frank Reading has just given out the official figures for Imperial Valley for cotton ginned prior to December 1 which shows that the output for the present year was almost double that of 1915 in the valley.

Ranchers in Kings Co. are hard at work preparing for the coming season, which will see approximately 200,000 acres in the lake bottom lands in grain alone. This should give the district under ordinary circumstances more than 5,000,000 bushels.

In the vicinity of Bogue in the Sacramento Valley the pumpkin has been placed on a paying basis. The Libby, McNeill and Libby Co. is operating its canning plant day and night and the growers are being paid \$3 per ton, which averages from \$40 to \$50 per acre.

The big crop of rice grown in the Oakdale district this year is being used to feed poultry and hogs. The rice mills are offering about \$1.75 per hundred for rice this year, while without being hulled or polished it is worth \$2 as chicken and hog feed,

and is thus cheaper than either barley, oats or wheat.

Tulare honey, made from orange and alfalfa blossoms, has been made for account of a San Francisco brokerage firm to the commissary of the British army at Liverpool. This is the first of several such shipments which will be made during the present season.

Two hundred and fifty acres are planted to lettuce in the Fullerton district, according to Arthur Osborne, manager of the vegetable department of the Benchley Fruit Co. The yield per acre is approximately 350 crates, bringing the grower \$175 an acre or 40c a crate.

It is announced from Pomona that men have been sitting up nights to kill bugs in Pomona Valley this month. The Growers' Fumigation and Supply Company of Pomona had eleven fumigation gangs at work in an effort to finish its winter campaign against the scale before the end of the year.

H. J. Stephens, president of the Pacific Rice Growers' Association, advises California rice growers to hold their rice crops, as California rice is the only rice on the market. Rice in the Southern States is practically in the hands of the millers, no independent rice being on the market at the present time, he says.

It is estimated that 150 carloads of beans including blackeyes, Teparys, pink, red Mexican, Navies and Lady Washington will be shipped from the Turlock district this season. The average value of these cars is \$2200, making a total of \$330,000 for the entire crop. Approximately 500 cars of Egyptian corn will be shipped from the Turlock district and will add about \$300,000 to the wealth of the farmers.

Sugar beet growers around Milpitas claim that they have not been getting enough for their beets in the face of the high price of sugar. They want Harris Weinstock, Market Director, to investigate their troubles and see what can be done to improve matters. Allen M. Standish, one of the growers, hoped for a State organization similar to the raisin and prune growers' associations, and steps to that end are now being taken.

The final estimates of this year's production of the country's principal farm crops, announced by the department of agriculture, are: Corn, 2,583,241,000 bushels, compared with 2,732,457,000, the 1910-1914 average; wheat, 639,886,000 bushels, compared with 728,225,000, the five year average; oats, 1,251,992,000 bushels, compared with 1,157,961,000, the 1910-14 average; barley, 180,927,000, against 186,208,000, the 1910-14 average.

All records for value of the country's important farm crops were exceeded this year, despite the smaller size of the crops. Their value has been placed at \$7,641,609,000 by the Department of Agriculture in its final estimates of the year. This is \$1,750,000,000 more than the same crops were worth last year. Higher prices, due partly to reduced production and partly to the demands for

American food from the warring nations of Europe, were responsible for the vast increase in value as against decreased production.

CITRUS, NUTS, SEMI-TROPICAL.

Receipts from the orange groves of Ojai Valley for this season were \$136,850.

The Federal authorities have prohibited the entrance of frosted oranges into interstate commerce.

Shipments of oranges from the Lindsay district up to December 19 were 1200 cars, which is 50 per cent of the crop.

E. B. Collier, well-known fruit man of Corona, has taken the management of the Central Lemon Growers' house at Villa Park.

It is said that the fumigation of Tulare county citrus orchards to control the gray scale during the year 1916 cost the growers \$38,361.

The loss to orange growers in the Fresno section on account of frost will be somewhere between 25 and 50 per cent, according to estimates of growers.

A heavy lemon crop is in view for Santa Barbara Co. this season, according to local fruit dealers. The "snappy" weather has had no effect on the fruit.

One lot of oranges sent from the Hermosa Colony, near Porterville, sold in the Chicago auction at \$4.10 and another lot from the same colony in the Canadian market at \$4.05.

Commission merchants of San Francisco are objecting strenuously to the unloading of cull oranges on the local markets, and several of the houses have refused shipments of this nature.

Growers in the lowlands of the San Joaquin valley were the heaviest losers from the frost this year. The frosts of last October, together with the recent frosts, spoiled practically their entire crop.

The weather has been quite frosty throughout Southern California the past week and smudge pots were lit every night in the orange orchards. So far no serious damage has been done to the growing fruit.

E. P. Rouillard, Co. Horticultural Commissioner of Fresno Co., recommends the local Board of Supervisors to revoke the ordinance enforcing the 8-to-1 test before next year's crop is put on the market.

Orange growers of Fresno Co. claim to have lost in the neighborhood of \$90,000 on the season's orange crop because of the 8-to-1 sugar and acid test, according to C. A. Campbell of the Stewart Fruit Company.

Jeff Walbridge of Orchard Dale, near Whittier, is growing successfully the thin-skin variety of a Mexican seedling avocado. It is of medium size, skin deep purple, seed small, and pulp delicious, and free from strings.

All the fourteen big packing houses of Lindsay have announced that they will resume packing operations soon after the holidays and that from present indications the season will be extended for six weeks after the resumption of work.

Most of the orange crop in Orange Blossom Colony was ruined by the killing frost when the thermometer dropped as low as 22 degrees, according to the Oakdale Graphic. Part of the oranges already had been picked and shipped, so the season is not a total loss.

The Pasadena Orange Growers' Association reported unusual heavy shipments of navel oranges for the Eastern Christmas trade. The Sparr Fruit Company, the only independent concern operating in Pasadena district, made the heaviest early shipments in years.

More than 200,000 select fruit-bearing buds from citrus trees with known performance records have been placed in the hands of co-operators of the Bureau of Plant Industry of the United States Department of Agriculture, who are to per-



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mit the Department to secure progeny records from the trees so propagated.

The first dividend on Pool No. 1 has been received by members of the Butte County Citrus Association, netting the growers \$2.64 a box for navel oranges. The selling price, f. o. b. at Oroville, was \$3.16 a box, from which was deducted 52c for packing and selling.

The orange shipments from the Redlands district up to December 15 reached 296 cars, compared with 82 cars last year. The tests made by the various packing houses of Redlands show that practically all of the fruit in the district that is well colored will pass the 8-to-1 test.

Basing their statements on total acreage of fruit signed up at the beginning of the year, and figuring from shipments which have been made to date, Porterville packing house managers declare that not more than 6 or 7 per cent of the oranges of the Porterville district were damaged in the frosts.

A meeting was held recently in Riverside of committeemen representing eight southern counties of California urging on the Southern California legislators preparation and support of a bill for an appropriation of \$500,000 for the establishment of a farm school in connection with the State Citrus Experiment station.

C. W. Buswell of the Sunnyside section, near Porterville, is another who has demonstrated the value of orchard heaters. During the recent cold snap Mr. Buswell kept smudge pots burning near his lemon trees which are carrying a crop of 5,000 or 6,000 boxes, the result being that he was able to keep the temperature above the freezing point. Had it not been for the pots Mr. Buswell believes that his crop would have been frozen.

C. M. Brown of the Golding Banner Packing House, Redlands, says the 8-to-1 test is not fair. The fruit that was well colored tested over 15 per cent of sugar, but had enough acid to make it impossible to pass the 8-to-1 test, the ratio being about 7.22 to 1. The tests were made by Homer P. D. Kingsbury and Mont. P. Chubb, both chemists. The fruit that was not colored had about 9 per cent of sugar and only a small amount of acid, it passing the test by 9.15 to 1. Mr. Kingsbury tested fruit for all parts of the district and several samples from each grove to show that the 8-to-1 test could not be adopted without testing all the fruit packed, which would be impossible.

DECIDUOUS FRUITS.

Recent estimates place the unsold supply of prunes in California at 10,000 tons.

The Sebastopol Berry Growers made a payment of \$10 per ton on berries of the 1916 crop this week.

It is announced from Bryn Mawr that the deciduous fruit crop promises to be the biggest next summer for some years.

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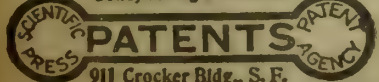
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Over \$89,000 in net proceeds and dividends were paid to its growers this season by the Penryn Fruit Growers' Association.

A most successful meeting of the Prune and Apricot Growers' Association took place recently at Oakley, Contra Costa county, at which all of those present signed, or had signed, the merger agreement.

Two hundred and fifty-five acres at Ramada are to be planted this season to prunes alone, according to a statement made by Butte County Horticultural Commissioner Earle Mills. There will also be considerable planting to almonds and figs, he says.

F. H. Dietrich, representative of the California Prune Growers' Association, has been in Yolo county explaining the plans of a co-operative system of marketing. It is said 45 per cent of the State crop is in a pool and that 70 per cent will make an "air-tight" market.

Reports from 450 cold storage plants in the United States show that their rooms contain 2,603,584 barrels and 3,913,290 boxes of apples. On Dec. 1, 1915, holdings by cold storage plants were 4,213,202 barrels and 3,684,557 boxes. Apples are moving out of cold storage in San Francisco at the rate of two carloads per day.

GRAPES.

The Acampo Fruit Growers' Association shipped 52 cars of grapes on which they averaged \$1,308.84 per car this season.

Checks for 8 per cent dividend on the capital stock of the California Associated Raisin Company have been mailed to about 3700 stockholders. The dividend will amount to about \$80,000. Last year it was 6 per cent.

Table grape growers in the Alta district near Dinuba says the past season was the most profitable in the history of the industry. Carrah Brothers are said to have marketed from their eighteen-acre vineyard, half in Malagas and half in Emperors, \$9,000 worth of grapes.

An option has been taken on the Ripperdan ranch, lying south of Madera and consisting of 1600 acres. The prospective buyer is Krikor Arakelian, the reputed cantaloupe king of California. It is understood the property will be improved at once, and 160 acres planted to Thompson seedless grapes and the balance cultivated the following year.

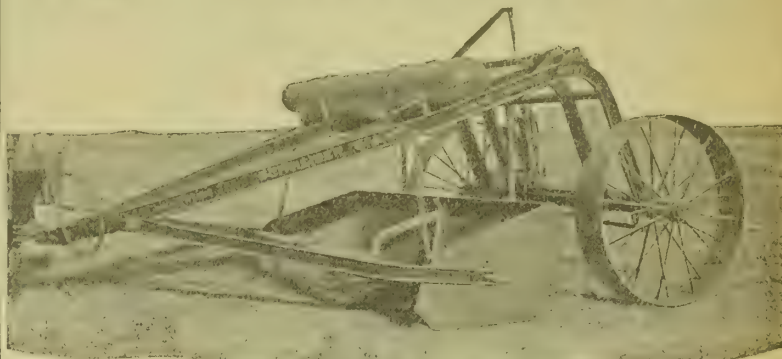
Special Agent Webster of the Department of Justice, who has had personal charge of the local Federal inquiry into the high cost of living, has turned over to the United States district attorney his findings in connection with the so-called "raisin trust," that has headquarters in Fresno. The investigation in this section of the country was largely confined to looking for possible violations of the Sherman anti-trust law.

THE RAINS IN SOUTHERN CALIFORNIA.

The whole of Southern California has been drenched the past week by the heaviest December rain in many years. The storm ceased Sunday night, giving us a bright, clear day for Christmas. Showers were again had, however, on Tuesday. The rain was a gentle one, and will do much good to put the soil in excellent condition for spring work, and adds an inch more water to the subterranean channels than usual this time of year. The precipitation from the first rain was (at Los Angeles) 2.52 inches, and for the season 6.81 inches, against 3.21 inches the same time last year. At Glendora the rainfall was 4.05 inches, and for the season 11.01 inches, against 6.02 inches the same time last year; at Covina this storm was 2.78 inches; for the season 8.55 inches; Riverside this storm, .90 inches, for the season 3.56 inches, and the same time last season 2.86 inches; Santa Ana, this storm 2.25 inches, for the season 5.75 inches, and the same time last season 3.14 inches.

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Livestock Facts and Fancies---XIV.

[By the Editor.]

Rumination upon the suggestion made in this place last week, that there should be recognized by our great California cities an obligation to contribute more definitely and directly to the building up of the State's industries by substantial contributions to the advancement of our livestock interests, certain practical points arise which seem worthy of consideration. Obviously there are two directions in which progress should be striven for.

First and fundamental is the placing within reach of our farmers a better supply of purebred sires of all desirable classes of farm stock. We are not attacking that problem in the right way in California. We have already intimated that we had such a conviction, and we may have more to say about it at another time, but we will not pursue it now. The fact remains that we have not an adequate supply of purebred sires. Take, for example, Shorthorns, for the breeders of them have most recently moved toward broader, organized, co-operative effort. It was stated at the meeting, to which we alluded last week, that one could not find a hundred Shorthorn bulls of the right age and quality purchasable in this State at this moment. This forces owners of large herds to buy bulls by the carload in the Middle West or eastward, at considerable cost and some risk, and sends all that money to build up the pure-breeding interests of distant states. Probably there are other breeds which are just as short in the locally grown supply of that great agency toward the improvement of our whole animal product—the purebred sire. It requires enthusiastic interest and confidence, capital and publicity effort to make our California sire-supply adequate and adequately recognized and patronized. The average farmer, no matter how enthusiastic and experienced he may be, cannot accomplish all this. He needs capital, alert business promotion and responsive public interest. These are the things which city land owners and money investors are best equipped to accomplish for the State and for their own better health and broader citizenship.

Second: the effort for the upbuilding of our pure-bred interests on the business side, should be given an institutional character. Things are now going, as never before, by organization, and the fruit of organized effort is an institution. California is now shining in the eyes of the other States as the land par excellence of organization and of incorporation for great and specific purposes. We are making corporations of our own in the public interest and

we are regulating corporations organized for private purposes, to an extent unknown in other states. Public utility corporations, protective corporations of producers to regulate produce distribution and hosts of other organized efforts to keep the sky blue and trespassers off the grass, are thriving in this State and bringing us either reputation or notoriety, according as one likes them or not. We will not rise to a question of taste, but it is clear enough that these institution-building forces are very influential in the common life of the State and their efficiency as compared with unorganized individual efforts, even if they proceed from the same convictions toward the same purposes, is indisputable.

Third: in the advancement of the livestock industries of California we have just scored grandly in one line of institutional achievement—the educational. By virtue of its deeds the animal industry division of the College of Agriculture has arrived at a condition needing neither apology or promotion. It will need funds for fuller equipment and extension of its influences, and it will always need funds. We have an idea that the University Farm needs new and fuller equipment for research, instruction and demonstration in livestock lines. We believe it needs stock farms in different sections operated with animals belonging to special lines which different geographical districts particularly favor—practically operated stock farms to which groups of graduated students can go for training by actual participation in producing operations. In this way it may in due time have farms on which range work, herd work, flock work, etc., will be provided for as finishing courses in practical operation. We do not need to worry about that now. We may accept the fact that institutional work on the educational side has arrived in California and will show the force needed for its enrichment and extension.

Fourth: passing this point, what then do we need of an institutional kind for the advancement of the animal industries in California? Many things, perhaps, but we think of two which are so fundamental and indispensable that if they are successfully provided their operation is likely to bring the fulfillment of all other needs in their train:

One is the establishment and maintenance of an open livestock selling institution in San Francisco. We do not say that open livestock markets are not needed at all central points. If so they will come as soon as we have broken down the barriers of blind-selling which now exist

and which make it impossible to tell what a carload of any stock is actually worth or what it can be calculated to sell for on its merits at any time. Published market figures are opinions, not facts, and these opinions too often represent what buyers desire to buy for rather than what they are actually willing to pay. Possibly they are sometimes put forth to smooth the pathway of the traveling buyer into the affections of the country seller. But we do not need to inflame the subject. Country sellers know how it is and language about it which would represent their feelings might set this sheet on fire. Every one knows we cannot get livestock producing anywhere near its duty and opportunity in this State without some sort of an institutional selling outfit which will be open, fair and clearly intelligible to all interested in buying and selling.

The second institution which is indispensable, and which would naturally associate itself more or less with the first, is a regularly established institution for exhibition and sale of breeding stock. It must be an annual stock show in San Francisco where all ways meet and where all people come and where prizes are hung up largely and freely so that breeders and feeders will be justified in going to effort and expense to do their best for public education and entertainment. This sort of thing San Francisco must provide, equip and endow or hang her head in shame for inability to hold her own against the greater enterprise and patriotism of smaller towns along the coast. Will San Francisco give the livestock industry such an institution as it needs and which she herself cannot afford to withhold?

In addition to great local institutions in the livestock interest which shall lead and command the California field of production we need

an effort on the part of all local organizations, small and great, to put us in the sphere of influence of national organizations. We need at this moment to catch onto the movement started by the "National Conference on Marketing and Farm Credits" held in Chicago December 4 to 9 ult., which made this declaration:

We earnestly urge upon Congress the imperative need of a prompt and thorough investigation by the Federal Trade Commission (assisted by the Department of Agriculture) of the marketing of livestock and the meat packing industries in this and other countries. We urge that this investigation be followed by a report with constructive recommendations for the improvement of the conditions and methods under which livestock is marketed, and the products thereof manufactured, distributed and sold.

Such an investigation will show us what is the matter with our stock selling and how conditions may be improved.

CALIFORNIA Hog Book

A Practical Treatise on Hog Raising in California

By W. S. Guilford,
Director of Agriculture, Sacramento Valley Irrigation Company and a practical swine breeder.

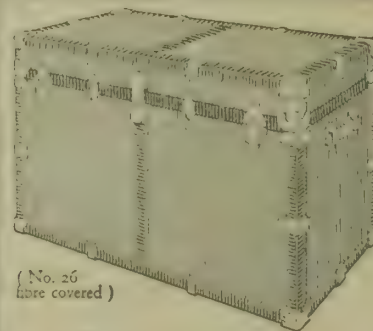
First Edition—1916
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RICE FOR STOCK AND POULTRY.

To all our friends who read Mr. Barnard's rice communication recently, Greeting: Rice for feed seems unavailable. The \$5 price in the communication was a typographical error. It should have been \$35. But we find that San Francisco mills have sold themselves out of cracked rice at \$40 to \$50 per ton; though more may be available early in 1917. Rice bran may be had at \$25 per ton. Its composition is about 5.3 per cent digestible protein, 45 per cent carbohydrates and 7 per cent fats, varying according to who puts it up.

Finding the Good Cows by Testing.

[Written for Pacific Rural Press.]

If one could compile all of the surprises that are met in weighing and testing the milk of dairy cows, he would have a book full of facts so convincing in character as to convert the most skeptical dairymen into seeing the need for cow-testing work.

It surely does seem strange that dairy cow owners will hatch up so many excuses for not weighing and testing the milk of their cows when they alone are to be the benefactors.

Just as an example of the early returns that are sometimes encountered, the story of the Riverina Farms' first month's experience in the Stanislaus County Cow Testing Ass'n is of interest.

The herd of 25 grade cows had recently been purchased at a surprisingly low figure when they were put on test for the first month. In the lot was a slab-sided cow, lacking most of the points that a good cow is supposed to possess, and giving a stingy mess of milk.

It had been agreed before the tester arrived that this cow would be sold regardless of price, but the matter had been delayed. What, then, was the surprise when this supposed boarder showed by the scales and test a daily production of .95 pounds of butterfat, a trifle under the average for the herd, which was .97 pounds daily. Needless to say she will be kept in the herd as long as she can keep up that pace, whether she is nice to look at or not.

The experience demonstrates the old saying that testing, not only shows the culls in the herd but the good cows as well. In this case the finding of this one producer paid for the Association's yearly charge on the entire herd, for she would doubtless have been sold for considerably less than her worth.

The Gotschall Cattle Company of Ripon announces a sale of high grade Holstein cows, 175 in number, at Ripon, January 11th.

HOW THE GRAND CHAMPION STEER WAS FED.

Written for Pacific Rural Press by Prof. Gordon H. True, Head of the Animal Husbandry Department, University of California.

In response to the request for a statement of the feeding of the University of California show steers at Chicago, the following may be said:

The cost of fitting steers for show is a regularly outlined project of investigation in the Division of Animal Husbandry. All feed is regularly weighed, and weights recorded, so that it is possible to report to the last pound.

The grain mixture regularly fed to show steers at the Farm consists of two to three parts of barley to one each of oats and bran and one-fourth of a part of oil meal. At such times as the steers are supposed to be on full feed this mixture is moistened with hot water in which molasses forms a part, in the proportions of about six pounds to sixty-five pounds of grain.

California Favorite.—Of these various ingredients California Favorite, the Grand Champion, ate the following:

865 lbs.	barley
272 "	oats
238 "	bran
60 "	linseed oil meal
22 "	molasses
140 "	sorghum silage
530 "	hay
2240 "	green feed other than pasture.

This was in addition to the milk of one cow, the cost of feeding which, as well as the cost of a year's maintenance of his dam, is charged against the calf. This makes the feed-cost of producing the calf amount to \$77.98, or an average of 7.35 cents a pound—at war prices for feed.

University of California Jock, the two-year-old Angus steer, was not shown as a calf. His mother was a good milker and it was for only a short time that he and another calf had a nurse cow between them. He was fed for the Panama-Pacific International Exposition from some time in March, being fed four times a day until a few days before the show. During this period he had some 277 pounds of corn, all the corn he ever saw. Between showing at San Francisco in October and Portland in December, he was fed only three times a day, and after Portland only twice a day, until about a month before the State Fair at Sacramento in early September.

During his nearly three years of life, Jock ate 7603 pounds of grain, his total feed cost being \$161.23, an average of 9 cents a pound and an average daily gain of 1.7 pound.

The one ingredient entering into the making of the grand champion to which it is difficult to assign a definite value in terms of dollars and cents, is the infinite care and skill with which Herdsman McDonald used the materials put into his hands. Someone has said, "The Scotch brains have formed the most important ingredients in the feed of the great show herds." 'Tis an old German adage, "The eye of the master fattens his cattle." Science has taught much of the principles underlying successful stock feeding, but the supreme art of producing the finished bullock must be learned from the man who lives with and loves his beasts. The road by which the feeder and his student come into their own is the long road of experience.

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Animal Food Dept. 704 Townsend St., San Francisco

Caring for Sows at Farrowing Time.

[Written for Pacific Rural Press by R. H. Whitten, North Glendale.]

[In a separate communication from the following, Mr. Whitten states that the worth of the following methods is proved by the fact that 32 sows, which farrowed during September, October, and November, farrowed 311 pigs, an average of nearly 10 to the litter, which is exceptionally good considering that about one-third were gilts with their first litters. Not a pig was born dead and only one deformed. They raised 281 pigs, or over 90 per cent of all that were farrowed. To some, his method may seem to entail a lot of labor, but labor in this case seems to be more than compensated by additional numbers of pigs raised.—Eds.]

Before Farrowing.—Put the sow in her farrowing pen 3 or 4 days before farrowing, to get her accustomed to her new surroundings. Have pen cleaned and disinfected, and put in fresh bedding. Keep it clean and dry. Wet bedding will cause scours in pigs.

For 48 hours before farrowing, give all the water she wants, but feed lightly, so as not to force too much milk into the udder. If there is more than the pigs can take at the start the udder is liable to cake and cause scours in the pigs, and perhaps death.

The skim milk slop should depend upon the condition of the sow. If her bowels are loose, use mostly shorts; if she is constipated and feverish, use mostly bran—two parts of one or the other to one of ground barley—one part of this dry mixture to three of skim milk.

While the sow is in the farrowing pen, before she farrows, pet and scratch her, and get her to know that you will not hurt her.

At Farrowing.—Be on hand when she farrows, which will generally be 5 to 10 hours after she makes her nest, and as the pigs come take each one away from her, dry it with a cloth, and put it in a box or barrel with clean bedding in the bottom, and with sides high enough to afford protection from the wind. In cold weather, fill a jug with hot water, wrap a sack around it and put it in the middle of the box or barrel.

As you dry them, notch their ears, as a cut made at this time will not bleed. Make the cut about half as big as a pea. It gets larger as the pig grows.

Also, at this time clip the black teeth. They should be snapped off, and not pulled out. This prevents them from starting canker sore mouth and from injuring themselves in fighting, and it keeps the sow from rolling over on her belly and refusing to allow them to suck.

After all are farrowed, place them at teats and see that each one sucks good. Watch carefully for 24 hours. After that, they will learn to get out of the way of the sow.

At farrowing time remove the cold water, and keep it away for 24 hours. Put lukewarm water before her after she finishes, and give her nothing more for 24 hours. The lack of food will help to keep the fever down.

After Farrowing.—After 24 hours give a light slop of skim milk and shorts or bran, according to the

condition of her bowels. Make it thin and feed her lightly.

On the second day begin the regular slop for nursing pigs, but start with a small amount and increase very gradually, allowing 10 days to reach the full feed. This is to retard the flow of milk and prevent it from being too rich until the pigs are old and strong enough to take it all. Too much and too rich milk at the start will result in fever and caked bag in the sow, and scours, thumps, and death to the pigs. The third day after farrowing is the critical period, and until that time is past, watch the effects of the feeding very carefully.

After the sow has reached full feed, she should be given enough so that the pigs have all they want, yet no milk is left in the udder.

If the pigs all nurse well and then lie quietly and sleep, they are getting just enough. But if they keep sucking away at the sow and squeal, and their hair stands up, the sow needs more milk-forming food. If the udder is inflamed, bathe it freely with hot water, and rub it well.

Exercise is very essential, and just as soon as the pigs are strong enough to move around, little holes should be made leading to the alley. Unfold newspapers and scatter them along the alley. The pigs will come out and get exercise tearing up the papers and fighting among themselves, as well as amusing the on-lookers. Exercise is the best cure for thumps in young pigs.

It is important to get the sow and pigs out on pasture as quickly as possible. This should be done in two weeks if the weather is favorable—if not, then just as soon thereafter as is possible.

When the pigs are three weeks old, start them on grain slop in their creep. Begin gradually, but after they get used to it, feed all they will clean up readily. Do not allow any feed to get sour and contaminated.

The boar pigs that are not to be kept for breeders should be cut either two weeks before weaning or two weeks afterwards. To do it at weaning time gives them too much of a setback.

If the sow is to be bred right away for another litter, the pigs should be weaned at 8 weeks; otherwise they may remain with her for 10 or 12 weeks.

Weaning.—At weaning time, reduce the sow's feed and give her dry stuff, so as to check the flow of milk. Take the larger pigs away and do not return them at all. Leave the smallest two for a couple of days, then only one for two or three days more, by which time the flow of milk will have been so gradually diminished that no injury will result to the sow, and her udder will be in perfect condition for the next litter. Also the extra supply of milk will push the smaller pigs along, and enable them to catch up with their mates. Be sure to see that the sow's udder is dried up properly.

As soon as her udder has dried up, feed the same ration as for growing gilts, but grain her heavily until she is back to full flesh, as

she will probably be thin from nursing her pigs. This is so as to have her in good condition for breeding. A sow in full muscular flesh (not fat) will breed more quickly and have a larger litter than a thin sow.

After she is bred she should be put on a half grain ration for 60 days, if she is in proper flesh. If not, continue the full ration until she is. Then keep her on a half ration until 6 to 8 weeks before farrowing, when the grain ration should be increased to three-fourths the

regular, in order to furnish sufficient nourishment for the rapidly developing pigs.

But watch carefully and see that she grows in muscle, not fat. If she gets overfat, reduce the amount of grain, or omit it entirely, as may seem necessary to keep her in proper condition.

Two weeks before farrowing, reduce the feed, and continue with this reduced amount until 48 hours before farrowing, when treat as already directed.

Culling Purebred Hogs.

[Written for Pacific Rural Press.]

Not all purebred hogs are sufficiently representative of their breed to warrant their sale for breeding purposes in the opinion of E. B. Ballis, Farm Superintendent of the Whittier State School of Los Angeles county, where a herd of Berkshire hogs have been maintained for a number of years.

Here two cullings are made of every litter regardless of their breeding: one when the pigs are three months old, and another when they are five months old.

Those that do not successfully pass this culling process are by no means a loss to the school. In fact they are put right into the fattening pens where they are swill-fed on concrete floors till seven or eight months of age when they weigh between 170 and 180 pounds. They are then butchered to supply the school with fresh pork.

As a result of this culling practice, every hog that goes out as a breeder from the establishment is a good representative of the breed and pretty certain to prove satisfactory to the grade hog raiser as a herd sire.

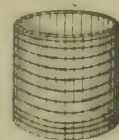
Overfeeding and irregular feeding is the cause of more sickness among horses than any other known cause. The stomach of the horse is so exceedingly small compared to his size that he should be fed and watered at least three times per day, the capacity of the horse's stomach being 18 pints. The capacity of a cow's stomach is 52 gallons.



HOLSTEIN CATTLE

\$123,000 has been expended in the past eight years, by the Holstein-Friesian Association of America, in advertising the merits of the great "Black and White" breed. To the farmer who owns Holstein cattle, this far reaching publicity work is a positive benefit. The continually increasing interest in Holstein cattle throughout America makes for an advance in value, and the breeder of Holstein cattle, wherever he may be, reaps greater profits on the rising market prices of his stock. Send for FREE Illustrated Descriptive Booklets. The Holstein-Friesian Association of America.

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REDWOOD TANKS — SILOS.
Thirty-five years in this business in Stockton.—A 500-gallon tank, \$8.00. A tank 6 ft. x 2 1/2 ft., \$7.50. Other tanks equally cheap. I deal direct with the consumer, saving 10% to 25%. All sizes in stock. Clear, dry redwood direct from the mill. Write for price today. Latest improved machinery. Doors, Windows, Frames, Mouldings.
R. P. WILSON, STOCKTON, CAL.



Let Me Buy Your Shorthorns - Herefords

I have bought show and breeding cattle for most all of the older breeders in California and my wide experience here, together with my knowledge of Eastern herds makes it possible for me to secure

THE BEST AT A BIG SAVING TO YOU.

I am now taking orders for my next trip East to secure on a strictly commission basis, high class stock for California customers. Write me at once of your wants.

As to the service you may expect I refer you to the following satisfied customers: W. Mayo Newhall, San Francisco; W. Bemmerly, Woodland; Parrott Est. Co., Chico; Frankenhelm Bros., Stockton; A. E. Noyes and Son, Sutter City; Stanford University Ranch, Vina; Wm. Russ, Eureka; and J. A. Donohoe, Donohoe-Kelly Banking Co., San Francisco.

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SHORTHORNS

35 Choice Service Bulls
15 SCOTCH AND SCOTCH-TOPPED COWS AND HEIFERS.

All registered and tuberculin tested.

A Few Choice Berkshires of Either Sex for Sale.

H. L. & E. H. MURPHY, Perkins, Sacramento Co., Calif.

CREAM WANTED

Ship to a House of Known Financial Responsibility.

Write Us, and We Will Send You Regular Weekly Quotations

Western Meat Co.
Creamery Dept., San Francisco.

Look Out for Infected Cows.

[Written for Pacific Rural Press.]

The selling of tubercular dairy cows to unsuspecting dairymen in other districts would seem to be a practice that no self-respecting man would engage in; but reports at hand from various parts of the State indicate that such business tactics are being pursued by some.

A case in point was related to us last week by a dairyman in Stanislaus county who had purchased a registered cow for \$200. This was one of a carload shipment of cows from a distant county, made by supposedly reliable parties.

When tested by a competent veterinarian, some two months after the purchase, she was found to have tuberculosis in its advanced stages and was later killed. Others in the shipment met a like fate, the sellers

in the meantime having gone home. The matter was taken up with them, but as there had been no written or verbal guarantee, the buyers were compelled to stand the loss.

Dr. Chas. Keane has recently directed attention to the illegal practice of selling dairy cows that have reacted, when tested by the State; but as there is no provision in the law to brand or otherwise identify these reactors, it is very easy for unscrupulous parties to buy them up for sale in other communities.

While there may be danger of having too many laws, some form of protection should be afforded dairy cow buyers. In the lack of such laws everyone should make it a point to "look out for tubercular cow peddlers."

Test Cows or Pasteurize Milk.

To the Editor: I have been in the dairy business for 11 years; and for the last 8 years have had my herd tested every year, as I also did this year in August. Now the State Dairy Inspector was here and says I have to have the State Veterinarian test them with what they call the "tail test." Can they force that tail test on my cows which have already been tested and passed?—J. B., Menlo Park.

It makes no difference how many times your cows have been tested, they must be tested again under the new law by the State Veterinarian or his deputy, free of charge.

He gives what you call "the tail test" because he believes it more certain to tell the truth because the temperature test may be influenced by nervousness of the cow. It also takes less time.

They can either force the tail test on your cows or force you to pasteurize all milk that is sold for direct consumption. If it is sold or used for butter making, it doesn't come under the law, due to a technical error in the heading of the bill, but this is likely to be amended at the next session.

ALKALI WATER REDUCES MILK FLOW.

To the Editor: A while back I came to this part of the country with a bunch of A No. 1 grade cows, that averaged 1 to 1½ pounds of butterfat per day. Since coming here, the same cows, with the same care, do not make half a pound average a day. Instead of four to six gallons of milk a day to the cow, they run two to three per cow. Been fresh two to five months. They have always been used to good water to drink, but down here the water is strong with alkali. Will alkali water cause cows to go dry? These cows, when fresh, milk their full flow, but in two months they commence to drop.—C. J. F., Riverdale.

[Answered by Geo. T. Farmer, Hanford]

The trouble is very likely alkali water, which often affects the milk flow very materially especially in warm weather, when, if stagnant, it is dangerous to the health of the stock. But if the cows have come from the northern part of the Valley, they will likely improve in another year.

GRIND OR SOAK GRAIN FOR HOGS.

To the Editor: Is it better to fatten hogs with dry grain or to soak it up? Is Egyptian corn more fattening than barley?—R. C., San Jose.

When you feed dry grain, you will see some of it coming through whole. This may not be wasted, but shows it is harder to chew and digest. Since digestion is what makes a hog valuable, it is most economical to feed it the most digestible foods in the most digestible form, up to the point where cost becomes prohibitive. It has been shown by repeated

and numerous experiences of California farmers that soaked or ground grain is more economical to feed good hogs, than dry or whole grain. Egyptian corn and barley are of about equal value in fattening hogs.

CALIFORNIA WOOL GROWERS TO MEET.

[Written for Pacific Rural Press.]

We are informed by Fred A. Ellenwood, Secretary of the California Wool Growers' Ass'n, that the annual meeting of that association will be held at the University Farm, Davis, January 5-6.

Besides the business meeting of the association there will be special addresses and demonstrations on subjects, such as carcass, docking, shearing, and dipping, report and inspection of a test in fattening old ewes for market which has been under way at the University Farm, and a comparison of different methods. A banquet will be given at the University Farm the first night and a general good time promised to all who attend.

MILKING SHORTHORN IMPORTATION.

Alexander and Kellogg of Suisun inform us that their importation of English Milking Shorthorns arrived in Suisun Dec. 17, consisting of six young cows, six heifers, one bull and four calves. The cattle were selected with great care by Frank Peer, the importer, and are from the best Milking Shorthorn herds in England. All six cows have good milk records, a five-year-old having a record of 9,952 lbs., and a four-year-old having a record of 8,360 lbs. with first calf. They are large-framed cows, showing beef as well as milk; all from the north of England with the exception of the bull and

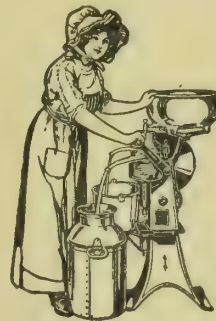
INDISPUTABLE PROOF OF DE LAVAL CREAM SEPARATOR SUPERIORITY

SINCE 1892 the National Buttermakers' Association has held butter scoring contests each year in connection with its Annual Convention; and at every such Convention, butter made from cream separated by a De Laval Separator has scored highest. This is a 100 per cent record for the De Laval. Twenty-three wins out of twenty-three contests. No room for chance there. Only unusual merit made such a record possible.

But that is not an unusual record for the De Laval. At the great National Dairy Show at Springfield, Mass., in October, 1916, butter made from De Laval-produced cream scored highest in both the creamery and dairy classes, while De Laval cream scored highest in the cream classes.

The juries at the great national and international expositions have invariably acknowledged the superiority of the De Laval. They awarded the Grand Prize to the De Laval at the Panama-Pacific Exposition, as also at Buffalo, Chicago, St. Louis, Paris, Brussels, and all the great world expositions for 25 years.

As a matter of fact, it is very easy to prove De Laval superiority. All that is needed is a careful comparison with any other machine, either as to design and construction, or, more important still, as to performance. But such proof is no longer necessary to a well-informed dairyman or farmer. He has seen proof of De Laval superiority piled up and multiplied so many times that it is no longer open to question by anyone. It is an accepted fact.



If you are without a cream separator, or need a new one, the only question you need to ask is, "Which is the proper size De Laval for me to buy?"

See your De Laval agent immediately, or, if you don't know him, address the nearest De Laval main office as below for any desired particulars.

De Laval Dairy Supply Co.

LARGEST DAIRY SUPPLY HOUSE ON THE PACIFIC COAST. We specialize in Alpha Gasoline and Distillate Engines, Ideal Green Feed Silos, Irrigation Equipment, Centrifugal and Deep Well Pumps and Alpha Spraying Outfits. Send for special catalog.

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SEATTLE

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER.

two heifers. In his description of them Mr. Peer writes: "These North country animals have had no special care of feeding to enable them to produce big records. Most of the records are made on grass alone. They are to the dairy born, tough and hardy, can stand hard work, are good and know how to grub for a living. They will improve with any kind of a fair chance and treatment."

The bull, Kelmscott Viscount 19th, is from the famous herd of R. W. Hobbs Sons and is a fine type of the Dairy Shorthorn bull, with good back and spring of ribs. He is splendidly bred, his pedigree showing large milk records back for several generations on both sides.

Sheep raisers from all sections of California have signified their intention to attend the eighth annual convention of the California Sheep and Wool Growers' Association which will be held at the University Farm at Davis, Jan. 5 and 6, 1917. Rapidly changing conditions in the sheep industry in California are compelling attention just at present and it is desired to get as representative a delegation at Davis as possible, in order that conditions in all sections of the State may be learned.

Some of the causes in animals of colic are overloading the stomach, dirty alimentary matters, retention and hardening of excrementitious matters, calculi and concretions, intestinal worms, prolonged fast, unusual movements (rolling on the back when cast), retention of urine



"Selecting and Developing the Jersey Herd"

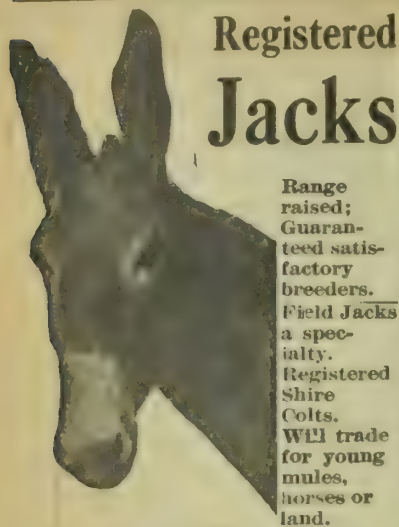
Is a booklet by Prof. Hugh G. Van Pelt. It tells how you can build a well-developed, money-making Jersey herd by proper selection and judicious breeding. The future of your dairy herd depends upon how you select your foundation animals and how they and their offspring are developed. The Jersey cow combines beauty with dairy conformation. Healthy, vigorous and profit-producing, she lifts the mortgages and increases bank accounts. Send for book today.

American Jersey Cattle Club
388 West 23rd St. New York City

and bolting the whole grain from gluttony or hunger, etc.

The Napa Co. Livestock Association, which held its regular meeting at Napa recently, has 75 members. Some fine herds of cattle are in evidence in the county.

Dr. Charles Keane, State Veterinarian for many years, has been re-appointed by Governor Hiram W. Johnson for a four-year term.



Registered Jacks

Range raised; Guaranteed satisfactory breeders. Field Jacks a specialty. Registered Shire Colts. Will trade for young mules, horses or land.

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We have 20 head of good gilts and 3 two-year-old sows for sale. Either sired by or bred to I. B. A. Wonder, Reserve Champion at the P. P. I. E. Also a few extra good young boars ready for service sired by I. B. A. Wonder.

Also a fine lot of Fall Pigs.
We please you or refund your money.
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OPEN AND BRED GILTS
BOARS.
Breeding and individuality
Right

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Nevada Hog Growers Ship Together.

[Written for Pacific Rural Press by L. E. Cline, Fallon, Nev.]

I was much interested in the contributed article entitled, "Marketing His Own Hogs," in the issue of December 16th. It will have to be admitted that too large a proportion of the farmer's time and attention is devoted to the production of farm crops and far too little time to the marketing of the same. It is not uncommon to see a speculator come into a farming community and buy up some line of produce, hold it a short time, and make more net profit than the producer who grew the crops. The farmer has himself to blame for such occurrences. He must be a student of markets as well as of production, if he is to reap the reward of his own labor and investment. As mentioned in the article referred to, Mr. Peters of Bakersfield had the initiative to take his own hogs to market and by so doing received \$100 more than a speculator would pay, but a man with less than a car of hogs will probably say that he is at the mercy of the local hog dealer, because he cannot ship and pay local freight rates to market. For the benefit of those who grow hogs on a small scale, the method of co-operative marketing of hogs from the Truckee-Carson Project, Fallon, Nevada, may be of interest. Farmers desiring to market hogs from one up to a carload are able to dispose of them at actual Pacific Coast market quotations less shipping expenses. It might be of interest at this point to state that 200-pound hogs such as were marketed in the article mentioned and which netted the owner 8c, would have netted the Truckee-Carson farmer 8 1/4 to 8 1/2 cents with a \$62 rate and 9 1/2c per pound quotation

in San Francisco, which has been received this month.

Under the co-operative marketing of hogs from this locality, each consignee reports to the writer the number of hogs to be shipped, and the date on which they will be ready for shipment. When a sufficient number has been reported as being ready for a certain date, the owners are notified to bring in their hogs. Each owner's hogs are given a mark for identification at the selling point. This mark is made by blazing a spot on right or left ham, right or left shoulder, back or side, etc., by means of barber's clippers or horse clippers. One of the consignors accompanies the shipment to market, carrying with him the identification and inventory. At the market the hogs are unloaded, graded and weighed, each lot being sold independently. The expenses of the caretaker are added to the freight bill, and the whole apportioned among the shippers by the purchaser and deducted from each shipper's check according to the weight of hogs consigned. In this way, the purchaser deals directly with each consignee, the shippers having simply co-operated in purchasing car space for making the shipment of their respective consignments.

Since all shipments so far have been consigned directly to the packing house, the freight charges have been charged to them, thus simplifying the operation for the shippers. All checks are mailed directly to the shippers. This method of marketing has been a great relief for farmers in this section far from market, and might with profit be introduced into any community.

amount of protein, carbohydrates and fat in cocoanut meal and its feeding value for hogs.—R. W. Stockton.

Digestible nutrients per 100 pounds: 18 pounds crude protein; 39.8 carbohydrates; 12.6 fat. This is an average sample. The value in fats depends largely on how well the cocoanut cake has been pressed for the oil of which it is a by-product. It is not generally used for hogs, though it has been found satisfactory in Europe for them. Cocoanut meal should not comprise over one-third the concentrate ration. It turns rancid quickly in hot weather and should not be fed in that condition.



GERMAIN SEED & PLANT CO.,
Los Angeles, Cal.
Portland Seed Co., Portland, Ore.
Spokane Seed Co., Spokane, Wash.

The Value of Silage.

Dairymen who are feeding silage for the first time this winter are in a better position to realize its merits than those who have used it in recent years, on account of the ruling high prices of feedstuffs at the present time.

The thought is sometimes expressed that we are experiencing a silo fad which will run its course in a short time, but progressive dairymen have come to realize that the silo is an economic necessity where the greatest possible financial gain is the chief consideration.

A compilation of this year's experiences would be of interest just as the following one of A. W. Morris and Sons, with their large herd of registered Holsteins in Yolo county.

Besides the cows which they have on official test most of the time, they milk large numbers of cows in their regular strings. Some of these are in preparation for official work, others have completed weekly or monthly tests and still others with records already made in previous years are kept in the milking strings for their milk and calves without regard to present or future official work.

All are handled in the same manner that any ordinary grade herd would be, except that alfalfa hay is supplemented with other feeds. The supplementary feeds usually com-

prise some grain or mill feeds, silage, and in times past beets, but this year, on account of the high price of mill feeds, the entire ration has been made up of corn silage and alfalfa; and it is the conclusion of Frank Morris that this ration is not only by far the most economical, but that it also holds the milk flow up to the maximum. In fact he believes it worth almost as much as alfalfa, inasmuch as three parts of silage will replace two parts of hay and also increase the milk flow.

COCOANUT MEAL FOR HOGS.

To the Editor: Please tell me the



Raise Your Calves on Blatchford's Calf Meal and Sell the Milk

More calves have been raised on Blatchford's Calf Meal than on all other milk substitutes combined.

100 lbs. makes 100 gallons of milk substitute, costing only one-third as much as milk.

Prevents scouring and insures the early maturity of sleek, handsome calves.

It is steam-cooked and no trouble to prepare or use.

Write for Pamphlet "How to Raise Calves Cheaply and Successfully with Little or No Milk." At dealers, or Coulson Poultry & Stock Food Co., Inc., Petaluma.

Paicines Ranch Co.



San Francisco,

Offers for sale fifty (50) head of eighteen months and two-year-old registered Short-horn bulls; also a select lot of weanling registered bulls, sired by such bulls as Fond Lavender, College Count 3rd, Besie's Council and Whitehall of Orange. For prices and particulars apply to

DAVID J. STOLLERY

320 Sharon Bldg.,

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BAKER'S TRACELESS HARNESS



Best plow rig. NO WHIFFLETREES—NO TRACES. Handiest farm harness.

Indispensable in the orchard with special fitness for all low down work. You can hitch closer to your load, plow and cultivate close to the row and save all the worry to man and team. No weight of whiffletrees for man to lug. Everything clear behind team. Use our outfit and save your trees. Highest endorsement of farmers and fruit growers.

Write now. B. F. BAKER CO., NUMBER MAIN ST., BURNT HILLS, N. Y. (1226)

TAMWORTH'S

(The Bacon Hog)

Largest Herd in the State

DUROC - JERSEYS

Mature Stock and Weanlings of both sexes. Sure to please. SWINELAND FARM.

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Nat'l Promotion for Wool and Mutton.

[Written for Pacific Rural Press.]

The first organized effort at sheep promotion work embracing all of the various interests dependent upon wool was started at the Sheep Conference held at Philadelphia, November 23 and 24, under the auspices of the Wool and Textile Ass'n and participated in by farmers, wool-growers, representatives of the U. S. Dept. of Agriculture, various State Depts. of Agriculture, agricultural colleges, wool merchants, woolen and worsted manufacturers, railways, bankers, wholesale and retail clothing manufacturers.

Speakers showed that the manufacturers of woolen and worsted goods now need each year 600,000,000 pounds of wool, that the production in the United States has decreased from 325,000,000 pounds to 288,000,000 pounds in the past five years despite the fact that there has been a distinct reduction in the size of New Zealand and Australian flocks since 1910 and a decline is noticeable in the Argentine. The existing supply in the Argentine is said to be incapable of movement because of lack of ships; and rumor has it that the supply there is already being bought up by Germans and others for use after the war.

Considering the discouraging outlook for possible supply the conference adopted the following recom-

mendations and appointed a committee to prepare a plan for the formation of a development bureau which will be financed by the Wool and Textile Manufacturing Trades: (1) Immediate conservation of breeding flocks; (2) increase in the number of farm flocks; (3) survey of the location and the number and the price of breeding sheep for the establishment and improving of flocks; (4) enactment and enforcement of adequate dog laws; (5) encouragement and support of farmers' co-operative and club sales of wool and lambs; (6) encouragement of buying methods which will guarantee to the individual grower and producer the true market value of his products, and instruct him as to market requirements; (7) preparation and distribution of clearly written bulletins and similar matter on the production and marketing of wool and mutton; (8) local business interests in various counties to be stimulated to aid in the establishment of County Farm Bureaus; (9) encourage the formation of boys' and girls' lamb clubs; (10) encouragement of close relations between, and an appreciation of the mutual interdependence of, town and country; ((11) national publicity as to the wholesomeness and economy of mutton and lamb.

First Two Months' Calf Feed.

To the Editor: I have a calf that I want to sell for veal. Will it be necessary to feed him all whole milk, or would it do to mix some skim milk with the whole milk? How old should he be to sell for veal?—G. B. W., Oakland.

Unless he gets whole milk the first two weeks, he is likely to have digestive troubles. At two weeks old, begin to add skim milk and reduce the whole milk. Increase skim milk gradually till no whole milk is fed after 10 to 14 days. While changing to skim milk, keep clean hay, clean water, and salt available; and if you want to make a good veal, add a grain mixture to the skim milk. Prof. Woll of University Farm gives several good mixtures, one of which is ground barley, ground oats, fine wheat middlings two parts each and linseed meal one part. Make it into a mush then thin to a gruel with skim milk or water. One-third pound per day at first, gradually increased to one or two pounds, will do till the skim milk is discontinued. Three or four quarts of milk per day are required at first, always feeding it warm as it comes from the cow. At two months old it will have been gradually increased to 6 or 8 quarts. At this age a good well-fed calf should weigh 150 to 200 pounds.

Care and personal attention are necessary daily to see that digestion is not deranged. If signs of scouring appear, reduce or withhold the feed or, in bad cases, as suggested by Prof. Woll, stir a teaspoonful of dried blood into the milk at each meal or a teaspoonful of a 2 per cent solution of formaldehyde per pint of milk.

Many dairymen sell their veal calves at two or three weeks old;

and they bring the highest price per pound then without requiring any more milk or care. But if feed is available, it often pays to keep veal calves up to two months old.

Commercial calf feeds are pretty well standardized, and have directions with the feed.

A CHEAP HOG HOUSE.

[Written for Pacific Rural Press.]

While there is no one type of hog house that is best suited to all needs, the A-shaped building is probably better suited to a larger number of conditions than any other; particularly when considering cost of construction.

Various plans for the construction of these individual houses are used; but the one used by H. I. Marsh for his purebred Poland China sows in Stanislaus county is the cheapest constructed one the writer has ever seen.

These houses are five feet wide, six feet long, and should be six feet high, although Mr. Marsh built his but five feet high. They are made of rough one-by-twelve Oregon pine, having a board floor of the same material which is laid on two runners, made of 3x4's.

The top of the building is fastened to the floor with two hinges on one side of the floor, making it possible to swing the entire upper part of the structure off the floor so that cleaning out the building may be accomplished with ease.

Not counting the cost of labor, which is performed on rainy days or at other odd times, these houses represent an outlay of only \$2.90 each, a figure which is so low that any farmer can own one.

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FERMENTING TANKS

WATER TANKS

OIL TANKS

PIPE

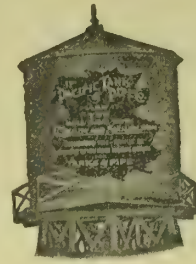
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Best bred son of Tilly Alcartra.

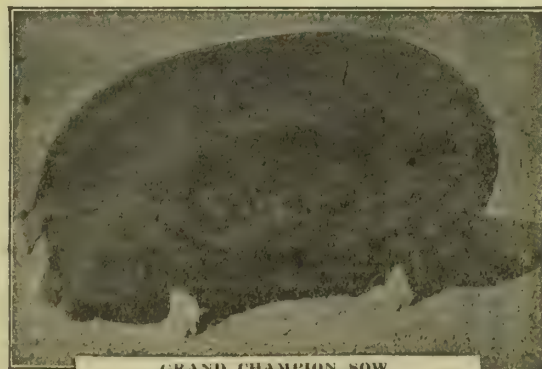
Our supply of these young sires is always limited, but we have a few now which we are offering at very reasonable prices.

Write us at once, or call and see the herd.

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GRAND CHAMPION SOW.
P. P. I. E. 1915; Sacramento 1916.

For many years, at widely separated show rings, under many different judges of varying type ideals, my Poland Chinas have been consistent prize-winners. My herd is large, and I cull closely. The animals sent out as breeders are the very tops of a large number. I KNOW that my kind of Poland China is a profitable farmer's hog, for I send carloads of them to the packer every year—uniform in size, high in quality, quickly and economically matured and finished.

Young Stock, \$30 Up.
M. BASSETT,
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HOPLAND STOCK FARM REGISTERED SHORTHORN BULLS

REGISTERED BERKSHIRES (Boars, Bred Sows and Glts)
HERD BOAR, ROYAL POINTER 2nd, 197092, First Prize
Senior Yearling, P. P. I. E.
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CATTLE FEED FOR SALE

I have both wild feed and hay to be sold together, and fed out by owner. Write me at once for prices, etc.

JAS. McCORD,

Hanford, Cal.

California Hog Book

BY W. S. GUILFORD.
Price, \$2.00 per Copy, Postpaid

Live Stock and Dairy Notes.

Readers all over the State are invited to send on postal cards, notes regarding their sales, State and County Fair intentions, new stock, etc.]

THE DAIRY.

Three creameries of Tulare paid out a total of approximately \$110,000 for cream delivered during the month of November.

F. W. Andreason, Secretary of the State Dairy Bureau, advises us that the preliminary report of the value of casein produced during 1916 in the State should have read \$186,431 instead of \$503,365.

Checking 600 acres of land to be seeded to alfalfa, on the old Gray brothers ranch, between Oakdale and Knights' Ferry, has begun. The ranch was recently purchased by the Stanislaus Dairy Farms Co., in which San Francisco men are largely interested.

A new record for butter production has been established by a cow belonging to M. J. Smiley of Belle Fourche (S. D.), it is claimed. The official test made by Professor Larson, of the S. D. State College shows a production of 47.77 pounds of butter in seven days.

The highest average production in the Yolo-Solano Cow Testing Ass'n for the past month for herds of over 20 cows was 1.10 pounds fat made by the O. P. Gillman herd of Dixon. The highest average for herds of less than 20 cows was 1.32 pounds fat made by the F. Beebe herd.

A movement for the formation of a milk inspection district in Stanislaus county has been undertaken to enable residents of unincorporated towns, as well as incorporated towns, to enjoy the benefits of the new State law requiring all milk, retailed to customers, to be pasteurized or obtained from tuberculin-tested cows.

A letter from Mr. Frank Morris informs us that the cow Aaggie Acme of Riverside 2nd has finished her 30-day record with 141.42 pounds butter from 2680.3 pounds milk. He also says that the senior two-year-old K. P. Melanie Beryl, a daughter of the King of the Pontiacs, has completed a seven-day record of 22.50 pounds butter.

We are advised by Malcolm H. Gardner, Supt. of A. R. work of the Holstein-Friesian Ass'n, that the cow Changeling Tidy Abbecker Wayne has just made a seven-day record of 588.3 lbs. milk, 32.49 lbs. fat at six and a half years old. She is the fifteenth cow to obtain place in the list of cows with productions of fat exceeding 32 lbs. fat in a week.

Mrs. M. A. Haupt and F. A. Heroux, of the Buena Alta ranch, north of Modesto, returned from the Pacific International Livestock Show, held in Portland the first week in December, where they purchased 12 of the prize-winning Holsteins. The addition of this stock to their herd will make the Buena Alta ranch Holstein herd one of the finest in Stanislaus county.

A subscriber from Humboldt county advises us that because of the fall rains being late and followed by cold weather, green feed has been very scarce in that county all fall and early winter. He says a very large proportion of the dairymen have shipped alfalfa hay from San Francisco at a cost of about \$20 a ton laid down at Humboldt county railroad stations.

The Ripon Cream Pooling Association, composed of 83 dairymen in the South San Joaquin Irrigation District, between Stockton and Modesto, has secured for their product an attractive price for the next 12 months, the accepted bid being based on the daily quotations on the San Francisco Dairy Exchange, which is substantially above the San Francisco market figure.

BEEF CATTLE.

Reports from Santa Fe, New Mexico, say that there are now in New Mexico 1,100,000 cattle. Shipments

out of the State so far this year have been 270,000, according to a report of the Sanitary Board just issued. The same reports put the value of the cattle at \$22.50 to \$45.00 per head.

Wm. Carruthers advises us that he has a shipment of Shorthorn and Hereford cattle en route to Carruthers Farms at Mayfield from the Middle West. While at the International Livestock Show at Chicago he purchased a heifer which he considers a very good show prospect for the next year. The Herefords he is bringing out are for Miller and Lux.

The Kern County Cattle and Land Company shipped last week to Wilson and Company, packers of Los Angeles, two yearling past Hereford steers weighing 1860 and 1830 lbs. of their own feeding. They were the finest beeves seen on this market for many a day. They were fed mostly corn and cut alfalfa hay. Both were raised and fed in the same pen. One of them won the grand sweepstakes prize at the Panama-Pacific International Exposition last year. It is said that Wilson and Co. paid 40c per pound for them. They were slaughtered for the Christmas trade.

SWINE AND SWINEMEN.

A carload of Visalia hogs brought \$8.85 per hundred pounds f. o. b. Dec. 15.

Shipments recently from Woodland to the Isthmus of Panama of six purebred, pedigreed Poland-China hogs, by W. H. Browning, to a syndicate which proposes raising purebred stock on the isthmus, puts Yolo county on the map as a place where purebred stock may be had.

Members of the executive body of the California Swine Breeders' Association will hold the annual meeting of the organization at the University Farm in May. The organization will support the movement for better facilities at the State Fair grounds, particularly for the exhibitor of hogs.

It is said that fully 500 stockmen and hog breeders will attend the annual meeting of the California Swine Breeders' Association that will be held in Los Angeles January 18 and 19. The railroads have provided for a fare of one and one-third for the round trip. A special effort is being made to bring the hog producers and packers together for the purpose of creating a better and mutual understanding.

Several months ago R. H. Whitten of Los Angeles, owner of the Whitten Ranch at Terra Bella, purchased the boar Mouw's Long Smooth Jumbo from Peter Mouw of Orange City, Iowa. Mr. Mouw is the originator of the Big Type Poland-Chinas. He has nine herd boars, the best of which is his \$2,600 Smooth Jumbo. Mr. Whitten's new boar is sired by Smooth unbo and out of Mollie King 2nd, an 875 lb. sow of Long King and Chief Price breeding. Mr. Whitten has bred 32 of his best brood sows to Long Smooth Jumbo for spring farrow, and naturally expects a fine lot of pigs.

SHEEP.

The Lake county wool market opened this week and up to the present time about 50,000 fleeces have been contracted for by the buyers. The prevailing price here is 30 cents.

Douglas Walker, one of Potter Valley's prominent and prosperous ranchers, brought down a band of sheep lately for shipment to a stock-buyer of Woodland. There were 550 sheep in the band.

Henry R. Timm has sold his 80 acres of alfalfa land in the Mayes tract, near Dixon, to Milton S. Eisher of San Francisco, the man who is associated with Messrs. Bissell and Grady in the sheep business. The

LIVESTOCK DIRECTORY.

Rates in this directory, 3c per word each issue; or if carried weekly for one year, 2 1/2 c per word.

SWINE.

Poland Chinas.

SMITH'S POLAND-CHINAS—Sows and gilts bred to Joker, First Prize Boar at the Wisconsin State Fair, 1915. These sows and gilts, sired by Iowa Wonder, who is a son of A. Wonder, the most celebrated Poland-China boar, living or dead. Litters from this mating are the best I have ever seen anywhere. Prices low quality considered. Will sell one or a carload. As a special inducement each purchaser will be given a year's subscription to the American Swineherd, the best swine paper published and a copy of the Handbook on the Sow; also a copy of the Pig Feeders' Manual. Geo. A. Smith, Corcoran, Cal.

MAKE BIG MONEY with our big-type Poland-Chinas. Smooth, easy feeders that make greatest weight in shortest time at lowest cost, topping the market at 225 lbs. in 6 months. 300 head, both sexes, all ages, reasonable prices. Some fine bred sows and gilts, and top quality young boars. Best Eastern blood lines. Satisfaction guaranteed. Ranch in Tulare county, but address owner, R. H. Whitten, Route 5, Box 647, Los Angeles.

GRAND CHAMPION SUPERBA POLANDS—A few choice spring Superba boars ready for service. Sows bred to Superba for fall litters. Prices reasonably low. Rough's Greenfields, Arlington Station, Riverside, Cal.

FOR QUICK SALE—Registered Poland-Chinas. 15 boars four to six months old. \$20 each. 10 gilts same age. \$15 each. Registration free. Stock first class. C. L. Vanschoelack & Sons, Chico, Cal.

REGISTERED POLAND-CHINA BOARS of serviceable age. A Wonder and Chief Picture breeding. Every animal guaranteed. Price \$25. Bar N. Ranch, E. A. Noyes & Son, Props., Sutter, Cal.

POLAND-CHINAS—Bred gilts, \$15; young boars, \$10 and \$15; bred sows, \$25. Weanlings, either sex, \$6. Registered and crated, purchaser to return crates. E. A. Hall, Watsonville, Cal.

REGISTERED POLAND CHINAS—Young boars ready for service. Weanling pigs, both sexes. Prices attractive for quick sales. J. H. Cook, Paradise, Cal.

REGISTERED POLAND-CHINAS—Prolific, papulous, profitable porkers. Choice boars now ready for service, \$25 each. Weanlings, \$15. Dr. J. A. Crawshaw, Hanford, Cal.

LAKEVIEW STOCK FARM POLAND CHINAS are money-makers. Satisfaction or money refunded. Geo. V. Beckman & Sons, Lodi, Cal.

FOR SALE—Two O. I. C. Registered brood sows, one registered Poland-China boar, 47 shoats and pigs. John Willerton, R. F. D., Oakdale, Cal.

BIG-TYPE POLAND CHINAS—Stock from the best herds of the Middle West. N. Hancock Alton Humboldt Co. Cal.

POLAND CHINAS—Big type. Shoats, either sex, or in unrelated pairs. O. L. Linn, Linview, Route A, Modesto, Cal.

POLAND-CHINAS—Big type combined with quality. Choice bred sows, gilts, boars. W. D. Trehwitt, Box 82A, Hanford, Cal.

REGISTERED POLAND CHINA SWINE—Prize-winners. Finest stock in the State. \$20 up. M. Bassett, Hanford, Cal.

REGISTERED POLAND-CHINAS and Duroc Jerseys. Cholera immune for life. T. H. Beckman, Lodi, Cal.

POLAND-CHINAS—Large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

DEACON RANCH POLAND CHINAS—Prize winners. Young stock reasonable. Box 27A, Davis, Cal.

KNOB HILL STOCK FARM—Registered Poland-China Swine. A. M. Henry, Farmington, Cal.

REGISTERED POLAND CHINA WEANLINGS—Prices moderate. E. R. I. Box 34, Galt, Cal.

AMAWAGE FARMS—Poland-China hogs and Holstein cattle. G. H. Loughery, Visalia, Cal.

REGISTERED POLAND-CHINA BOAR for sale. Address Walter Teller, Atwater.

REGISTERED POLAND-CHINA HOGS—J. A. Clark, R. 4, Lodi, Cal.

READOAK RANCH herd of registered Poland-Chinas. W. J. Hanna, Gilroy.

POLAND-CHINAS—Prize-winners. Money-makers. W. Bernstein, Hanford, Cal.

Berkshires.

GRAPEWILD FARM BERKSHIRES—World's Fair Grand Champion Berkshire Leader 2nd best boar, not only himself a champion, but the sire of Champions. At the 1916 California State Fair his daughters won first in all of the senior sow classes, including the Grand Champion Sow. At the 1916 Oregon State Fair a Grand Leader sow was Junior Champion. We are offering a number of choice boars of exceptional breeding and are also booking orders for Fall pigs. A. B. Humphrey, Escalon, San Joaquin Co. Cal.

50 BRED SOWS AND GILTS—50—of true Berkshire type and quality, bred to Grand Champion boars, are included in our private sale list now ready for mailing. Write for it today. Silver Birch Farms, Box B. P., Newport, Wash.

REGISTERED BERKSHIRES—Progeny of Improver B. Young stock now ready for sale. Start your herd with breed and strain of established reputation for California conditions. Geo. G. Meckfessel, Berlin, Cal.

WINONA BERKSHIRES—Three July 27, 1916, daughters of Winona Violet Champion, out of Rookwood Lady 106th, a sister of Laurel Champion, Winona Ranch, E. I. A. Box 105, Grants Pass, Ore.

BERKSHIRES—I have one of the best herds on the Pacific Coast, including Grand Champion Sow, Reserve Grand Champion Boar under one year, Third Aged Boar, etc. Frank A. Brush, Santa Rosa, Cal.

CHAS. GOODMAN—Breeder of high-class Berkshire Swine. Williams, Cal.

CHOICE REGISTERED BERKSHIRES—Exceptionally fine pigs, \$15 each. Unrelated trio, \$40. Boars, sows, and gilts at reasonable prices. W. H. Waugh, Riverside, Cal.

SPECIAL—Six good service boars and a few sows in pig to Premier Leader due to farrow in October. Geo. M. York & Son, Berkshire breeders, Modesto, Cal.

IMMUNIZED NORMANDY BERKSHIRES.—Good type. Breeding stock, any age, for sale at all times. Cast iron guarantee. Arlinton Smith, Visalia, Cal.

BERKSHIRES—Bred sows and weanling pigs. Write for prices and pedigrees before buying. Butte City Ranch, Box F, Butte City, Glenn Co., Cal.

REGISTERED BERKSHIRES of prize-winning blood. Write for description and photos. Imperial Stock Farm, Morgan Hill, Cal.

REGISTERED BERKSHIRES—For sale, bred sows. Boars ready for service and weanling pigs. C. H. Thompson, Novato, Cal.

ROSE CREST BERKSHIRES—Rivals Champion Best blood. Open and bred gilts. Service boars. F. L. Hall, Perris, Cal.

30 REGISTERED BERKSHIRES—Boars and gilts for sale. J. H. Benedict, Lemoore, Kings county.

HOPLAND STOCK FARM—Registered Berkshires. Prices on application. Hopland, Cal.

REGISTERED BERKSHIRES—Weanling pigs, \$10 each. G. A. Casey, R. 7, San Jose.

BERKSHIRES—Carruthers Farms, Mayfield, Cal. Second annual sale, August 2, 1917.

REGISTERED BERKSHIRES—Young stock for sale. F. W. White, Elk Grove, Cal.

Duroc-Jerseys.

DUROC JERSEYS—My hogs won highest honors at State Fair, taking first prize herd, first prize sow, second prize boar. Were the largest of their age exhibited. Stock all ages for sale. Prices reasonable. Breeding and satisfaction guaranteed. Haden Smith, Route 1, Box 84D, Woodland.

REGISTERED DUROC-JERSEYS—Service boars from prize-winning stock are money-makers. They grow faster. New England California Corporation, Ripon, Cal.

DUROC JERSEYS—Herd boars. E. N.'s Colonel and Tulare Boy. Sweepstakes winner at Fresno, 1915. Choice breeding stock. J. P. Walker, Visalia.

REGISTERED DUROCS—Service boars and open gilts from High Model, Defender and Crimson Wonder stock. River Bend Farm, St. Helena, Cal.

RANCHO RUBIUS DUROCS—All sold except a few July and September gilts. Extra good. Write for prices. Elmer Lamb, Ceres, Cal.

REGISTERED DUROCS of guaranteed breeding. All ages. Weaned pigs, \$10. H. E. Boudier & Son, Napa.

HEAVY BONED DUROCS—A few service boars for sale. Ormondale Co., Route 1, Redwood City, Cal.

REGISTERED DUROCS—Crimson Wonder stock. Young stock, both sexes. L. D. Collins, Denver, Cal.

REGISTERED DUROC-JERSEY SWINE—Both sexes. Big-boned type. B. F. Kendall, Hanford.

WINTON DUROC-JERSEY FARM, Winton, Cal.—High-class pure-bred hogs both sexes, any age.

DOS HERMANOS REGISTERED DUROCS—Duroc and Berkshire. H. Uchak, Cal.

CURTIS DUROCS of either sex at all times. E. C. Curtis, Napa, Cal.

REGISTERED DUROC-JERSEY SWINE—Frederick M. Johnson, Napa, Cal.

REGISTERED DUROC-JERSEYS—S. S. Southworth, Napa.

Yorkshires.

LARGE YORKSHIRES—Choice spring boars, gilts, and weaned pigs from Champion sow P. P. I. E., or from breeding of champion boar and sow, Sacramento, 1916. If you see them grow you will like them. Haverina Farms, Paradise Road, Modesto, Cal.

LARGE YORKSHIRES—The ideal hog for the progressive farmer. Young stock for sale. A. L. Tubbs Co., Calistoga, Cal.

Chester Whites.

BILLIKEN HERD OF CHESTER WHITE Swine—Registered and Cholera Immune. 4 bred gilts due to farrow the latter part of January. 10 young boars of service size. 20 open gilts that will be bred to suit the buyer. Write for the booklet "Chester Whites" and find out what the breed is and what they are doing. This herd represents the very best blood lines the breed produces. C. B. Cunningham, Mills, Sacramento County, Cal.

EASY FEEDING—Quick grower type Chester White gilts and boars for sale. Address M. Lane Co., Oak Knoll Ranch, Napa, Cal.

REGISTERED IMPROVED CHESTER Whites—Grizzly Bear Ranch, East Auburn, Cal.

Essex.

LITTLE BLACK ESSEX—Service boars and weanlings. Only herd in the State. Limited supply. Yolo Essex Herd L. W. Millap, Yolo, Cal.

Hampshires.

BELLA VISTA HAMPSHIRE SWINE—From prize-winning stock. J. W. Henderson, First National Berkeley.

DAIRY CATTLE.

Holsteins.

REGISTERED HOLSTEINS—Herd sire King Korndyke Hengerveld Ormsby 7th, 86623. His full sister as Junior 3-year-old made 32.04 lbs. butter in 7 days. The record of his dam and his sire's dam averaged 30.98 George Koonias, Modesto, Cal.

25 HIGH-GRADE HOLSTEIN Heifers, sired All tuberculin tested. Also 35 yearling heifers sired by same bull. Terms and prices apply to W. H. Nichols, 2562 Haste St., Berkeley, Cal.

REGISTERED BULLS by King Korndyke Pontiac and out of A. E. O. cows. A splendid selection old enough for service. Write or call. J. H. Harlan, Woodland, Cal.

REGISTERED HOLSTEINS—Grandsons of King Segis and of world's record cow Creamelle Vale. Will build up the production and value of your herd. Write or call and see them. F. H. Stenzel, San Lorenzo, Cal.

A NICE YOUNG SON from El Prado Wayne Colantha and from a 24.26 lb. dam. J. W. Benoit, Breeder of Registered Holsteins, Route C, Modesto, Cal.

TULARE GUERNSEY AND HOLSTEIN Farm is offering young bulls of both breeds. Excellent breeding. Prices reasonable. W. J. Higdon, Tulare, Cal.

THE McLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

THE HENDERSON CO.—Breeders and importers. Registered Holsteins. Sacramento Bank Bldg. Sacramento.

BREEDERS OF REGISTERED HOLSTEIN cattle and Berkshire p.g.s. Whittier State School, Whittier, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons, Corp., Importers and Breeders. Woodland, Cal.

CREAMCUP HERD—Registered Holsteins Pontiac bull calves. M. Holdridge, Modesto, Cal.

BREEDERS OF REGISTERED HOLSTEIN Cattle—McAlister & Sons, Chino, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. B. F. Guerin, R. 3, Box 58, Visalia, Cal.

FOR SALE—Registered Holstein Bulls. Prices right. E. B. Church, Sierraville, Cal.

REGISTERED HOLSTEIN BULLS, \$50 to \$150. Glorieta Stock Farm Woodland, Cal.

CHOICE HOLSTEIN bulls for sale. No females. Millbrae Dairy, Millbrae, Cal.

HOLSTEIN COWS for sale with records. Dr. Stetson, Napa, Cal.

REGISTERED HOLSTEIN CATTLE—E. E. Freeman, Route B, Modesto, Cal.

REGISTERED HOLSTEIN-FRIESIAN CATTLE—J. M. Campbell, Escalon, Cal.

REGISTERED HOLSTEIN BULLS for sale. Sunnybrook Ranch, Willits, Cal.

REGISTERED HOLSTEIN BULLS for sale. C. L. Morse, Route B, Modesto, Cal.

REGISTERED HOLSTEIN BULLS from A. R. O. dams. B. F. Anderson, Modesto, Cal.

A. R. O. HERD OF HOLSTEINS—Alex. Whaley, Tulare, Calif.

Jerseys.

JERSEY BULLS AND BULL CALVES—Sons and grandsons of 2 and 3 lbs. cows. None better. Cheap for quality. N. H. Locke, Lockeford, Cal.

VENADERA HERD OF JERSEYS is now offering the heifer calves from register of merit cows with official yearly record. Guy H. Miller, Route 1, Modesto, Cal.

REGISTERED JERSEYS—Herd established 1868. Young bulls from best cows. Rancho Dos Rios, R. 2, Modesto.

BREEDER OF REGISTERED JERSEY CATTLE—Duroc Swine. Young stock for sale. W. J. Hackett, Ceres, Cal.

JERSEY BULLS AND HEIFERS from Register of Merit Cows for sale. C. G. McFarland, R. 2, Tulare.

YOUNG REGISTERED JERSEY BULL Calves at reasonable prices. O. J. Ames, Oakdale.

JERSEY BULLS—Sons of Gentie's Lad and Gentie's Son's Victor. A. A. Jenkins, Tulare, Cal.

REGISTERED JERSEYS—Young bulls and bull calves. T. B. Purvine, Petaluma, Cal.

JERSEY BULLS from Register of Merit cows. C. D. Hayworth, Modesto, Cal.

Guernseys.

PACIFIC GUERNSEY HERD—Cattle selected from best imported and Advanced Register Stock. Now offering choice bulls. C. S. Rasmussen, Lodi, Cal.

EDGEWOOD FARM GUERNSEYS—First in the show ring and in official records. Few animals of either sex for sale. Edgewood Farm, Santee, Cal.

BELLA VISTA GUERNSEYS—Males from A. R. dams, \$100 up. J. W. Henderson, 1st National, Berkeley.

Other Breeds.

BREEDERS OF REGISTERED SHORT-HORN—Milk strain. Choice young stock for sale. John Lynch Ranch, Box 321, Petaluma, Cal.

INNISFAIR DAIRY SHORTHORNS—Registered young bulls for sale. Alexander & Kellogg, Suisun, Cal.

AYRSHIRES—Registered; all ages. E. B. McFarland, 412 Claus Spreckels Bldg., San Francisco.

BEEF CATTLE.

1500 HEAD HIGH GRADE HEREFORD cows. Some calves by their side. 300 head one yearling steers. 200 mixed weaned calves. Sixty head exceptionally well-bred grade Hereford bulls. Ten head of very choice registered Hereford bulls ready for service. G. R. Patton, Porterville.

SHORTHORNS—Herd headed by grandson Whitehall Sultan. Calves sired by \$10,000 Prince Imperial for sale. One or a carload for sale. Get our prices before buying. Butte City Ranch, Box P, Butte City, Glenn Co., Cal.

SCOTCH AND SCOTCH-TOPPED SHORT-HORN—We have the largest herd of straight Scotch cows in California. Foundation stock of both sexes for sale; also a choice lot of range bulls. Barco Ranch Hollister Cal.

SIXTEEN HEAD of very choice Shorthorn Heifers for sale. Roan and red in color. Aged from 18 to 22 months and bred to high-grade bull. Will take \$60 per head for cash deal. J. M. Maxwell, Dixon, Cal.

REGISTERED YEARLING SHORTHORN Bulls—Heavy-boned, thick-meated Scotch and Scotch-topped breeding. Ormondale Co., Route 1 Redwood City, Cal.

FAIR OAKS RANCH, Willits, Cal.—Young registered Shorthorn bulls for sale. Sired by Landseer 379318, grandson of Imported Villager 295884.

REGISTERED HEREFORDS—H. H. Gable, Diamond G Ranch, Esparto, Cal.

place was bought for \$25,000, and every acre of it is in alfalfa. It will be used as a lambing range, and several hundred ewes of the 8,000 head which the company owns have been turned on.

Fred Ellenwood of Red Bluff states that this is one of the most severe winters sheep men in that vicinity have experienced in 20 years in so far as feed conditions are concerned. He says that he is feeding three of four bands a ration of barley, beet pulp and cottonseed cake as a supplement to what little grass there is on the ranges. The condition was caused by the rains being late and followed by heavy frosts when they did come. Others, he says, are also being forced to feed concentrates to their large bands. In spite of this though, prices of ewes continue high, one band selling for more than \$12 a head last week.

TO DISCUSS HOG-MARKETING TROUBLES.

[Written for Pacific Rural Press.]

The various controversies which have been passed back and forth between hog raiser and packer are to be threshed out on open ground at the annual meeting of the California Swine Breeders' Ass'n in Los Angeles, January 18 and 19, if the plans of the program committee are carried out.

It is the first time in this State that the packers, as a collective body, have met and discussed the troubles of the industry with the growers as a collective body and for that reason the results should be far-reaching.

REGISTERED AND UNREGISTERED Shorthorn Bulls and Percheron Horses for sale. Paicines Ranch Co., 320 Sharon Bldg., San Francisco.

CROLEY'S CAFE FEED with skim milk will raise fine dairy heifers cheaply. Geo. H. Croley Co., Inc., 631-637 Brannan St., San Francisco.

HOPLAND STOCK FARM—Registered shorthorns. Prices on application. Hop and, Cal.

SIMON NEWMAN CO., Breeders of Registered Herefords. Newman, Cal.

GEORGE WATKINSON—Breeder registered Herefords. Bishop, Cal.

SHORTHORNS—Carruthers Farms. Mayfield, Cal.

SHEEP AND GOATS.

F. A. MECHAM ESTATE, Petaluma, Cal.—Breeders and Importers of Shropshire, Rambouillet and American Merinos, both sexes. Also Red Polled cattle. Take electric car at Petaluma or Santa Rosa for Live Oak Ranch.

SHROPSHIRE—Ewes and Ewe lambs for sale. International winner heads flock. Butte City Ranch, Box P, Butte City, Cal.

KALPKE BROS., WOODLAND, CAL.—Breeders and Importers of Hampshire sheep.

WANTED—Small carload of goats for cleaning brush. H. M. Barnegover, Santa Clara.

BISHOP BROS., SAN RAMON, CAL.—Breeders and Importers Shropshires.

CHAS. KIMBLE—Breeder and Importer of Rambouillet Hanford Cal.

HORSES AND MULES.

HORSES FOR SALE—All or any part 170 head. Imported Percheron stallion. 50 grade Percheron mares. 30 three-year-old colts, broke and mated; \$250 to \$300 per span. 30 two-year-olds; 30 one-year-olds; 30 nine months old. S. L. Skaggs, Madera, Cal.

STOCKTON PERCHERONS again winners at Sacramento. Get next brother farmer. H. G. Learned, Producer, Stockton.

REGISTERED SHIRES—Black Hawk Stock Farm. Importers and Breeders, Easton & Ward, Proprietors, Burlingame, Cal.

REGISTERED IMPORTED PERCHERON Stallion for sale cheap. Hewitt & Hewitt, Dixon, Cal.

MISCELLANEOUS

SAN FRANCISCO LIVESTOCK EXPORT Co. Eugene R. Croley, Manager, solicits foreign orders for purebred registered and merit breeding animals and fowls. California has great diversity of climatic and other conditions that enable us to select animals that have been raised under conditions similar to those of the location for which they are intended. We should be informed regarding these conditions and be allowed ample time to make selections. Nearly all disappointments in buying afar are the result of insufficient information as to conditions or to lack of time for proper selection. Our plan and terms for "raising animals to order" to fit into peculiar foreign conditions is worth investigating. References: Dun or Bradstreet, or San Francisco banks. Office, 319 Underwood Building 525 Market St. San Francisco.

CROLEY'S BALANCED PIG FEED for growing youngsters; also cheaper hog feeds for big hogs. Geo. H. Croley Co. Inc. 531-637 Brannan St. San Francisco.

STOCK RANCHES AND FREE RANGE—Different counties. Write for free booklet. Joseph Clark Sacramento.

D. O. LIVERY, 218 Hobart Building, San Francisco. Buys and sells livestock—any kind—any quantity.

DUROCS AND GUERNSEY BULL CALVES. Gilts bred to 900-lb. boar. Ed. E. Johnson, Turlock, Cal.

It is the hope of those in charge of the convention that this will be more than a breeders-versus-packers meeting. While breeders will of course be welcomed, market pork producers will be doubly so for it is their dealings with packers that are most in question, and without their views and experiences there is a chance of it being a packers' gathering. If all of the subscribers who have complained to us of markets during the past few months will take a few days off to attend this meeting there will surely be two sides of the question presented. Los Angeles is making elaborate preparations for entertainment and the meeting should mark a new epoch in livestock conventions for the State.

BRIDGFORD CO. IMPORTS HOLSTEINS.

The Bridgford Co. of Knightsen, Contra Costa county, advise us that they have just shipped from New York 30 head of registered Holstein females, among the lot being two heifers sired by King Segis Pontiac Alcartra, the \$50,000 bull; one out of a 31-lb. dam; one out of a 19-lb. two-year-old who has a 37-lb. dam. The first six dams of this heifer average over 31 lbs. butter in seven days.

There are also three granddaughters of the 44-lb. cow King Pontiac Cornucopia, these heifers being out of 30 lb., 29 lb., and 27 lb. dams and three daughters of Spring Farm Pontiac Segis, a 37-lb. son of King of the Pontiacs. They are out of 31-lb., 28-lb., and 27-lb. dams. Two heifers in the lot are by King Pontiac Konigen, a son of King of the Pontiacs and out of a 37-lb. cow.

Six granddaughters of King Walker and Paula of Chagrin Falls 3rd, who has a 30.82-lb. butter record and was a winner in the aged cow class at the last National Dairy Show, are in the shipment. All of these are out of good A. R. O. cows with records up to 30 lbs. in seven days. Besides these there is a heifer by a 33-lb. son of Pontiac Korndyke and several good record cows bred to the 44-lb. bull Spring Farm Pontiac Cornucopia.

14 COUNTIES COMPETE IN DAIRY COW COMPETITION.

[Written for Pacific Rural Press.]

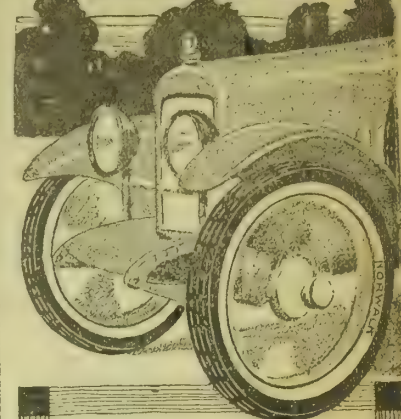
Fourteen counties were represented in the California Dairy Cow Competition for the month of November, according to information just received from the University of California. This indicates that interest is general in the competition all over the State and while the number of entrants was not so large as had been hoped for it is significant that almost three times as many cows were entered for the full month's testing in December as completed the full month of November and about 300 entry blanks have been sent out altogether.

There were 23 cows entered last month that made over 40 pounds of fat, the registered Guernsey, Imp. Cherry of the Effords Hill, owned by Hollow-Hill Farm, Colton, having the highest record with 77.293 pounds of fat from 1577.4 pounds milk. The second highest record was made by the grade Jersey Edith, belonging to J. M. Bomberger of Modesto, by producing 72.560 pounds of fat from 1343.7 pounds milk. Of the 23 cows producing over 40 pounds of fat, 10 were grades. Jerseys were represented by larger numbers than either Ayrshires, Holsteins or Guernseys.

STATE RECORD FOR JR. 2-YEAR HOLSTEINS.

McAlister and Sons of Chino advise us that they have just broken the seven-day and 30-day State records for butter with their cow Queen Pontiac Butter Boy with records of 22.64 pounds and 86.07 pounds respectively. She is a daughter of Spring Farm King Pontiac and out of Queen Pontiac Butter Boy. They also state that their cow Orndyke Duchess Korndyke has recently completed a seven-day record with 26.35 pounds of butter.

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Brookdale Nursery, Los Gatos, Cal.

Milk Marketing Stabilized.

[Written for Pacific Rural Press.]

Milk producers who depend upon the large city milk distributors for their markets can profitably sustain a producers' organization. Such is the conclusion one must make after studying the work of the California Milk Producers' Association which operates in the southern counties of the State and which was established in June, 1915.

Like most producers' associations, this one was formed primarily with the intention of improving and stabilizing the Los Angeles milk market, on which they largely depended. It was in the same poor condition which is found everywhere that dairymen attempt to do individual rather than collective bargaining.

But the organizers realized that there are other factors, equally fundamental in scope, as the raising of prices a few cents a gallon. They understood that after establishing a uniformly fair price for their product they must formulate methods for increasing consumption. This meant, besides a better standard of quality and more uniform distribution, a careful study of the milk industry in all of its phases and a careful gathering of information in order that the consuming public might have a better knowledge of the value of dairy products and methods of their production.

Securing Members.—To accomplish these purposes, the first thing necessary was the securing of members with enough milk or cream to effectively influence the distributors' supply. Also it was necessary that funds be available. This latter factor was solved by each member subscribing \$5 per cow belonging to him; and in order to insure the co-operation of every member, it was deemed advisable to secure the consent and contract of each member that should he fail to market any of his products through the medium of the Association, he would not only forfeit this membership fee but pay to the association an amount equal to 10 per cent of the value of the product marketed outside. Ninety per cent of this subscription is held, however, as a reserve fund; and where a member sells his herd, the amount of his subscription is returned at the end of two years, pro-

vided he does not re-enter the dairy business. To overcome any possible unfairness of larger operators, each member has equal voting powers, regardless of the amount of stock he holds.

Better Conditions.—No attempt has been made to market direct from producer to consumer, the policy being to contract with the large distributors collectively. Secretary-Manager S. N. Ayers informs us that records for the first year's operations showed that there had been a material increase in the price received by members over previous years; and that the entire expense involved in the association's service was only two cents a hundred pounds of milk. This included over 50 per cent of the milk consumed by the city of Los Angeles. Monthly settlements are made by the association with every member, thereby insuring prompt payments.

That the practical working out of these plans has proved beneficial in a larger way, to both producer and distributor is evidenced by the co-operation extended to the Association by all of its distributors in installing a system of bacteriological work, to better comply with the new dairy laws that went into effect in October of last year.

Improving Quality.—As a further step in this direction, which is in its final analysis an attempt to improve quality, the laboratory work is followed up by field men who visit the dairies and assist the dairymen in producing milk in a more sanitary manner. This advice is welcomed by members because they realize it is the surest way to enlargement of market and improvement of price.

Breeding and Feeding have been considered of vital importance. During the past year about 1,000 tons of alfalfa hay a month was purchased for members at a saving of \$1.50 to \$3.00 a ton. Like savings were made on concentrated feeds. These were possible owing to the large orders which the Association was able to place, and a consequent saving in commission, freight, etc. Purchase of registered bulls is advocated in all cases by the Association, and collective purchases may be made in the future.

An Easily Cleaned Corral.

[Written for Pacific Rural Press.]

Muddy corrals are the rule at this time of the year and especially is this true on the level valley lands where dairying is an important industry.

Unless the soil is extremely sandy or there is a very abrupt slope where the cows can be corraled, mud is inevitable unless some permanent form of corral covering is provided.

As a general thing gravel is unsatisfactory on the average irrigated soil because of the tendency of the cows to tramp it down into the mud.

Owen Duffy, business manager of the Napa State Hospital, says that he used to put gravel on the corral every fall and haul it out every spring with the manure, but now he has overcome that trouble by applying a course of heavy crushed rock

followed by a course of lighter crushed rock. This is rolled with a heavy roller and followed with a course of still finer rock, which is also gone over with the roller. A little crude oil, heated with live steam to about 150 degrees, is added with the last course of rock, cementing the loose pebbles together and making a corral that withstands both water and tramping and one that can be cleaned off as well in the winter as in the summer.

GETTING HIGH PERCENT. AGES OF CALVES.

[Written for Pacific Rural Press.]

Use plenty of bulls with your range bands of cattle if you would get large percentages of calves, is

Breed for Butterfat



Beryl Clothilde Hengerveld, Champion in Butter-fat Contest, Sacramento, 5-day record, 21.11 pounds, test 4.7 per cent.

The quickest and surest way to make your Holstein herd more profitable in spite of high cost of feed is to introduce blood from high-testing ancestry.

My herd has a larger percentage of high-testing cows than any other herd in the State.

My young herd bull, **DUTCHLAND SIR PIETERTJE CREAMELLE**, has high-test breeding, and is transmitting this breeding to his sons and daughters. Your tested daughters have records averaging 21 pounds, all testing better than 4%. One of these, **Clothilde Pontiac Creamelle**, is California Champion 2-year-old, with a record of 22.52 pounds at 2 years 1 month; test 4.72%.

Have a few fine young bulls that will soon be ready for service.

WRITE OR CALL AND SEE THEM.

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Breeder of High-Test Holsteins.

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Ormondale Victory, the bull shown, is one of the extra good yearling bulls we now have for sale. He is big-boned, growthy, solid red in color, thick meated, sired by the good bull **Imperial Victor**, and out of **Scottish Jane**. The kind any breeder or cattle man can safely buy.

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We Have Three Holstein Bulls For Sale

out of tested dams with good records, and sired by proven sire of excellent breeding. Priced very low. Must move to make room for younger stock. They are of serviceable age.

Bridgford Co.

Knightsen,

California

the advice of C. H. Emart of eastern Stanislaus county, who operates on low rolling range land in the Oakdale district.

Last year Mr. Emart secured close to 90 per cent calves from his 125 cows by running five vigorous bulls with the band. On rougher land it would require a larger percentage of bulls.

Another interesting feature of Mr. Emart's operations last year was a comparison of stubble with dry

range grasses in carrying steers through the summer. About two hundred acres of this stubble was rented last summer and a portion of the steers turned on it while the balance were left on the hills. After three months, the ones that ran on the dry hill feed were seen to be in much better flesh than those running on the stubble, which led Mr. Emart to conclude that his dry hill pastures are better than stubble fields for carrying steers.

Raising Poultry for Profit

SELECTING MALES FOR BREEDING.

[Written for Pacific Rural Press by Susan Swaysgood, Pomona.]

Last week we told you about selecting the layers for breeding purposes. Of course it takes time and observation to find out the value of hens by the trap-nest methods; but for the average person it is the safer way. When the Hogan system is understood and practiced, the trap nest can be dispensed with, but thousands of farmers and their wives will never take the trouble to learn how to Hoganize, although it takes but a few minutes to test a hen, after you understand it.

Now, in choosing males the trap-nest is no good; at least it appears that way because a male bird does not go in the nest to lay, so we have to judge the male bird by the record of the hen that laid the egg he was hatched from. Very few farmers or small breeders will take that much trouble, but the fancier who sells you a male bird that he says is from good utility stock has a record of all his hens' doings. He can tell you the mother and sire of every bird he breeds and offers for sale. If he does not know he is not a breeder, but just a dealer.

But suppose we want to pick out a male bird to head a pen of good, likely-looking hens and we have no record of any of his ancestors.

He must show signs of being healthy and vigorous. These signs are most prominent about the head, the eye is full, comb bright, wattles red, beak short and stout (a long-beaked fowl is never strong), the head must be held up, as if in defiance; legs wide apart, back broad across the saddle, deep breast and no matter what breed, the body must be long according to that breed.

Such a male will at least have vigor and health to his credit and it is safe to say that he is from stock that has been well worth perpetuating, or he would not have so many good points and, therefore, it will pay to use him. Unless you have a record of his ancestors, or are able to Hoganize him, that is as far as you can go in choosing a male bird.

How Many Do I Need?—This question is one of breeds, in a great measure. The heavy breeds can never serve as many hens as the small, active males can; but here is another point: they will last longer. I have known people to mate a Leghorn cockerel with 25 hens and get fertile eggs, too, but it did not last. It is impossible for the vigor of a

bird to last under such stress. If you only want eggs for a month or six weeks and you will go to the trouble of feeding a male about a quarter pound of fresh meat every night, you can breed him to 20 to 25 hens and get fairly good results, but unless he is something extra good and you are anxious to get as many chicks from him as possible it does not pay to bother.

For best results, it is always best to have two sets of male birds. Then while one lot are in service the others are recruiting and getting more vigor. They should be changed about once a month. If this is done the yards can be mated up at the rate of one male to fifteen hens in all small breeds; but if only one set of males is to be used, allow one male to every ten hens.

In the large breeds such as Orpingtons, Rocks, etc., one male to ten hens is the rule. But unless the yards are kept mated up a long time they do not need changing, provided you feed them a little on the side. Sometimes they get very poor because they are so very gallant they do not eat enough; but if you feed them on the side they will hold out a good long season.

Next week I will tell you about choosing the eggs to hatch from.

QUESTIONS ANSWERED.

Rheumatism.—Will you please give a remedy for rheumatism?—Mrs. T. C. A.

Get one ounce of iodide of potassium and put fifteen grains to one quart of water. The druggist will show you the right amount. This is for internal treatment. In addition keep the floor dry where the fowls roost and keep them fairly warm. If you notice swollen joints you can rub them with tincture of opium and weak alcohol.

Rye for Chicks.—Is rye good for young chickens as well as laying hens? If not, what grain would you suggest planting in the chicken enclosures? There are about twelve acres.—Mrs. E. F. M.

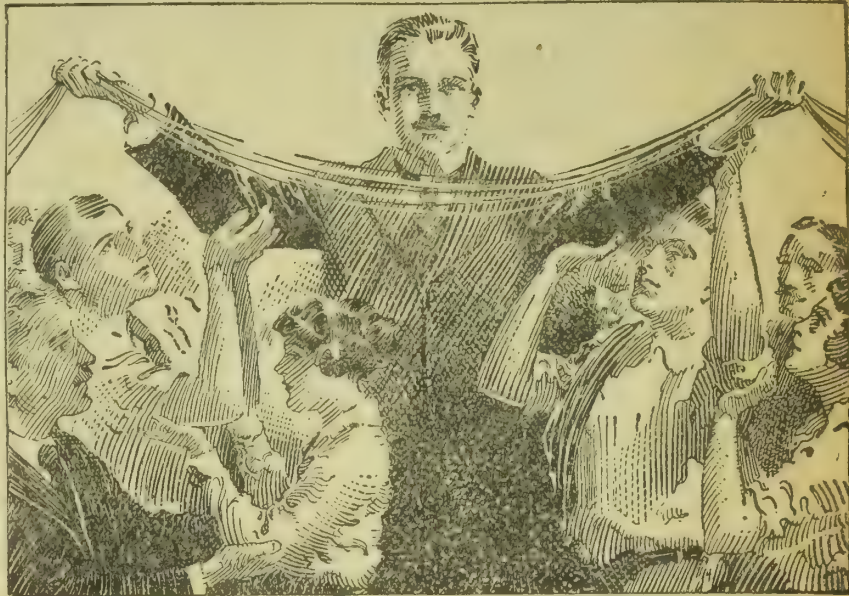
I almost commenced to figure how many chickens I could raise on that lot of land; but seriously now, rye is good for all kinds of chickens. But is it necessary to plant all that land at one time? That is the question, because by making several plantings you can have green feed all the time and some dry grain falling towards summer time for the chickens to eat and grow on. A good part of that acreage ought to be planted to winter wheat, then towards July it would be ripe enough to fall out for the growing chickens and hens to help themselves to; and my, how they would grow! Rye, too, will ripen and be just as good, but for continual green feed only a part of it should be planted at once, because in good growing weather it will get tough unless kept down.

To Sprout Oats.—I wish to enquire about the best method of sprouting oats for five or six hundred hens. After three days' sprouting I notice a white mold on top of the oats. Is this harmful to chickens? In cold weather they do not sprout well. Mrs. Swaysgood says one bushel of

dry oats make four bushels of feed. Does this mean in bulk or food quantities?

Answering the latter question first, it means bulk, when they are sprouted right. Your oats are being kept too wet and not warm enough. Soak them five or six hours in warm water, then cover with gunny sacks and not sprinkle for at

least two days, leaving the oats in a heap, not spread out until they have started to sprout. Sprinkle a little dry sulphur over the boxes or ground where you sprout, but don't overdo it. Too much sulphur will cause paralysis. Certainly the mold is harmful. Any kind of mold is harmful; but don't quit because of that. Learn to overcome it.



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sible worry regarding his own welfare. His whole-hearted attention can be devoted to serving the public.

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There is something in the telephone organization which imbues every employe with a spirit of loyalty to the public. All feel a direct responsibility for each other because each recognizes that only by mutual endeavor can they render the high standard of service which is expected of them. They uphold each other's hands so that the public may be served.



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WANTED—A number of hot water incubators. Juvenile preferred, 300 egg capacity or over. 220-egg type. Hovanized. S. C. White Orpingtons and Sicilian Buttercups, cockerels, hatching eggs and chicks. All information gladly furnished. M. S. Woodhams, San Mateo, Cal.

WHITE PLYMOUTH ROCK, White Leghorn Incubator Chicks. Breeding stock. Eggs high class. Scientifically bred. Awarded all first prizes. California State Fair 1916. Make your arrangements for 1917 delivery of chicks. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

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McFARLANE STRAIN White Leghorn Eggs, \$1.50 per 15, \$2.50 per 30, \$5.00 per 100, \$50 per 1000; chicks, 12c each, until March 2d, then 10c. Big plant, lowest prices, best stock. Catalogue free. Newton Poultry farm, Dept. 1, Los Gatos, Cal.

WHITE LEGHORN AND BROWN LEGHORN day-old chicks from healthy, vigorous breeders. "Chicks well hatched are half-raised." Will be pleased to send you our circular. San Jose Hatchery, 373 Meridian Road, San Jose, Cal.

THE SANTA CLARA VALLEY HATCHERY solicits your orders for Fall and Spring delivery in 8 breeds of baby chicks. Order early and get the best. Jos. A. Bihn, Lincoln Ave., San Jose, Cal.

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RHODE ISLAND REDS—Cocks, Cockerels, Pullets, Hatching Eggs. Blue Ribbon winners at last Oakland Show. Wm. Larm, 3915 39th Ave., Berkeley, Cal.

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WHITE WYANDOTTES—Fine-ribbon winners. Eggs \$2 to \$5. Chicks, pullets, cockerels. R. W. Stawetski, Route 2, San Jose, Cal.

HATCHED CHICKS from Barred Rocks, B. I. Reds, White Leghorns. Good stock. Send for circular. G. L. Hawley, Madras, Cal.

EASTMAN'S BRED TO LAY Barred Plymouth Rocks, Chicks, Eggs, Cockerels. Fairmount Poultry Farm, Fairmount, Cal.

CHICKENS, DUCKS, GESE, GUINEAS, Pea Fowl, Pigeons. Wm. A. French, 545 W. 1st St., Stockton, Cal.

WHITE ORPINGTONS—Exclusively limited number pullets. Reasonable prices. L. J. Bunker, Lemoore, Cal.

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THOROUGHbred WHITE HOLLAND Turkey—Toms \$5; Hens \$2.50. Old White Holland Toms, \$7.50. Pearl Guinea, \$1 each. E. A. McElday, R. D. 1, Ukiah, Cal.

HART'S BRONZE TURKEYS AND EGGS—Large reduction in price of stock. Order now for fall delivery. Free Circulars. Albert M. Hart, Clements, Cal.

MAMMOTH BRONZE TURKEYS and Eggs Booking egg orders now for early Spring delivery. M. M. Reiman, Placenda, Cal.

MAMMOTH BRONZE TURKEYS—Mrs. H. B. Kimball, Farmington, Cal.

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Common Sense Chicken Talks
Pointers to Amateurs
How to Read Poultry Diseases

GLOBE MILLS, LOS ANGELES, CAL.

Remedy for Lice.—Will you tell me of a remedy for a long white louse that seems to stay on my chickens? I use a good spray for the house and roosts, but it does not kill these lice.

No amount of spraying will kill the body louse, unless the fowls are confined over the fumes, as is sometimes done by painting the bottom of a box with a strong liquid lice killer, putting the hens in the box and covering them up for several hours. This method is not practiced as much now as formerly, because it has not been found to do as well as simply dusting the hens with commercial insect powder from a feed store. Dust your hens twice, ten days apart, and you will not be bothered with lice for quite a while. To dust a hen, put her on her back in your lap and commence at the tail, opening up the feathers as you go; sprinkle the dust and rub into the feathers, going down to the skin, under the wings and along to the breast and throat; now turn her over and dust around the tail feathers, all along the back, neck, and head; and as a sure job I always put the hen in a gunny sack for about ten minutes. This light imprisonment is to prevent her from shaking all the dust out of her feathers before it does the work.

Pullets Don't Lay.—I have white Plymouth Rocks, hatched in March, now seven months old and not laying yet. What is the cause? I feed gyp head corn in the morning and skim milk. They have range.—H. G. W.

Seven months is not unusual for white Rocks to go before commencing to lay; your ration is too scant to induce pullets to go into the egg business. Give them a good hearty feed at night as well as morning; and a little beef scrap or ground bone will help the milk out. This cold weather, hens that are not fed mash drink very little in comparison with what they should to induce them to lay eggs. Your pullets are all right, and as soon as you feed a little more generously they will respond.

DROOPY WINGED CHICKS.

While a few beginners, observing the long wings of their Leghorn chicks, congratulate themselves on rapid growth, a great many of the more observing beginners write to Helen Dow Whitaker of the State College of Washington, asking how to prevent them. In reply, Mrs. Whitaker states that droopy wings and loose feathering are more frequent among the Leghorns and other light-weight breeds than among the heavier birds which seem to use food first for frame and muscle and later for feathers. In general, drooping wings show lack of assimilation of sufficient nourishment in the food to keep up with rapid feathering. The following are conditions favoring them: Overheating, crowding, impure air; but especially lack of exercise and lack of green food in a rather rich ration, which finally results in indigestion. The chick is unable to assimilate the nutriment in his food and he suffers from lack of nourishment just as surely as though he were underfed.

To avoid droopy wings, avoid the conditions that induce them. Feed a ration containing oats, first rolled oats, breakfast food form but un-



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—Unequaled for an old roof, as it fills up the cracks and makes it like new. This price in five-gallon lots.

Shingle Stain 85c gal.

—The famous Standard brand, red, green, and grey at this price in five-gallon lots. Mixed with high grade colors. Will last and wear excellently.

OUR SPECIAL READY ROOFING \$1.00

—Anyone can lay this roofing without previous experience; all nails and cement included in each roll, which covers 100 square feet of roof surface, each roll containing 108 square feet, to allow for lap at joints.

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BOX 201, ROUTE 6, SANTA ROSA, CAL.

cooked, from the fourth week on sprouted oats; also feed cracked wheat and after the 14th day an equal bulk of finely cracked corn. For a mash, use to every 10 pounds of bran at least one pound each of dry granulated bone and high grade beef scrap. Best of all, give chicks all the clabbered milk they will drink, but do not let the milk become bitter before feeding. Keep the chicks hungry and keen for each meal, feeding little and often. Twice a day feed an abundance of tender, juicy green food. Send every chick to bed with a comfortably full crop. Under these conditions, if the chicks are not of weak stock, few will have droopy wings.

RICE FOR CHICKENS.

To the Editor: Would you inform me if rice would be a good substi-



Try the Coulson
System of Feeding
Our free book "Chickens from shell to Market" gives full particulars
Coulson Co. Petaluma Cal.

tute for wheat as chicken feed, seeing that wheat is so expensive?—P. A. K., Elmira.

Unless you are fattening the birds, rice should be fed considerably with protein foods, for it is not much of an egg-making feed. If laying hens get fat, they have ovary troubles, and anyhow they get too lazy to be good layers. Cracked rice is \$50 per ton.

The business of the Tulare Co-operative Poultry Association in 1916 will exceed \$75,000, it was announced by Manager I. N. Foss.

Mrs. Best's Letter.

My dear Friends: At this time of year, the thrifty housewife (if she has any funds left from Christmas) stocks up her own wardrobe and that of her family and looks after the needs of the house as well.

All the big stores have white sales in January that include bed linen—sheets, tablecloths, pillow cases and towels and also all white wear for women, nightgowns, petticoats, corset covers, etc. These articles are always below the regular price and are well worth investing in. This year the prices will be higher than usual owing to the advance in raw materials. These sales usually last the entire month and if you are unable to come yourself to make selections at the store, you will find them more than willing to send you anything you desire at a price you wish to pay.

The mail order business in the large stores is in charge of capable clerks who shop over the store for you as carefully as you could yourself.

In other lines of household articles you will find substantial reductions also. Lamps, clocks, china-ware, desks and nearly all odd pieces of furniture are much reduced. The plan seems to be to get the stock back to normal again.

Most of the stores ship free within a hundred miles while some send anywhere in the U. S. free of charge.

In wearing apparel, the prices are cut very pronouncedly. Garments that sold as high as \$50.00 will sometimes be offered at \$25.00. Coats are always very much reduced, as it is only a short time until spring garments arrive. If you use good judgment in selecting you can often pick up a garment at reduced prices that will be almost the same style as the models which are coming in at high prices.

Unless you expect to wear the garment out very speedily or can afford to discard it, do not select styles that are too extreme nor colors too pronounced, no matter how great the reduction in price. A more conservative garment that can be worn indefinitely is much cheaper even though higher in price to begin with.

Clearance sales in suits, blouses, hats and shoes are in evidence everywhere. The difficult matter is to decide what one really needs and what will be harmonious with the other garments you possess.

If we could all of us decide on the becoming color to us and confine ourselves to it in varying shades, there would be fewer conflicts in colors than we see now. Yours devotedly,
Rosabella Best.

SEA-TURKEY PIE.

Disc 4 potatoes and 4 carrots and stew until tender. Cream with 1½ cups of milk, 1 tablespoon butter, 1 teaspoon salt, ¼ teaspoon pepper, a dash of mace and 1 teaspoon flour. Make a biscuit dough of 3 cups flour, 2 tablespoons shortening, 2 teaspoons baking powder, 1 pint milk. Line a baking dish with part of the dough, fill with creamed vegetables and 1 can of tuna diced. Place cover on and bake 20 minutes. Serve hot, garnished with parsley and cranberries.

THE HOME CIRCLE

AN INTERESTING PARTY.

The holiday season always seems the time for a party. A novel one is arranged by inviting the guests to come as advertisements. Inexpensive costumes are quickly put together if one has the idea.

Domino sugar is prettily represented by a black dress decorated with white dots arranged in domino patterns and little cut-out masks pasted on the dress.

Dutch cleanser is easily gotten up with old full clothes made into a Dutch costume and by carrying a big club with which to "chase dirt."

The Gold Dust Twins of course will add gaiety to the party and if stockings and black gloves are used, the blacking can be used sparingly.

Heinz 57 varieties will become some one who wears green well. Pickles, etc., pasted on will trim the dress and a necklace suspending 57 will identify the costume.

The smiling Cream of Wheat man with his white suit and black face will remind one of the breakfast dish.

A coffee advertisement of M. J. B. Why? could be portrayed by a huge question mark and "Why" on the front and back of a Yama Yama costume.

Sperry Flour in the baker's costume, with the familiar cottage with the sun rising behind it cut from a paper, will furnish another costume.

Scotch Rye could be portrayed by a youth in kilts and rye stuck in the cap.

A dainty white dress with wired cheese cloth wings would make a little Fairy for Fairy Soap.

Arrows applied on any foundation would signify Spearmint chewing gum.

Roger Bros.' silver could be easily portrayed by a colonial costume and the regulation bonnet and package; 1847 pinned on or worn in some way would help identify this person.

The Firestone tires would be the easiest advertisement to represent by merely carrying a brick or stone.

Many other ideas will present themselves no doubt, and much pleasure and fun can be had trying to identify each other.

ENGLISH PLUM PUDDING.

Scald 2½ cups stale bread crumbs with 1 cup milk. Work ½ lb. beef suet until creamy; add ½ cup sugar, ½ cup maple syrup, 4 eggs well beaten, ½ lb. raisins stoned and cut in pieces, ½ lb. citron, cut in thin strips, and ½ lb. currants dredged with 3 tablespoons flour and 2 teaspoons baking powder; then add ½ cup of brandy. Turn into buttered mold and steam 24 hours. It may be steamed 12 hours one day and 12 hours the next. Reheat for serving 1½ hours.

STUFFED DATES.

Shell and remove meats from English walnuts, breaking them into quarters. Make a cut the length of the dates and remove the stones. Fill cavities with the nut meat and shape in original form. Roll in sugar and pile in rows on a small plate.

THE BAMBINO.

On the Capitoline Hill, in the old city of Rome, is the church which has the honor of being the home of the Bambino.

The word "Bambino" is the Italian for "baby" and this particular baby is a wooden image which was carved by a pious monk in the city of Jerusalem about the time that Columbus discovered America. The little figure was finally sent to Rome and became such an object of love and reverence that people have for hundreds of years been giving it presents of precious stones. On its head is a little crown ablaze with rubies, diamonds, and sapphires. It has a robe of royal purple, also resplendent with gems.

This little sacred image is usually carefully concealed, but on Christmas week it is brought out and put into the arms of the Virgin Mary in one of the chapels of this church of Aracoeli.

A wooden platform at that time is built before it, and the little children of Rome come up and speak their pieces, telling of what the good Christ-child has done for them through the year. The fathers and mothers are gathered around on the stone floor below and listen with quiet reverence.

To me this is a very beautiful ceremony. I think of the sacrifice it has cost many poor people to give these rare presents, and I have no doubt that they have been made better for such gifts of love. The children too, have done their share in repeating their lines, which are their own little attempts to show love and devotion.

During Christmas week a stately procession passes through the streets of old Rome, and in the midst is borne, on a raised platform, among white-robed priests, a beautiful figure of the Virgin Mother Mary sitting with this same Bambino in her arms.

The sidewalks are all lined with people bowing low, and many of them kneeling upon the stones.

It is all a beautiful and impressive sight, and, though we have not been brought up to worship in this way, we cannot help feeling that the true spirit of religion, wherever we see it, is really a beautiful thing that in one way or another should come into the lives of us all.—By Dr. William B. Harlow.

TRAVELING GIFT.

For the friend who is to make an extended trip, a hat bag of silk or linen makes an acceptable gift. Make the bag about 24 by 26 inches of some dark dust-shedding material preferably silk and run a draw-string at the top. A simple monogram makes the best ornamentation.

COOKING IRISH POTATOES.

To get the most food value out of boiled potatoes, they should be boiled with the skins on. When done, drain, hold on a fork and pare as rapidly as possible. Sprinkle with a little salt and serve. This preserves the valuable outer layer of the potatoes lost by deep paring.

Floral Department.

[By Geo. N. Tyler.]

[Note.—Last week Mr. Tyler's article upon soils was continued over to this week, but as the matter sent in later was so timely, we have transposed the articles. Next week we will print the balance of the articles on soils.]

Owing to the extremely cold weather we have been having the last two weeks, there is very little to do in the garden, except pruning of deciduous plants and shrubs.

Roses should be pruned by this time, and if you wish to plant or transplant any, do it now.

During Christmas week a great many flowering bulbous and other plants are given as presents. Remember that these have been forced in greenhouses, with excessive heat and moisture, and do not be surprised at their dropping their leaves and flowers. All bulbous plants require a great deal of water while in flower, and as soon as the flowers wilt, plant them out in rich garden soil and encourage them to make as much growth as possible.

Watering Plants.—There is no set rule for watering house plants. You have to watch and study your plants and find out the best way to treat them, and remember also that the winter season is the natural resting period of most plants, and while they are resting require very little water. There is a great deal of difference between allowing a plant to get wilting dry and one that has used up the moisture in the soil and is ready for more. Plants should never be kept at the same degree of moisture at the root all the time, except an aquatic. Any plant that does not dry out at the root in a reasonable length of time is not in good condition, as it has no feeding roots to take up the moisture. When they are in this condition, water sparingly, and let them go on the dry side till new feeders are formed. Most people, when a plant is in this condition, give more water and either sour the soil or rot all the roots, so that the plant will never recover.

Don't Make Sudden Changes.—You must use judgment in giving plants sun, etc. If you follow nature you will find that deciduous trees in their wild state shed their leaves, letting the plants, ferns, etc., growing under them have all the sun possible during the short winter days, and as soon as the days grow longer and the sun gets too strong, the trees leaf out, giving the necessary shade. Another thing, remember that plants do not like extremes. That is, they do not like to be shut up in the dark one day and put out in the wind and sun the next. Move your plants around as little as possible, for when they get used to one location, they dislike to be disturbed and it checks them to move them around from place to place. It does them no harm to turn them around once in awhile so they will grow evenly. A plant cannot stand a strong draft any more than you can yourself. A plant is like a human being—it wants a good drink when it is thirsty and no more until thirst again.

They also like a syringing of the foliage, but plants such as rex begonia dislike too much moisture.

TOMMY.

[From Grandpa, Christmas, 1915.]

Oh, Tommy's the boy for me, though;
 Yes, Tommy's the boy for me!
 He can run like a squirrel,
 And hop like a frog,
 Jump over a fence
 And walk on a log.
 May Santa Claus come
 With a fife and a drum,
 A monkey, a pocket-knife,
 Lots of pop-corn,
 A dancing black bear,
 And a big tooting horn!

Oh, Tommy's determined he won't
 be a fool,
 So he gets all his lessons at home
 and at school;
 He reads Mr. Crusoe and reads Robin
 Hood,
 And Mr. Swiss Robinson he thinks
 very good.
 Oh, Tommy rides a bicycle;
 And he can almost swim,
 And wouldn't I give a gold piece—
 A big gold piece for—him!

THE STORY OF THE WILLOW
PATTERN.

There are many versions of the story illustrated on the old-fashioned china known as old blue willowware. There are three variations of design, called the "one man," the "two men," and the "three men."

All share one scene, but the actors in the drama vary. The very humble home of a lover is shown at the upper left-hand corner, while below, to the right, is depicted the handsomer dwelling of his loved one, surrounded by walled-in gardens, the extent of which indicates great wealth. The willows are always there, as is the stream, with its bridge and boat.

The lover going over the bridge to see his lady is known as the "one man" pattern. The second output of the Caugley potteries was the "two men" pattern, which showed in reality two lovers on the bridge: they were eloping, so goes the story, with intent to hide, till nightfall, when they could leave by boat.

The "three - men - on-the - bridge" design is that in which the lovers are followed by the irate mandarin father, from whom, it is said, the lovers escape to the boat, are rowed across, live happily forever after, and are at their deaths turned into birds as a reward of faithfulness.

The story, as generally told, is thus related by Edith Roberts in the Family Friend:

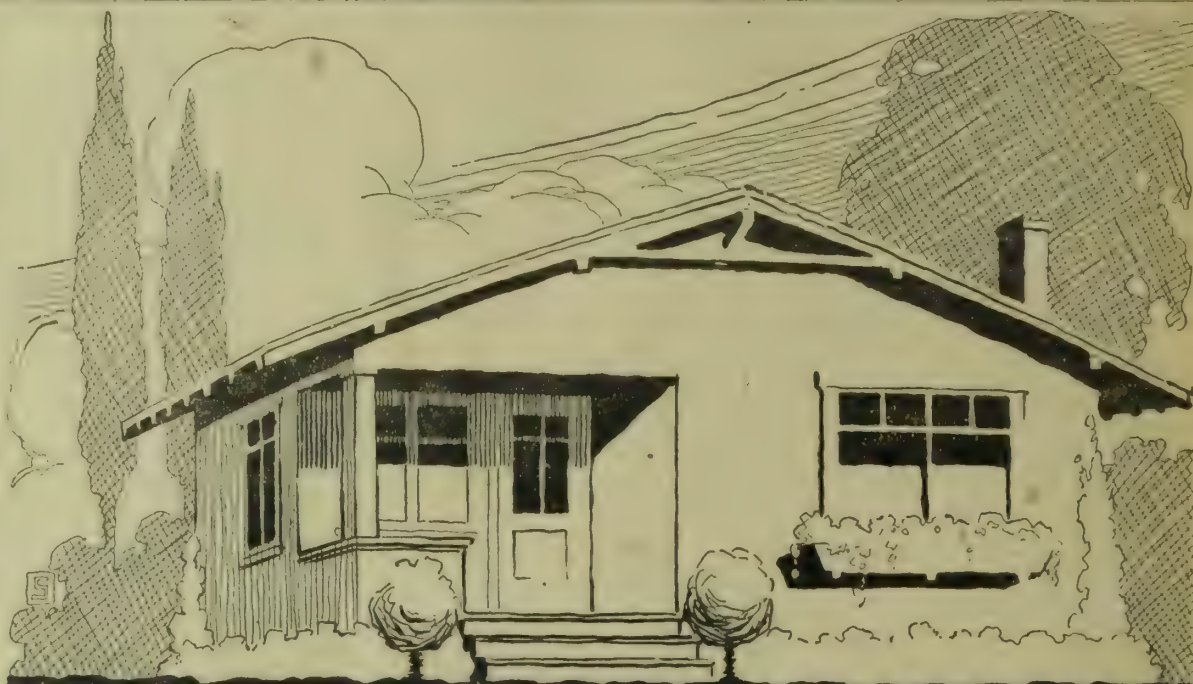
"A certain mandarin, or Chinese nobleman, had a beautiful daughter named Li-chi, with whom a humble secretary called Chang fell deeply in love. In spite of the difference in their positions Chang wooed and won Li-chi, but, when he asked the mandarin's permission to marry his daughter, the great man flew into a terrible rage and absolutely refused ever to give his consent to such a union. The lovers, being exceedingly devoted to one another, felt that they could not live apart, so they arranged to run away together and get married. Now, the palace of the mandarin stood near the waterside, while Chang's home was upon an island not far distant. Thither the young man thought to take his beloved, so, assisted by the mandarin's head gardener, who was his friend, he laid plans for a boat to come one night to take Li-chi and himself across the water. But, alas! very soon after the mandarin learned whither the runaway lovers had fled and quickly followed them. So ter-

rible was his wrath that he was about to flog them to death when, by the merciful power of magic, they were turned into turtle doves, and so escaped his cruel rage. And as turtle doves we may think of them living happily ever after!

"Now, if we look at the 'willow pattern,' we shall see Li-chi, Chang, and the friendly gardener crossing the bridge on their way to the boat, which lies in the middle of the water. The upper left-hand corner of the plate is filled with the picture of Chang's island home, while the doves which are seen flying about near the top represent the lovers af-

ter they had been transformed. On the right-hand side of the plate stands the mandarin's palace, in front of which is a pagoda, or sacred tower. An orange-tree overhangs the pagoda, while peaches grow beside it, and a willow-tree stands near the bridge. The peaches are said to stand for marriage and also to mean long life, while orange blossom is always a favorite flower at weddings. The willow-tree, which has given its name to the pattern, no doubt stands for the sadness which overhung the lovers' courtship, owing to the mandarin's unkind behavior. We have all heard of the weeping willow.

"It will be noticed that the bridge is zigzag, and this is because the Chinese believe that evil spirits cannot turn corners, but must go in straight lines. They therefore build their bridges and walls in a zigzag fashion, that demons may not follow them. In Shanghai the bridge is built in this way and the pavilion believed to be thus placed beyond all evil influence. A high zigzag wall is built across the entrance, some distance from the door, of nearly all government buildings and many private residences, for the purpose of preventing the entrance of evil spirits."—Christian Advocate.



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Since the introduction of the READY-CUT method of construction we are able to offer you not only a large saving on the cost of materials but also a substantial saving of 25 to 33 1/3% on carpenter labor by providing All Materials CUT-TO-FIT.

No waste, no extras to buy because all the material you need is included in the price.

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Money Saving Prices on Paint and Roofing

Guaranteed ready mixed paint that sells retail at \$2.50—our price \$1.72 per gallon.

\$1.50 Barn Paint for.....	\$1.10 per gallon
\$1.60 Bungalow Paint for.....	1.15 " "
\$5.00 Spar White Enamel for.....	3.25 " "
\$3.50 White Enamel for.....	2.43 " "
\$4.25 Exterior Spar Varnish for.....	2.98 " "
\$3.50 Varnish for.....	2.45 " "
\$2.50 Varnish for.....	1.75 " "

ROOFING

1 ply, Guaranteed 5 Years.....	\$1.50 per roll
2 ply, Guaranteed 10 Years.....	2.05 " "
3 ply, Guaranteed 15 Years.....	2.55 " "

This roofing sold at retail at \$2.50, \$3.50 and \$4.50 per roll.

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FLOOR PLAN
Floor Plan of \$325 House

Mail this coupon NOW!

California Ready-Cut Bungalow Co., Dept. P-2
 1811 South Main Street, Los Angeles.

Please send me complete information showing how I can save \$100 to \$500 on your California Ready-Cut Bungalows.

Name

Street or R. F. D.

Town State

**California Ready-cut
Bungalow Co.**
1811 South Main St.
Los Angeles

Good Health.

[By H. E. Pastor, M. D.]

Sleeplessness.

Last week we sought in this column to convey to the readers of the Rural Press some general notion of the nature of that condition of physiological unconsciousness called "sleep." In this issue we will devote a little space to insomnia, or the absence of sleep when sleep should be the normal state of the body. Insomnia is a very commonplace and troublesome affection these days, when strenuousness is something more than a fashionable affectation; and while the forms of this trouble are as various as its causes, it is practicable here to consider only a few of them. The commoner cases of sleeplessness result from some temporary functional disturbance, while the persistent and more intractable cases are incidents of some brain disease, or other bodily disease having pain as a prominent symptom. These latter can be controlled, as a rule, by the use of hypnotic drugs only, and such medication should not be attempted except under medical guidance.

The neurasthenic who complains of not sleeping well, or at all; the pale, anaemic girl, who is restless at night and sleepy in the daytime, without being able to get satisfactory sleep at any time; the sufferer from malaria, gout, uraemia, etc.,

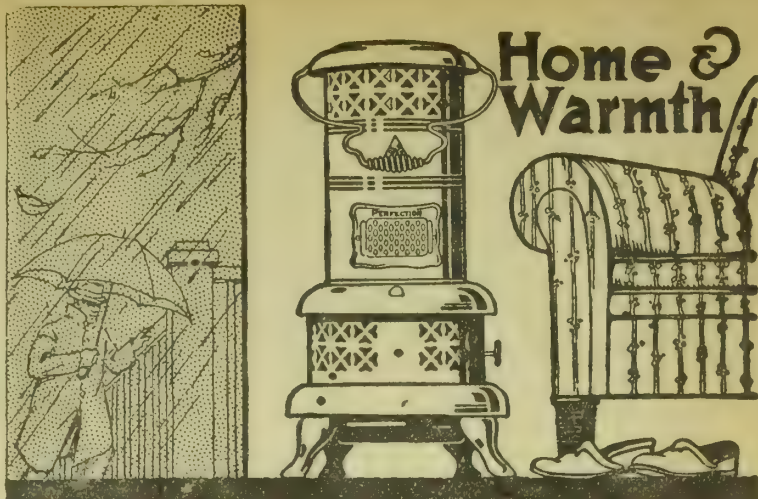
which poison the blood current, which in turn irritates the brain and so inhibits sleep—these are cases where the only chance of relief is to treat and cure the disease. Excessive smoking, tea, coffee, or cocoa-drinking overcharge the brain with toxic products which seriously disturb the tranquillity of the sleeper in his efforts to obtain rest. The obvious remedy is to quit using these drugs.

Where sleeplessness arises from worry, overwork, eating too much or eating too little, relief may be obtained by correcting the causative bad habit. Various mechanical means are resorted to alleviate the effects, with more or less success. The excess of blood can be diverted from the brain to other parts of the body by brisk rubbing with a coarse crash towel, especially along the spine. A hot footbath on retiring is good, so also is a glass of hot water or milk drunk slowly. Late, heavy suppers should be avoided, and no mental work that taxes the brain even slightly, should be undertaken. Argumentation, anger, and deep emotion of every kind should be shunned. Read some dull and monotonous literature—anything uninteresting will do. It tends to lull the brain to overpowering drowsiness.

Don't stint yourself of sleep, for too much deprivation of sleep destroys the capacity for sleep. If you have got to get up early, don't go to bed late; and if you have got to go to bed late, don't get up early—circumstances permitting. But whether circumstances permit or not, depend upon it the physiological effect is the same. A cold, well-ventilated room is better than an opiate to induce deep sleep, but you must have warm bed-covering. Don't sleep with the pillow too high or too low; in either case free respiration is interfered with, and oxygen is not freely supplied to the brain cells for reparative work.

Fresh air, with its abundance of oxygen, is a splendid sleep-persuader, and when combined with balmy sunshine, is the sovereign soporific. Of both these things, however, the rural dweller fortunately, has a great abundance, and is blessed accordingly. Still, farm life, like other phases of human existence, has its trials and tribulations. Worries over crops or the herds cannot be avoided betimes, and worry is a corroding canker to the sensitive brain matter, and fatal to sound sleep. The orange grower cannot sleep on a cold night fearful that Jack Frost will nip his oranges, the financially straitened rancher lies awake wondering why the Farm Loan Law limps along so slowly in the direction of his ranch with its hand-out of cheap money, and the poultry farmer wakes up about half-past two in the morning and worries the remaining hour or two of his rest period over the high cost of feed, and so it goes on through the whole gamut of rural occupations. Cases of this kind are beyond the reach of medicine or the physician's skill. But remember, worry won't mend matters.

Finally, don't use hypnotic drugs; they are dangerous and treacherous. When they have broken down



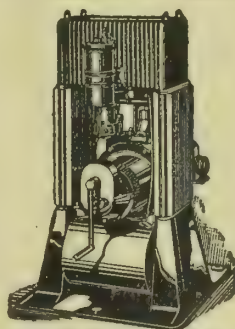
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ELECTRICAL ENGINEER.

104 Clay Street,

San Francisco, Cal.

your health and mastered your will power—they then fail utterly in bringing the boon sought. They first woo sleep, then murder her.

How Colds Are Caught.

For the edification of whom it may concern, the California State Board of Health announces: "You can 'catch' cold only from a person who has a cold. Acute colds are not caused by overeating, or lack of fresh air and sleep. These are but predisposing factors. All acute colds are due to infection received from another person who is so infected." All of which makes one curious to know how the fellow with the first cold caught his.

Swat the Squirrel.

Claiming that the common ground squirrel of California harbors the flea, which transmit to man the inoculating virus of bubonic plague, the California State Board of Health is co-operating with those who are aligned against the squirrel on economic grounds to reduce the squirrel population of the State. The farmer will welcome this new ally.

California FRUITS

And How to Grow Them.

A Manual of Methods Which Have Yielded the Greatest Success; with Lists of Varieties Best Adapted to Different Sections of the States.

By Edward J. Wickson,

Emeritus Professor of Horticulture, University of California.

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Barker Bros
ESTABLISHED 1890

Complete Home Furnishers.

724-738 S. Broadway,
Los Angeles, Cal.

SAN FRANCISCO

San Francisco, Dec. 27, 1916.

WHEAT.

The Eastern decline due to peace talk continues, and has begun to affect the Coast markets, especially as more northern grain is coming in. Several grades have accordingly been marked down a little, and there are some indications of a further drop, as it is understood that several cargoes of wheat are coming here from Australia.

[First-hand prices on strictly first-class grain, San Francisco.]
 Sonora wheat\$2.75@2.80
 Northern club2.65@2.70
 Calif. club, ctl.2.50@2.55
 Northern Bluestem2.80@2.85
 Northern RedNone offered

BARLEY.

Local trading is extremely dull, either in spot or future barley. Holders as a rule maintain a firm attitude, but the market is hardly as strong as it has been.

Seed, ctl.\$ 2.50
 Shipping, ctl.\$2.35@2.40
 Choice feed, ctl.2.20@2.25

OATS.

Values remain steady, with a featureless market during the holiday period.

Texas Red seed, ctl.\$2.85@3.00
 Red feed1.80@1.85
 White2.15@2.20
 Black seed3.50

CORN.

A little wider range is quoted on Egyptian, according to quality. Supplies are firmly held, but there is little movement just now.

[First-hand prices on strictly first-class grain, San Francisco.]
 Eastern Yellow, ctl.None here
 California2.00@2.25
 Milo Maize2.10@2.25
 Egyptian, new2.20@2.35

BEANS.

The market remains extremely quiet, as usual at this time of year, when the trade is occupied with inventory. It is expected, however, that buying will be resumed comparatively early in the new year, as there does not appear to be much surplus in dealers' hands; while the light supplies remaining in the country indicate a generally firm market. A few holders of pink beans have been more anxious to sell, causing a little easiness in this line; but red kidney beans are getting very scarce, and Mexican reds are higher. Limas also are very firm, with most of the crop out of growers' hands. While tepary beans have not been well received here, carload shipments have been going East from Porterville.

[Uncleaned, on wharf, San Francisco.]
 Bayos, per ctl.\$5.50@5.75
 Cranberry4.75@5.00
 Blackberry beans6.50@6.55
 Horse beans3.25@3.50
 Small Whites (south)7.00@10.50
 Large Whites8.10@9.50
 Pinks5.75@6.50
 Limas (south)7.75@7.90
 Red Kidney9.00@11.00
 Mexican Red6.50@7.00
 Tepary beans5.99@6.00

HAY.

Arrivals have been a little larger than for some time, and it is believed that the car shortage will be less acute from now on. This has caused a little easier feeling locally in regard to prices, though so far there has been no drop in prices. The strongest demand at present is for the cheaper grades, which have been scarce here, and are wanted in large quantities in the principal feeding districts. Local arrivals consist mainly of the better grades, which move slowly, the consuming demand here having decreased somewhat. Stocks in local barns, however, have been pretty well depleted, and as conditions become easier there should be a general movement to replenish supplies.

[Prices per ton, carload lots, San Francisco.]

Wheat, No. 1\$16.00@18.00
 No. 214.00@16.00
 Tame oats13.00@15.50
 Wild oats13.00@15.00
 Alfalfa12.00@15.00
 Stock hay10.00@13.00
 Straw, per bale60@.80

FEEDSTUFFS.

No further change is noted in values, most lines being rather firm at the recent high level, though there is little demand at the moment.
 Beet Pulp, per ton\$30.00@31.00
 Alfalfa meal, per ton21.00@22.00
 Bran, per ton30.00@31.00
 Oil Cake40.00@41.50
 Coconut cake or meal31.00@32.00
 Cracked corn50.00@55.00
 Middlings50.00@55.00
 Rolled Barley46.00@47.00
 Tankage47.00@48.00
 Rolled oats47.00@48.00
 Rice middlings31.00@32.00

POTATOES, ONIONS, ETC.

Potatoes receive practically no attention just now, and it is uncertain whether the market will pick up next month, the present feeling being one of weakness, with large stocks in River warehouses, and limas potatoes available from Oregon. Onions are very firm. Storage stock is being picked over, and \$3.25 is the inside price; though arrivals from Oregon have relieved the shortage a little. Garden truck is rather scarce, with little appearing from the south in most lines. Lettuce is higher, and celery holds firm.

Lettuce, crate\$1.00@1.25
 Celery, Delta, crate\$3.00@3.50
 String Beans1.00@1.25
 Lima beans1.00@1.25
 Peas, lb.54@56
 Tomatoes, lugs, L. A.1.00@1.25
 Rhubarb, lugs75@1.00

THE MARKET REPORTS

Figures Given Are Independent and Reliable.
 Prices Quoted as Paid to Producers.

Potatoes, ctl, Delta2.00@2.10
 Salinas2.40@2.60
 Oregon1.90@2.25
 Onions3.00@3.25
 Garlic, new crop, per lb.3@4c

POULTRY.

Turkeys closed rather easy on the Christmas market, with some surplus, and values at the close were not very firmly maintained. Just now values are hardly more than nominal, though some birds are coming in. Chickens are coming in rather slowly from nearby points, and the trade looks for a lively demand.

Turkeys, dressed, large, lb.25@29c
 Turkeys, live, lb.Nominal
 Broilers, 18 lbs. to doz. and less, lb.26@28c
 do, over 18 lbs. to doz.23@25c
 Fryers22@23c
 Hens, extra, per lb., colored20@21c
 Small leghorn15@17c
 Smooth Young Roosters, per lb.22@23c
 (3 lbs. and over)38@40c
 Geese, per lb.17@18c
 Old17c
 Belgian Hares12@13c

BUTTER.

Extra butter has shown scarcely any change from the last quotation. There has been practically no shipping movement, but the local demand has been quite active, absorbing most of the offerings.

Extra34 34 34 1/2
 Prime 1sts 33 1/2 33 1/2 33 1/2 33 1/2
 Firsts32 1/2 32 1/2 32 1/2 32 1/2

EGGS.

While there is no outside demand, local holiday buying caused a jump in prices which held over into this week, despite large arrivals. There has been little weakening yet, but the trade is looking for a sharp drop at any time.

Extras38 38 1/2 43
 Sel. Pul.33 33 33 1/2 33 1/2 32 1/2

CHEESE.

Both flats and Y. A.s are higher this week, and Monterey cheese holds fairly firm. This is due to a renewed Eastern shipping demand, which is readily absorbing the rather large offerings.

[S. F. Dairy Exchange prices.]
 Y. A.s, fancy20 c
 Fancy Calif. Flats, per lb.16 1/2 c
 Monterey Cheese19@20 c

DECIDUOUS FRUITS.

Supplies in the fresh fruit market are now limited almost entirely to apples. Bellflowers are getting pretty well cleaned up, and with holders anxious to dispose of the remainder the price has eased off. Newtowns, however, are firmer, with warehouse stocks moving off well both locally and for shipment.

Apples:
 Christmas apples, box\$2.00@2.25
 Bellflower, box75@1.00
 Newtown1.00@1.15
 Pears, Winter Nellis2.25@2.75
 Persimmons, box, dbl layer.65@.90

DRIED FRUITS.

In view of the shortage in other lines, ordinary pears have been marked up a little, and are expected to clean up without difficulty. This week there is no trading of any consequence anywhere, as the attention of the trade is taken up with seasonal activities; and the general condition of the consuming markets may be a little uncertain for the next few weeks. It is believed, however, that no large surplus will be carried into the new year in any branch of the trade, and that there will be renewed inquiry early in the year. The country is more closely cleaned up than usual in practically every line, and from present indications there is likely to be quite a general shortage before the new crop appears. Peace talk tends to increase the firmness of the market, as an end

to the war would bring a strong European demand.
 [Net to growers, bulk basis, f. o. b. shipping point.]

Apples, new crop8 @ 8 1/2 c
 Apricots, per lb. 191615 @ 16 c
 Figs, white, 1916None offered
 Figs, blk.5 1/2 @ 6 c
 Calimyrnas, 1916None offered
 Prunes, 4-size basis, 19166 1/2 @ 7 c
 Pears7 @ 8 c
 Lake County Pears11 @ 12 1/2 c
 Peaches6 @ 6 1/2 c

HONEY.

Supplies here are light, and prices firm, though there is no local movement at present. It is reported that some honey is going to England.
 Water white, comb13@14c
 Amber8 @ 9c
 Light Amber10@12c
 Water white, extractedNone offered
 Light amber6 @ 7 c
 Dark5@5 1/2 c

ALMONDS.

The local trade reports comparatively light business in almonds for the holidays, and the market now is very quiet. Offerings, however, are of negligible quantity, and it is believed that a market can readily be found for anything now on hand.

[Exchange prices.]
 Nonpareils, lb.20 1/2 c
 I. X. L.18 c
 Ne Plus17 c
 Drakes16 c
 Languedoc16 c

HOPS.

Prices are unchanged and rather easy, though a little local demand is reported in some quarters.
 Sacramento9@10 1/2 c
 Mendocino10@11c

HORSES.

If it were not for buyers from outside points, the local market would be a dull affair, as there is very little interest on the part of large users of horses. The present tendency is illustrated by a sale this week of a good lot of wagon and delivery horses from a local firm which is putting in motor power; and a great many such sales have been held in the last few months. Values as a rule are maintained within the range quoted, but sales are slow.
 Drafters, 1700 lbs. and up.250
 Drafters, 1550 to 1650 lbs.150@200
 Chunks, 1350 to 1500 lbs.150@175
 Wagon horses, 1050 to 1350 lbs. 110@150
 Green Mountain range horses, 950 to 1200 lbs.20 @ 75

HIDES.

The tendency of values is still decidedly downward, the present quotations being practically nominal. This is attributed to peace talk, which has at least put an end to fictitious prices; but there is reason to doubt whether the present decline may not be merely a temporary setback.
 Steers21 @ 23 c
 Cows21 1/2 @ 23 c
 Light hides, 25 to 48 lbs.21 1/2 @ 23 c
 Kip31 @ 32 c
 Calf and veal31 @ 32 c
 Dry Hides32 1/2 @ 33 1/2 c
 Dry Kip35 @ 36 c
 Dry Veal and Calf38 @ 40 c
 Pelts, long wool\$1.75@1.90
 Short wool85@1.10
 Horse hides, wet, large, ea.5.00@5.50
 dry, large3.00@3.50

PETROLEUM.

Engine distillate has been marked up 1/2 c.
 Red Crown Gasoline, drums, etc., per gal.20c
 Red Crown Gasoline, cases, per gal. 28c
 Engine Distillate, drums, etc., per gal.10c
 Engine Distillate, cases, per gal. 18c
 Pearl oil, bulk, per gal.9c
 Pearl oil, cases, per gal.17c
 Zerolene, lt., med., heavy, bbls., per gal.41c
 Zerolene, heavy duty oil, bbls., per

gal.51c
 cases, per gal.61c
 Arctic cup grease (No. 0 to No. 5) 10 lbs., per lb.9c
 25 lbs., per lb.8c
 10 lbs., per case "A"\$1.25
 Zerolene, transmission, lubricant, 25 lbs., per case "A"2.50

GROCERIES.

Sugar continues on its downward course, being now quoted on a granulated basis of \$6.95. Codfish is very firm, with a light catch and active foreign demand; and canned salmon is bringing record prices. Coffee, pepper, etc., are very firm. Advances are noted on many brands of matches, candles and some lines of syrup.

LOS ANGELES.

Los Angeles, Dec. 28, 1916.

BUTTER.

Receipts of week ending Dec. 26, 1916—254,840.
 Receipts of week ending Dec. 26, 1915—179,940.

There was no especial interest in this market the past week. It being the week before Christmas and the receipts light, traders on 'change were disposed to go slow. A very good consumptive demand was had for extras at steady prices, but there was very little outside movement. Prices, however, showed no quotable change up to Saturday, though the tone of the market was firm. In sympathy with an advance of 1/2 c in San Francisco on Saturday an effort was made to spring prices a little, but it failed. On call one small lot of extras was sold at 36c, an advance of 1c, but the market finally closed at 35c for extras the same as the previous days of the week. We quote extra creamery36 1/2 c
 Prime first34 c
 First32 c

191635 35 35 35 35 35 1/2
 191528 28 28 28 28 28

Receipts (railroads) for week ending Dec. 26, 1916—917 cases.
 Receipts (railroads) for week ending Dec. 26, 1916—740 cases.

With the Christmas demand out of the way, the market broke sharply Saturday. The first part of our review week, under light receipts and a fair street demand, a steady market was had at 38c for fresh ranch case count. But with the Christmas trade supplied the market Saturday broke 2c. In San Francisco the market from Wednesday to Friday ruled 1/2 c lower. But Saturday under a brisk Christmas demand that market jumped up to 43c for fresh extras.
 We quote fresh ranch case count, 40c. Pullets, 36c. Candle 2c, and selected 3c over quotations.

191637 38 38 34 36 36
 191537 38 36 37 35 35

BEANS.

There was little doing in this market the past week, buyers holding back for the opening of the new year. But while the market is quiet for the time being holders are firm in their views as stocks are only moderate.
 We quote from growers:
 Limas\$7.75@8.00
 Large white9.25@9.50
 Small white9.50@10.00
 Pinks7.25@7.50
 Blackeyes6.25@5.75
 Tepary5.75@6.25

WALNUTS.

With no more in first hands and the stocks in the hands of jobbers having been pretty well worked down, the tone of the market was firm. On 'change 1/2 c over the Association prices was being bid for No. 1 and budded and none were to be had at this advance. Culls coming in fairly and in good demand at 5@6c per pound to growers.
 The Associated prices this year and last are:

No. 11916 1915
 No. 115.50c 13.50c
 No. 212.50c 10.80c
 Budded19.90c 17.00c
 Jumbos17.50c 16.80c

Orchard run 3c less.
 Culls, per lb.5@6c

POULTRY.

A dropping off in the receipts and the Christmas demand caused a firmer tone and better movement the past week. Broilers, fryers and hens were all in very good request and turkeys and ducks sold without trouble. Prices, however, were unchanged from the week before.
 We quote from growers:

Broilers, 1 1/2 to 2 lbs.23@24c
 Fryers, 2 1/2 to 3 lbs.20@22c
 Hens, over 4 lbs.18@19c
 Ducks17@18c
 Geese16@17c
 Roosters, 3 lbs. up (soft bones) 18c
 Turkeys, heavy, 12 lbs. and up. 24@25c
 Turkeys, light21@22c
 Squabs, live, per doz.\$1.50@3.00
 Dressed3.75@4.85

SPECIAL LIVESTOCK MARKET REPORT.

Los Angeles, Dec. 26.

CATTLE: The market situation here is unchanged from a week ago. Receipts only fair and what good to prime beef steers coming in meeting with a very good demand. California and Arizona furnished us most of the supply and are giving up some very good grass-fed steers. Killers all in the market and wanted supplies and the offerings were disposed of without trouble.
 Quotations f. o. b. Los Angeles:

Special Citrus Market Report.

Los Angeles, Dec. 26, 1916.

Shipments of citrus fruit from Southern California from November 1 to December 21: Oranges 2276 cars and lemons 686 cars. The same time last year, oranges 962 cars and lemons 687 cars.

Shipments from Central California from November 1 to December 20, oranges 3311 cars and lemons 93 cars. Same time last year, oranges 3630 cars and lemons 53 cars.

Shipments from Northern California from November 1 to December 20, oranges 778 cars and lemons none. Same time last year, oranges 483 cars and lemons none.

There was an easier tone to the Eastern markets the past week. More offerings and bad weather worked against the trade. Still there was a fair movement and the more popular brands brought fair prices. The movement to market so far has been much heavier than last season, the shipments to December 20 and 21 being 6365 cars against 4775 cars last season the same time. Lemon shipments 782 cars, against 740 cars same time last season. Locally the market has been very quiet since our last report, though

prices are quotably unchanged. With the opening of the new year, however, a better movement is expected. Local packers are bidding 1c per pound for oranges in the grove, 2@2 1/2 c per pound in the grove for grapefruit, and lemons 1@1 1/4 c per pound in the grove for good stock; poor had to be sold for what it would bring.

Weight of oranges, loose, per box, 50 to 55 pounds; grapefruit the same. Lemons, loose, box, 55 to 60 pounds.

EASTERN AUCTION MARKETS.

New York, Dec. 22.—Fifteen cars navels and two cars lemons sold. Navels easier especially on the large sizes, and lemons easier on 300s. Raining hard. California navels averaged \$1.80@3.15. Lemons averaged \$2.05@2.60.

Boston, Dec. 22.—Seven cars sold. Market easier on both oranges and lemons. California navels averaged \$2.05@2.40. Lemons averaged \$1.75@2.25.

Philadelphia, Dec. 22.—Three cars sold. Market doing better on oranges, lower on lemons. California navels averaged \$1.55@2.25. Lemons averaged \$2.50.

THE CALIFORNIA ALMOND GROWERS' EXCHANGE

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SAN FRANCISCO

Beef steers, price 1000 to 1100 lbs.\$7.00@7.75
Stockers and feeders 5.50@6.00
Prime cows and heifers 6.25@6.50
Good cows and heifers 6.00@6.25
HOGS: With the markets East holding up well under heavy receipts and the run the past week only moderate caused a firm tone to the market. But while killers were all in the market and wanted supplies, at the same time they refused to advance prices. California and Arizona furnished most of the supply and of late the arrivals have been light weights and lacked finish, showing the effects of the high-price feed.

Per cwt. f. o. b. Los Angeles:
Heavy, averaging 250@300 lbs. 9.25@9.50
Mixed, 200@250 9.25@9.50
Light, 175@200 9.25@9.50
SHEEP: A firm and fairly active market was had the past week for all offerings. The receipts were only moderate and mostly made up of yearlings and lambs from Utah and Arizona with a few from Idaho. Not many heavy sheep coming in and they were especially firm. While the offerings were not large, what sheep and lambs coming in were in very good condition. Killers were all in the market and wanted supplies and those on sale found a ready demand, and more could have been disposed of if here.

Per head f. o. b. Los Angeles:
Prime wethers\$7.00@7.25
Prime ewes 6.50@6.75
Yearlings 6.50@7.00
Lambs 6.50@7.00
CALVES: Receipts continue light and under light offerings a firm market and fair demand was had the past week for all arrivals. Selling at \$8.50 @9.50 per cwt.

San Francisco, Dec. 27.

No change is reported except a quarter cent reduction on light hogs with which the market was flooded last week. No change in sheep because none are offered except from packers' and butchers' own feed lots. Movement from Utah reported last week has not continued and is not likely to become important. Not much movement of cattle.

WOOL sales in London closed 5 per cent higher but there is weakening in this country on account of peace talk. Contracting for spring wool in Southern California at prices up to 25 cents for choicer lots. No contracting in Northern California reported, but some Nevada farmers are signing up as high as 29 cents. Reports indicate that spring prices will be no higher.

[Prices paid for stock, live weight, off cars, without feed or water, at Stock Yards, South S. F. Hog prices subject to seller standing one-half of all hogs condemned by government inspectors.]

Steers, No. 1 7½@7¾ c
No. 2 6¾@7 c
Cows and Heifers 6½@6¾ c
No. 2 5½@6 c
Bulls and Stags 4½@5 c
Calves, light 8½@8¾ c
Medium 7½@8½ c
Heavy 6½@7 c
HOGS, grain-fed:
100 to 150 lbs. 8½@9 c
150 to 300 lbs. 9½@9¾ c
300 to 375 lbs. 9 c
SHEEP: Prime Wethers 7½@8 c
Ewes 6½@6¾ c
Lambs 9½@10 c
WOOL: Red Bluff, year's 25@27c
Mountain, fall 16@20c
Sacramento Valley, year's 19@25c
Mendocino, year's 32@33c
Mendocino, fall 19@21c
Southern, year's 18@21c
Southern, 7 months' 13@16c
Southern, fall 11@12½ c
Imperial Valley, year's 17@19c
Imperial Valley, 7 mos 14@15c
Nevada 22@24c
Fall wool 10@20c

Publisher's Department.

This issue closes the year, which we trust has been a prosperous one to all our readers. With the Pacific Rural Press the year has been kind. In each department growth is shown—that is, our subscription list is larger and better paid than ever before, the paper has carried more advertising, in value, by nearly 50 per cent than in any previous year; and our agricultural books show advanced sales. All the above, we believe, reflect the prosperity of the State. Plans now nearly perfected will enable us to issue a better and more valuable journal next year than before; so that it is with keen anticipations ourselves, that we wish to all of our great family of readers a prosperous and happy New Year.

The fine rains of the past week have been of great value to the State. Grain growers who had their ground seeded are to be congratulated. Intending tree planters could hardly ask to have conditions more favorable—but a word of advice may be given—buy your nursery trees at once.

"The Pruning Manual," by L. H. Bailey, has just been revised and reprinted and appears in its 18th edition. This book is the latest to cover the subject of pruning, which work, the author says, is much more than the cutting off of limbs and the shaping of plants. Macmillan Company of 66 Fifth Avenue, New York, are the publishers, and the price, cloth bound, postpaid, is \$2 per copy.

Permission has been granted the old-established firm of the Los Angeles Saddlery and Finding Company to change its name to Lichtenberg-Ferguson Company. This firm has two stores in Los Angeles and one in San Francisco. Besides saddlery merchandise, automobile accessories are being handled, and this latter adjunct is getting to be the big end of the business.

Classified Advertisements

MISCELLANEOUS.

EVERY SIZE WROUGHT IRON WATER Pipe and screw casing water pipe, guaranteed as good as new. Prices right. Send for catalogue. We beat no one; everybody gets a Square Deal. Weissbaum Pipe Works 160 Eleventh St., San Francisco.

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BUY ROASTED COFFEE WHOLESALE—Best, 10 pounds, \$3.00 delivered. Order with remittance. Wm. J. Schroth Co., 112-B Market St., San Francisco.

PATENTS THAT PROTECT are procured through Pacific Coast Patent Agency. Savings and Loan Building, Stockton, California. Established fifty years.

TO REDUCE THE HIGH COST OF LIVING, send for our Wholesale to Consumer Catalog. Smith's Cash Store, 106 Clay St. San Francisco.

"HOW TO LIVE ON LESS"—a guide to cheaper living. Wholesale catalogue free. Pacific Co-operative, A236 Commercial St., S. F.

SEEDS, PLANTS AND TREES.

ORDER NOW—Genuine Giant Crimson Winter Rhubarb. The choicest and earliest of all varieties, producing bountiful crops, when other varieties are out of market. Can grow between orchard rows with big returns. 30c each; \$1.50 per ten; \$10 per hundred. Mail orders booked now and shipped when desired. A. P. Baker, 1116 The Alameda, Berkeley, Cal.

OLIVE TREES, Mission and Manzanillo. I have several thousand olive trees propagated for my own planting. Have more than I need and will sell surplus at low price. Write for quotations at once before they are all gone. F. E. Carson, 948 So. Figueroa St., Los Angeles.

SPECIALLY SELECTED ARIZONA ALFALFA Seed—the best there is—at wholesale prices. Shipping warehouses at Modesto, Fresno, and in Arizona. You save at least \$2.00 per hundred by buying direct. Send your address for sample and price. Bomberger Seed Co., Modesto, Cal.

CITRUS TREES—all leading varieties. Large line Lisbon, and Villa Franca Lemon, and Washington Navel Orange Trees. First-class stock and clean. Special prices to dealers or to growers in carload lots. Randall Brothers' Nurseries, Whittier, Cal.

STRICTLY FANCY SEEDS—Alfalfa, Scarified Sweet Clover, Red Clover, Timothy, Ryegrass, etc. Free Bulletin—"Sweet Clover in the Northwest." Write for samples and prices. Ralph Waldo Elden, Central Point, Oregon.

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MISSION OLIVE TREES—Raised from my own bearing trees. This is the only sure way to get what one wants. W. A. Hayne, Box 461, Marysville.

ALFALFA SEED—Common 17c; smooth Peruvian, 22c; Hairy Peruvian, 30c; delivered. Wm. Stuthman, 1238 West Pico St., Los Angeles.

QUALITY TREES—Seedlings, 5c. Prunes 10c. Walnuts, 30c. Cash Nurseries & Seed Store, Sebastopol, Cal.

WANTED.

WANTED—Young men and women to attend the Western Normal Courses—Normal and Academic. The Normal Course gives an adequate preparation for teaching, at a great saving in time and money. Academic course gives practical finish to education. Write for Bulletin "A." Western Normal, 524 E. Market St., Stockton, Cal.

WANTED—Experienced, reliable man for 40-acre alfalfa and hog ranch near Corning and State highway. Good stand, well stocked. Lessee to furnish labor on half share basis. Address Box 410, Pacific Rural Press.

COUNTRY LANDS.

HUMBOLDT STOCK RANCH of about 1600 acres. Good family orchard some tan bark and fir. 200 acres can be farmed. 4 miles from N. W. P. R. R. A good stock ranch that will stand investigating. In order to settle an estate and to compromise litigation, this property has been placed in my hands to sell at \$8.00 per acre. C. E. Robertson, 108 Montgomery Street, San Francisco, Cal., or Bridgeville, Humboldt County, Cal.

FOR SALE—I own and offer for sale 40 acres good alfalfa and alfalfa land 3½ miles southeast of Orland, Glenn Co. This land is on good public road and 1¼ miles from State Highway and good country school. For particulars address Mrs. Geo. W. Simpson, Dixon, Cal.

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FOR SALE—In Fernley Valley, 80-acre dairy farm, well stocked and improved. Price \$14,000. Address O. P. McGarr, Fernley, Nevada.

ASK JOSEPH CLARK, Sacramento, about your nine rights. Information—reverted State and Government land. Any county. Booklet free.

HUMBOLDT STOCK RANCHES—CATTLE—Cattle correspondence solicited. C. E. Robertson, 105 Montgomery St., San Francisco.

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